A pilot study of a brief Self-Distancing and Perspective-Broadening training package for Bipolar Disorder

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Abstract

Objectives

This pilot study investigated whether a training intervention comprising of *decentering* and reappraising, the Self-Distancing and Perspective-Broadening (SD-PB) package, was able to 1) reduce symptomatology or 2) improve the ability to *decenter* or perspective-take in individuals with Bipolar Disorder.

Design

The study employed a small N single case-series design with an "A-B" phase methodology.

Method

Six individuals diagnosed with Bipolar Disorder but in a euthymic state were recruited through the MRC-CBSU in Cambridge. The participants were asked to fill out daily mood measures of symptomatology for two weeks. Following this, the SD-PB training commenced, which comprised two face-to-face sessions and one week of daily homework, during this time participants were asked to continue to fill out daily mood measures of symptomatology. Several self-report measures of affective lability, anxiety, the ability to *decenter* and the ability to perspective-take were administered at four time points during the study and at an online two-week follow-up.

Results

Two participants were categorised as *responder*s in terms of their reductions in mood symptomatology. The self-report measures showed that five out of six participants showed reductions in anxiety and improvements in the ability to *decenter.* Four participants showed reductions in affective lability and three participants showed improvements in the ability to perspective-take. Pre- and post-training measures showed all participants experienced some improvements in positive thinking and reductions in negative thinking.

Conclusions

The results indicate the SD-PB package has potential for reducing a range of symptomatology in BD and is able to bring about more helpful thinking styles. However, due to the limitations of the study these results should be interpreted with caution and more studies are needed in the future to build confidence in the package. The contribution this study has made to existing literature and the clinical applications are discussed.

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Preface

The work described in this thesis was conducted at the University of East Anglia and the Medical Research Council Cognition and Brain Sciences Unit, under the supervision of Dr Margo Ononaiye, Dr Martina Di Simplicio, Professor Kenneth Laidlaw, and Professor Emily Holmes.

Declaration: This dissertation is the result of my own work and includes nothing which is the outcome of work done in collaboration except where specifically indicated in the text.

Statement of length: The dissertation does not exceed the word limit of 40,000 words. The total number of typed pages in this thesis (not including the reference list and appendices) is 156 pages.

Signed

Emma Hill
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I would like to finish my acknowledgements with the following:

I would like to dedicate this thesis to the memory of my Grandad,

Mr Daniel (Danny) Henry Hill

A man that was and always will be my greatest inspiration. He installed in me key values which made this all possible: determination, hard work, passion and the aspiration to do something worthwhile and unique. His recent passing and the sense of him always nearby maintains my own perspective on what is important in life.

Chapter 1: Introduction

"We can complain because rose bushes have thorns, or rejoice because thorn bushes have roses."

Abraham Lincoln

1.1 An introduction to Bipolar Disorder

Bipolar Disorder (BD) is characterised by recurring episodes of depression and mania; a depressive episode must consist of at least five symptoms of depression (one of which must be depressed mood or a diminished interest in pleasure in previously enjoyed activities) lasting at least two weeks, and a manic episode must consist of at least three symptoms of mania (crucially persistently elevated and/or irritable mood) lasting at least one week (American Psychiatric Association, 2013).

The DSM 5 (American Psychiatric Association, 2013) describes in detail the range of symptoms that an individual with BD may experience. To summarise, the main symptoms of depression include: depressed mood most of the day nearly every day, a reduced interest or pleasure in previously enjoyed activities, significant changes in weight or appetite, difficulty sleeping, feeling agitation or retardation, a loss of energy, feeling worthless or guilty, difficulty concentrating or making decisions, and lastly thoughts of death or suicidal ideation. The main symptoms of mania include: inflated self-esteem or grandiosity, decreased need for sleep, increased talking, racing thoughts or jumping around of ideas, easily distractible, an increase in goal-directed activity or agitated behaviour, and involvement in pleasurable activities that may be dangerous.

According to the DSM 5 (American Psychiatric Association, 2013), if an individual is diagnosed with Bipolar I disorder, then they are likely to experience depressive and manic episodes as described above, and within the diagnosis they may be given a sub-diagnosis dependent on what episode they most recently experienced. They may also experience what is known as a mixed episode, which is when an individual experiences symptoms of both depression and mania over the period of at least one week (American Psychiatric Association, 2013). If, however, an individual is diagnosed with Bipolar II disorder then they experience hypomanic episodes which are less intense and last at least four days but less than seven days (American Psychiatric Association, 2013).

Considering the vastness in the number and diversity of symptoms that an individual with BD could encounter, one may predict that it is unlikely that any two individuals with BD would share the same emotional and behavioural experience. It is also important to note that whilst someone who encounters depressive and manic experiences is often diagnosed with BD, the experiences are thought of as complex and overlapping and therefore range on a continuum with normal experiences (Jones & Bentall, 2006).

Unfortunately individuals with BD do not just experience symptoms whilst they are in an episode, they also experience residual symptoms whilst they are in remission (or euthymic) (Perlis et al., 2006). The depressive residual symptoms experienced have been shown to predict a shorter time to depressive relapse, and manic residual symptoms predict a shorter time to manic, hypomanic or mixed episode relapse (Perlis et al., 2006). A longitudinal study of 18 months showed that patients were symptomatic 53% of the time, with depressive symptoms present three times more than manic symptoms (Paykel, Abbott, Morriss, Hayhurst, & Scott, 2006). Research has also shown that individuals with BD have higher levels of affective lability, compared to healthy controls, even when euthymic (Henry et al., 2008), and the more unstable the positive and negative affect when euthymic the greater impairment in functioning (Gershon & Eidelman, 2015).

To date, a consensus has not been reached in regards to the factors that cause an individual to develop BD. There is evidence to show that BD has a biological basis as the prevalence rates are higher for first degree biological relatives and also twin and adoption

studies have shown a proportion of the illness risk is genetic (see Craddock & Jones, 2001), however researchers are still searching for a reliable genetic marker. In addition to this, research has shown abnormalities in neurotransmitter systems, in the regulation of signal transduction cascades, and in neuroplasticity in BD (see Manji et al., 2003). The British Psychological Society (BPS) published a document outlining several possible social and environmental factors that may contribute to BD onset including family characteristics, family functioning, friendships and social support, and life events (BPS, 2010). Therefore, it may be the case that a range of causal factors interact together in BD.

When considering the impact of BD, individuals with the disorder are at high risk of suicide with 10-20% taking their own lives and nearly one third admitting to at least one attempt (Muller-Oerlinghausen, Berghofer, & Bauer, 2002). In addition to this, a recent survey showed that out of 9000 people with a diagnosis of BD, 92% had at least one comorbidity with another psychological disorder (Merikangas et al., 2007). Some of the common comorbidities are anxiety disorders and substance abuse (Freeman, Freeman, & McElroy, 2002; Möller, 2003; Regier et al., 1990). For example, Simon et al. (2004) found that over half of people with a diagnosis of BD also suffer from anxiety. On a wider scale, BD has a cumulative lifetime prevalence ranging from 1.5-2% across Europe (Pini et al., 2005) and therefore BD places a great deal of pressure on health services all over the world to provide millions of people with treatment all at the same time.

Unfortunately, BD is usually described as a lifelong disorder due to the high relapse rates, with 50-60% of people relapsing within one year of recovery from an episode (Kessing, Hansen, & Andersen, 2004). A new movement from both the National Institute for Health and Care Excellence (NICE, 2014) guidelines and the National Health Service in England (Department of Health, 2009) is around promoting a recovery focus in services. This means that there is a focus on what recovery means to the individual and setting therapy goals accordingly. This is especially important in a lifelong disorder such as BD so that goals are realistic and achievable. Jones et al. (2012) developed a recovery-focused Cognitive Behaviour Therapy (CBT) for BD, with the aim of restoring hope in individuals that historically may have been told that they will never reach any sort of recovery. This uncovered some key recovery focused themes in BD which include: aiming to see mood

experiences as understandable and manageable, seeing recovery as a life-long process, developing resources to self-manage mental health, and improving access to personally meaningful activity. This new movement demonstrates how important it is to develop new ways of thinking about BD and taking new perspectives on the therapeutic approaches that are used.

1.1.1 Therapeutic approaches to Bipolar Disorder

NICE (2014) guidelines recommend that BD is predominantly managed with medication, such as lithium, olanzapine and valproate. Research has shown that for most people taking medication (specifically lithium), it is effective in increasing the time between episodes, or in other words in preventing relapse (Geddes, Burgess, Hawton, Jamison, & Goodwin, 2004). The limitations of using medication for the long-term management of BD are the potentially unpleasant side-effects, and the risk posed by lithium to unborn babies (see Geddes & Miklowitz, 2013). Moreover, although lithium is recommended for BD it does not work for everyone, as recent meta-analyses have found that only 60% of BD patients on lithium remained well over 1-2 years (Geddes, Burgess, Hawton, Jamison, & Goodwin, 2004) and only 47% of BD patients responded well to lithium (Yildiz, Vieta, Leucht, & Baldessarini, 2011).

The NICE guidelines, however, also recommend that individual structured psychological interventions such as CBT are also used in the long-term management of BD, in adjunct to medication (NICE, 2014). The guidelines recommend CBT is used in the case of moderate-severe depressive symptoms (focused on the depression) or after an acute episode for people who are relatively stable but have mild to moderate affective symptoms. A meta-analysis has shown that CBT effect sizes range from small to moderate, with an average effect size of small (Cohen's *d* of -0.29) on depressive symptoms in BD as measured by standardized symptomatology questionnaires (Gregory, 2010a). Another meta-analysis has shown that CBT effect sizes range from no effect to large with an average effect size of small (Cohen's *d* of -0.26) on manic symptoms in BD as measured by standardized symptomatology questionnaires (Gregory, 2010b). A potential limitation of CBT for BD is

that recent studies have found that the effectiveness of the treatment may be limited to less chronic presentations, for example individuals with fewer previous mood episodes (Scott et al., 2006).

The BPS (2010) highlights that the main aim of most psychological therapies for BD is to help individuals to develop strategies that will reduce the likelihood of future episodes. It also explains that most of these are offered when people are not within an episode, an important consideration given that problems with mood also occur between episodes. The document highlights that there are different psychological treatment approaches to BD other than CBT, which include: group education focusing on a shared experience of BD and learning more about mood swings (Honig, Hofman, Hilwig, Noorthoorn, & Ponds, 1995), interpersonal and social rhythm therapy concentrating on the link between mood and external events and relationships (Frank et al., 2005), family focused therapy aimed at improving understanding, communication and problem solving between the individual and their family (Miklowitz, George, Richards, Simoneau, & Suddath, 2003) and schema therapy focusing on identifying and dealing individuals schemas and replacing maladaptive coping styles with adaptive ones (Ball, Mitchell, Malhi, Skillecorn, & Smith, 2003). Miklowitz (2008) conducted a review of the effectiveness of these psychological therapies with BD and concluded that family therapy and interpersonal therapy were most effective at preventing relapse when administered after an acute episode, and CBT and group therapy were most effective when administered in remission.

In addition to the psychological interventions mentioned above, there is emerging research that suggests that Mindfulness Based Cognitive Therapy (MBCT) (Segal, Williams, & Teasdale, 2002), which focuses on relapse prevention through the use of meditation, is also effective in reducing depressive symptoms, anxiety and improving emotion regulation (Ives-Deliperi, Howells, Stein, Meintjes, & Horn, 2013; Weber et al., 2010; Williams et al., 2008).

Despite growing evidence for the effectiveness of psychological interventions for BD, they do come with their limitations. One limitation is demonstrated in the review by Miklowitz (2008), who discovered that the therapies varied in effectiveness according to which symptoms they were targeting (depression or mania) and what they focused on to

bring about change (emphasis of medication adherence, early recognition of symptoms, or interpersonal coping strategies). Taking this into account, one could conclude that psychological interventions have a similar predicament to pharmacological interventions, in that not everyone will respond and it is a complex picture as to what predicts response. This provides a rationale for why more research into psychological interventions for BD is necessary, especially in order to provide a greater understanding of the mechanisms of change (i.e. what predicts response).

This introduction focuses on two of these psychological interventions in particular: CBT and MBCT. Later in this chapter the theory, evidence and components/mechanisms underlying these interventions will be discussed in more detail.

1.1.2 Therapeutic challenges in Bipolar Disorder

When evaluating the effectiveness of therapeutic approaches and attempting to take a new perspective on them, it is important to consider the challenges that not only occur when conducting therapy in general, but also specific challenges that occur with this particular client group.

One prominent therapeutic challenge that occurs across the treatment of mental health disorders is engagement of the client; this can be indicated by a range of behaviours and has been captured in many research papers (see review by Holdsworth, Bowen, Brown, & Howat, 2014) . In BD, symptomatology adds a layer of complexity with engagement which acts as an additional barrier at each stage of the treatment. For example, individuals with BD can experience times with they feel happy, elated and full of energy and during those times it can be difficult for people to seek help, possibly due to fear of stigmatisation or difficulties with insight (Yildiz, 2015) . Similarly, some people may avoid treatment for fear that it may take away the positive symptoms. For example, Redfield Jamison (1996) who has a diagnosis of BD describes her positive symptoms as a valued sense of feeling more deeply and experiencing more intensely.

Another therapeutic challenge closely linked with engagement is that it can take on average 5-10 years for an individual with BD to receive the correct diagnosis (Evans, 2000). One reason for this may be that bipolar experiences are often identified as unipolar experiences (depression), as evidence has shown that this occurs in both primary and secondary care and may be due to the clinician not asking questions on mania (Mantere et al., 2008; Smith et al., 2011). Therapeutically, this can result in a more entrenched set of symptoms and behaviours by the time an individual is seen for treatment, and potentially individuals could receive unhelpful interventions if they have the wrong diagnosis (Evans, 2000).

An additional therapeutic challenge is that most psychological therapies used to treat BD were not designed with BD in mind. Many treatments (e.g., recovery-focused CBT for BD; Jones et al., 2012) and models used for BD (e.g. the diathesis-stress model; Lam, 1999) have been adjusted from those provided for depression and psychosis. It may be helpful in the future to try to think about BD as an entity in itself and develop models and treatments accordingly.

The treatments that *are* recommended for BD have their own therapeutic challenges. For example, as a whole CBT and MBCT can be time-consuming, expensive, and cognitively demanding, requiring a high level of functioning in one or more cognitive functions (Durham, Swan, & Fisher, 2000). In addition to this, effect sizes for these psychological treatments of BD are rarely reported in scientific papers (Gregory, 2011), therefore it is difficult to reliably judge *how* effective they are. Papers that have reported effect sizes demonstrate how varied they can be, for example Lam et al. (2000) reported a small effect size, Scott, Garland, and Moorhead (2001) reported a large effect size, and Lam et al. (2003), reported no effect. Therefore, clarity of the effect size of CBT in BD is needed.

Accordingly, and due to the youth of psychological treatment research in BD (which only really began to emerge in the 1990s), one could argue that BD may be one of the emotional disorders in greatest need of novel and evidence-based treatments and approaches.

1.2 The Cognitive approach to Bipolar Disorder

1.2.1 Cognitive theories of Bipolar Disorder

The cognitive approach in general focuses on the role of key cognitive difficulties in the onset, maintenance and recovery from psychological disorders (Beck, 1967). These include difficulties in cognitive functions such as attention, memory, judgment and higher-order process of thinking and reasoning. It is theorised that psychological disorders are characterised by both difficulties and cognitive biases in these domains (Mathews & MacLeod, 2005). The way in which information is processed in individuals with psychological disorders is thought to play a role in the development and maintenance of such disorders (e.g., Eysenck, 1992).

Causality can be difficult to establish. Alloy, Abramson, Raniere and Dyller (1999) suggested that if difficulties in cognitive functions (such as information processing) played a causal role in a disorder then they must temporally precede the onset of the disorder. They suggested that ideally prospective longitudinal designs are needed as they can establish the temporal precedence and independence from symptoms. There have been no longitudinal studies to date that have been conducted in BD in relation to cognitive functions (Alloy, Abramson, Urosevic, Bender & Wagner, 2009). However, there have been studies looking at cognitive styles: One has found that more negative and fewer positive automatic thoughts predicted increases in depressive symptoms (but not manic) at a two-year follow-up (Johnson & Fingerhut, 2004), and another showed negative inferential styles for negative events predicted onsets of major depressive episodes over 33 months (Alloy, Abramson, Walshaw, Whitehouse, & Hogan, 2006).

Causality has also been studied using Cognitive Bias Modification by modifying cognition and measuring its effect on emotion. For example, training interpretation can influence emotional reactions in subsequent tasks (Mackintosh, Mathews, Yiend, Ridgeway & Cook, 2006), and manipulating ruminative versus distracting thoughts has produced changes in depressed mood (Nolen-Hoeksema & Morrow, 1993). The opposite direction of causality has also been studied by modifying emotion and measuring its effect on emotion, for example, using the Velten mood-induction procedure (Velten, 1968) to manipulate

positive, neutral or negative emotions lead to cognitive changes (e.g. recall, judgments) (Bower, 1981). However, to date, such an approach has not yet been used in BD.

It is important to understand cognitive theory and the models which draw on these fundamental principles. The fundamental principles of cognitive theory were outlined by Aaron (1967) in his cognitive model of unipolar depression. The model describes three key concepts which are crucial to the understanding of depression, and which also apply to many other psychological disorders. The first concept is that of the cognitive triad, central to this concept is the idea that individuals have negative thinking patterns that effect how they view themselves, the world and the future. The second concept is that of schemas, central to this concept is the idea that individuals have sets of stable cognitive representations formed by their experiences that drive their views and interpretations of situations. The third concept is that of cognitive biases and errors: when individuals process information in a maladaptive way, it maintains their beliefs and schemas.

Beck, Rush, Shaw, and Emery (1979) then refined Beck's (1967) model and developed a longitudinal cognitive therapy model of unipolar depression (see figure 1.1). A simple summary of the model is that our early experiences influence our assumptions about ourselves, other people and the future. These assumptions are then triggered by critical incidents, which in turn activate negative automatic thoughts, and lead to depression. This classic model has been adapted and found to be helpful for many different psychological disorders (for a review see Beck & Dozois, 2011), one of which is BD (e.g., Newman, Leahy, Beck, Reilly-Harrington, & Gyulai, 2002; Wright & Lam, 2004). Some BD adapted versions of the model have focused more on suicidality (Newman, Leahy, Beck, Reilly-Harrington, & Gyulai, 2002), sleep continuity (Lam, 1999), and treatment adherence (Basco & Rush, 2005). However, overall all the models have been criticised for being over-simplistic in the development and complexity of mania (Power, 2005).

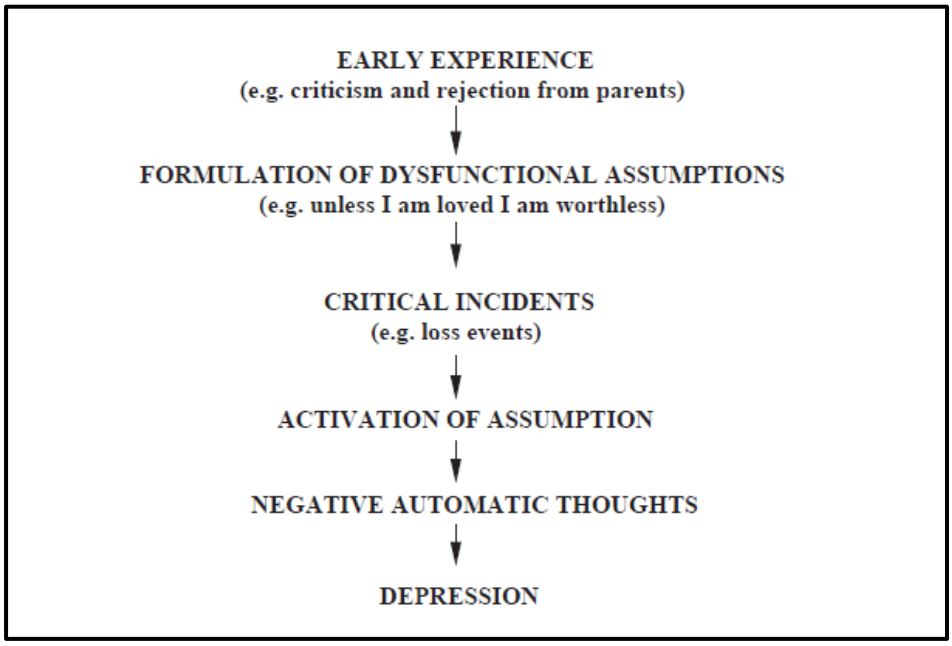


Figure 1.1: Beck's cognitive therapy model of unipolar depression (Beck et al., 1979).

A model which started the development of CBT for BD specifically is the psychobiological diathesis-stress model for manic-depressive illness (Goodwin & Jamison, 1990). This model outlined three factors associated with the onset of BD: genes/family, life events and poor social routine/circadian rhythm disturbances. From this, Lam (1999) developed a model to explain in more detail how the diathesis-stress model can be related to clinical symptoms of BD. Lam described the progression to the prodromal (problem) stage as follows: stressors (such as life events or highly driven behavior) lead to poor social routine and sleep deprivation, which then lead to (and lead from) biological vulnerability. Once in the prodromal stage, Lam describes a vicious cycle where poor coping strategies lead to an episode of mania or depression, and from this episode stigma and relationship problems emerge, which then in turn leads back to stressors (described at the start of the model). Lam's model shows that a clinician can intervene at many levels: biological, social or psychological. In addition to this, when looking back on the other models it was the first model to highlight the importance of circadian rhythms in BD and therefore invited clinicians to think more about this in their therapy (hence the use of sleep hygiene by clinicians).

Since Lam's (1999) model there have been several additional perspectives which have endeavoured to explain what drives the symptoms of the BD. These include Jones' (2001) adaptation of Power and Dalgleish's (1997) multi-level model of emotion (Schematic, Propositional, Analogical, and Associative Representation Systems: SPAARS model) for BD. Jones' model (see figure 1.2 below) emphasises the importance of stable circadian rhythms in BD, and hypothesises that a disruption in circadian rhythms may be a trigger to the development of mania. This model is in line with Lam's (1999) model, as the reasoning behind circadian rhythms being a trigger to mania lies in the hypothesis that life events (a common precursor to mania) cause problems with sleep (i.e., due to stress). Jones' model shows a more in-depth understanding of how a disruption in circadian rhythms impacts on a schematic level, an associative level and a propositional level, which then in turn leads to the development of mania. The model therefore shows the importance not only of circadian rhythms in the development of mania but also that cognitions play a mediating factor too, specifically the way in which a person thinks about the initial event. Therefore, this model provides insight to clinicians as to where they can focus their interventions. It is suggested that to make changes at a schematic level, work needs to be done on reappraisals of the positive appraisals, to make changes at an associate level insight is needed and repetition of the reappraisal work; and to make changes at a propositional level the patient needs to find alternative ways of reaching their positive consequences (Jones, 2001).

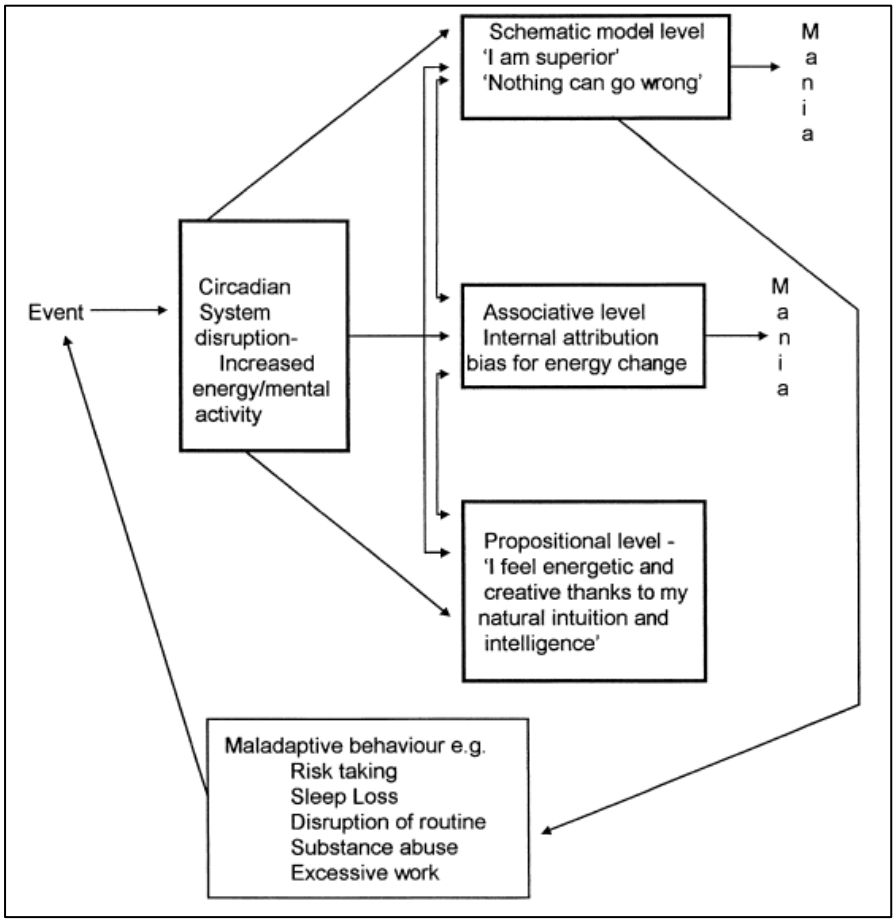


Figure 1.2: Jones' adaptation of the SPAARS model for BD (Jones, 2001).

Barnard and Teasdale's (1991) Interacting Cognitive Subsystems (ICS) model hypothesizes that the mind comprises nine interacting cognitive subsystems which are committed to processing specific types of information. In addition to this, there are two modes of processing: the 'doing mode' which involves being in a goal-orientated mind-set, and the 'being mode' which involves being in a more accepting, non-goal related mind-set. The ICS model predicts that the more an individual relies on just one mode of processing information the more vulnerable they are to developing emotional disorders (i.e., the greater the ability to switch between modes the healthier a person is in terms of their mental health). However, to date, there have been no adaptations or applications of this model to BD. Instead the model has formed the underpinning of MBCT, which will be discussed in more detail later in the chapter.

Another cognitive model for BD is the Integrative Cognitive Model of Mood Swings and BD (Mansell, Morrison, Reid, Lowens, & Tai, 2007) (see figure 1.3 below). Similarly, to the models by Lam (1999) and Jones (2001), Mansell et al. (2007) emphasises the importance of a triggering event leading to what is referred to as 'changes in internal states' (i.e., circadian disruptions). This model then hypothesises that these changes in internal states lead on to the development of appraisals, as in Jones' model. In contrast to the aforementioned model, Mansell and colleagues argue that appraisals are not only developed through this avenue, but also through ascent behaviours (e.g., behaviours that individuals engage in to disengage from their mood) and descent behaviours (e.g., approach behaviours that individuals engage in that lead to a reward of some kind). In addition to this, appraisals can be developed through life experiences which then aid an individual to form their beliefs about the self, the world and others, which in turn form and influence the set of appraisals an individual utilises. The concept of individuals having a set of beliefs has originated from Beck's (1967) Cognitive Model of Depression and is referred to as the cognitive triad of thinking patterns, a concept that has been widely supported in research when comparing the triad in depressed and non-depressed individuals (e.g., Anderson & Skidmore, 1995; Haaga, Dyck, & Ernst, 1991). The advantage of this model is that it provides insight to clinicians as to the many ways in which they can intervene, for example through encouraging new reappraisals, encouraging adaptive behaviour patterns and challenging an individual's belief system (Mansell et al., 2007). A disadvantage of this model is that it is extremely similar (but written using more cognitive language) to a neuro-biologically based motivation model of BD called the Behavioural Approach System hypersensitivity model of BD (Depue, Krauss, & Spoont, 1987), and the later model has a greater evidence base (Alloy et al., 2008).

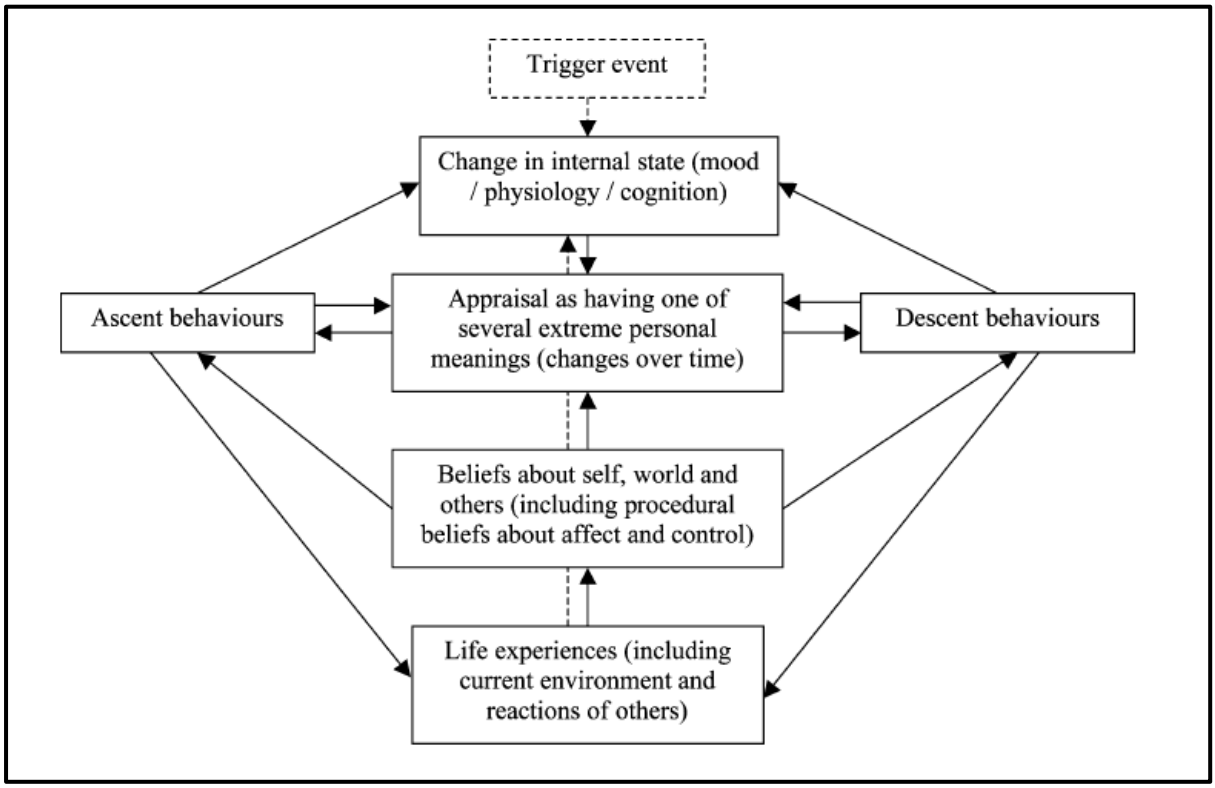


Figure 1.3: The Integrative Cognitive Model of Mood Swings and BD (Mansell et al., 2007).

Overall, the aforementioned cognitive models have adapted the standard cognitive model (Beck, Rush, Shaw, & Emery, 1979) and have highlighted some bipolar specific factors that may be important in understanding BD, such as sleep/circadian rhythm disturbance (Lam, 1999). It should be noted though that circadian rhythms would not be categorised as a cognitive factor, but instead a biological factor. The models have also expanded the standard cognitive model (Beck et al., 1979) by hypothesizing *what* thoughts/appraisals may be present in BD (i.e., Internal attribution appraisals) (Jones, 2001; Mansell et al., 2007), and *what* behavior may be common in BD (i.e., risk tasking, sleep loss, disruption of routine, substance misuse, excessive work)(Jones, 2001).

The overall disadvantage of the cognitive models is that they cannot account for the full picture of BD. For example, research has shown individuals with BD have difficulties with regulating their emotions in terms of maintaining their negative emotions (Gruber, Purcell, Perna, & Mikels, 2013) and difficulties with amplified emotionality (Gruber, Kogan, Mennin, & Murray, 2013), yet the cognitive models fail to take this emotion hyper reactivity and dysregulation into account. As mentioned earlier in the chapter, there are other non-

cognitive models which take into account other important factors of BD, such as the link between the reward system and mania in the Behavioural Approach System hypersensitivity model of BD (Depue, Krauss, & Spoont, 1987).

1.2.2 Cognitive therapy for Bipolar Disorder

Beck's (1967) cognitive model led to the development of cognitive therapy (Beck, 1976). This has since been combined with behavioural methods, such as event scheduling and behavioural experiments, to form CBT.

According to Beckian (1976) CBT, therapy occurs in three phases: assessment (gaining information about the difficulties, relating them to the model and then formulating a plan for therapy), therapeutic work (involving a variety of techniques including recording automatic thoughts, challenging the validity of thoughts and assumptions, behavioural experiments, and homework tasks), and ending (empowering the individual for the future with relapse prevention work). Beck also describes four main instruments of change in CBT: behavioural techniques (e.g., encouraging positive activities and activity-enriched diaries), identifying and challenging negative automatic thoughts (e.g., recoding and challenging the validity of the thoughts), understanding maladaptive thinking patterns (e.g., identifying Beckian thinking distortions), and changing and testing thinking patterns (e.g., finding evidence). In sum, the individual learns to self-monitor mood, thoughts and activities, control negative thinking, thought-catch, self-distance through the labelling of thoughts and assumptions as hypotheses, and evaluate and reality-test those hypotheses (Beck, 1976).

It was in the 1980s that case reports (e.g., Chor, Mercier, & Halper, 1988) first started emerging from clinicians who had successfully used Beck's cognitive therapy (Beck, Rush, Shaw, & Emery, 1979) with BD. The most useful parts of the therapy were reported to be developing with the client a range of strategies to help them to cope with stressors and life events. In addition to this, evidence was emerging that cognitive therapy was more effective than treatment as usual in helping clients to adhere to their lithium medication (Cochran, 1984).

There are currently many manuals for cognitive therapy for BD, both in clinical trials and books (e.g., Lam, Jones & Hayward, 2010). Newman (2002) describes six basic goals of cognitive therapy with BD: to educate patients about BD, to test and monitor their thinking,

to teach them problem-solving skills, to help the patient to control their tendency to be impulsive, to modulate expressions of affect through modelling and role-play, and to encourage planning skills. In addition to these goals, Newman describes special considerations when working with individuals with BD, including cognitive case conceptualisation to help the person to understand themselves (e.g., through the cognitive triad of thinking), helping the individual to form a healthy relationship with their medication and be aware of levels of hopelessness and degree of risk.

CBT has been found to be particularly useful for individuals with BD when it is focused on identifying the maladaptive thinking patterns that precede episodes of depression or mania and the adaptive thinking patterns that are present when the individual is well (Lam et al., 2003). When comparing CBT with treatment as usual, the results showed that CBT significantly reduced relapse, improved mood symptoms and led to an improvement in social functioning (Lam et al., 2003). However, not all CBT trials for BD have been as successful. For example, Scott et al. (2006) compared CBT with treatment as usual and the results showed half of the patients relapsed by 18 months (no different to the treatment as usual group) and that CBT was only significantly more effective than treatment as usual for individuals who had less than 12 previous mood episodes (a subset of BD). Research has also found that CBT is equally as effective as psycho-education for BD (Parikh et al., 2012), and it has been highlighted by Colom and Vieta (2004) that almost all psychological interventions for BD include a psycho-educative component (for example, compliance enhancement, early identification of prodromal signs). A recent review of BD treatment by Geddes and Miklowitz (2013) highlighted the need for treatments to consider the neurobiological and psychosocial mechanisms in BD, for research to investigate the optimum combination of pharmacological and psychotherapeutic treatments, to gain a better understanding of how treatments effect circadian rhythms and their link to mood fluctuations, and for treatments to be made briefer and more efficient as to be economically viable.

A recent adaptation is recovery-focused CBT (RfCBT), which emphasises client-focused goals rather than presuming a target of relapse prevention (Jones et al., 2014). In a recent trial, RfCBT was compared with treatment as usual for early intervention BD: the results showed that RfCBT significantly reduced relapse rates and improved ‘personal

recovery' in relation to the concept of what recovery meant to the individual (Jones et al., 2014). Overall, BD is treated with moderate success using CBT (NICE, 2014), however, it is important to maintain a degree of caution as Gregory (2011) highlighted that effect sizes from trials were rarely reported, therefore *how* successful CBT is for BD still remains uncertain.

Although CBT is widely used it does have its limitations. One limitation is that although the mechanisms behind CBT are described by Beck (1976), a consensus has not been reached on the key mechanism of change. For example, Persons and Burns (1985) examined the effect of cognitive therapy on thought and mood change in depressed and anxious patients, and found that a change in belief in negative thoughts was significantly correlated with the improvement in mood. Similarly, Teasdale and Fennell (1982) compared the effects of cognitive restructuring and thought exploration in depressed patients, and found that cognitive restructuring produced a greater change in the beliefs in negative thoughts and depressed mood. This being said, the understanding of mechanisms behind CBT is far more developed than for the majority of other psychological interventions used for psychological disorders. However, another limitation is that having beliefs labelled as irrational may de-value the client's lived experience and that the therapy focuses too much on measured outcomes rather than the relational aspects of therapy (Spinelli, 1994).

Another limitation of CBT is that it can be highly cognitively demanding (Durham et al., 2000). This means that it either requires many cognitive functions to be utilized in a short amount of time or it requires a high level of functioning of one or more of the cognition functions. There is unfortunate paradox here as the DSM 5 (American Psychiatric Association, 2013) details that some of the criteria for symptoms of BD include problems with cognition, such as difficulties concentrating, making decisions and problem solving. Therefore, it is important that CBT is delivered when an individual diagnosed with BD is in a mood state where they can respond effectively to the cognitive demands. This paradox also highlights the need to develop novel interventions and adapt existing interventions to be less cognitively demanding, which is an idea central to this thesis.

Overall, it is important to acknowledge that CBT has its limitations and may not be the optimal therapeutic approach for everyone with BD. This provides evidence that more

research is needed into refining the understanding of what works in CBT and utilising it to develop new approaches.

1.2.3 Reappraisals and their role in Bipolar Disorder

In light of understanding what works in CBT, this thesis will focus on appraisal and reappraisal. According to Beck's cognitive model (1967), the way in which we think about events in our lives (i.e., the way in which we appraise and put meaning to events) may play an important part in the development and maintenance of mental health problems. The concept of appraisal was introduced by Arnold (1960), who described it as the process that determines how significant an emotional event is and how much of an effect it will have on an individual's wellbeing. Abramson, Seligman, and Teasdale (1978) hypothesised that we appraise events in our lives because as humans, we have a desire to understand uncontrollable negative events (i.e., to ask 'why'). However, the process of asking 'why', which has an abstract, analytic and evaluative nature, has been found to lead to rumination in unipolar depression (Teasdale et al., 2002).

It could be argued that the link between the appraisals of events and mental health problems are especially pertinent for individuals with BD, as not only are appraisals included in many models of BD (e.g., Lam, 1999; Mansell et al., 2007) but research has shown that stressful life events are often the trigger for earlier episodes of mania and depression (e.g., Ambelas, 1987). Beck (1967) explains that the construal (i.e. appraisal) of a situation governs one's emotional response rather than the situation itself, which infers that the way an individual appraises an event may be crucial to impact that event has on them.

In terms of appraisals being a maintenance factor, research has shown that individuals with BD who experience extreme mood states often find day-to-day problems more stressful than people without this diagnosis (McPherson, Romans, & Herbison, 1993; Myin-Germeys, Krabbendam, Delespaul, & van Os, 2003). In addition to this, the higher levels of stress around life events are linked to higher rates of relapse and slower recovery rates in BD (Ellicott, Hammen, Gitlin, Brown, & Jamison, 1990; Johnson & Miller, 1997). It is important to note that appraisals alone are unlikely to explain the link between BD and the occurrence of life events or the stress levels, and there may be other factors involved.

Difficulties with appraisals in individuals with BD may result in different outcomes according to the individual's mood state (i.e., mania or depression). For example, one might hypothesise that during a manic episode an individual may experience distorted appraisals such as grandiosity and difficulties in seeking help. In contrast, one might hypothesise that during a depressive episode appraisals may be overly-negative which may result in rumination and withdrawal.

*Re*appraisal refers to the process by which an individual replaces an initial appraisal they have given something, such as an event, with another more adaptive one (Abramson et al., 1978). Reappraisals are one way in which CBT can work to change cognitive representations. The consequent assumption underlying this mechanism is that changing a maladaptive appraisal can lead to changes in mood. Reappraisals play a key role in many emotion regulation models. Indeed, Gross's (2002) process model of emotion regulation states that there are five stages of emotion regulation of which cognitive change (through appraisal) is stage four. The stages include: situation selection (to choose to approach situations), situation modification (changing a situation so the emotional impact is reduced), attentional deployment (selecting what an individual should focus their attention on), cognitive change (assigning an adaptive meaning to a situation through appraisal), and response modulation (modulation of an individual's emotional and behavioural responses to a situation). Gross describes the process of appraisal as a top-down process of emotion regulation. Lazarus's (1991) theory of cognitive appraisal proposed that there are two stages of appraisal that are not necessarily conscious. The first stage is primary appraisal, which is when an individual encounters a stimulus and has to decide whether it is positive, negative or neutral. The next stage is secondary appraisal, which is when an individual has to assess what their coping resources are and their accessibility. From the appraisal process, an individual can devise a plan for action. Research has shown that the process of reappraisal has been found to reduce negative emotional subjective experiences (Gross, 1998). Additionally, high habitual users of reappraisals experience and express greater positive emotion and lesser negative emotion, and have better interpersonal functioning and wellbeing compared to habitual suppressers (Gross & John, 2003).

There is emerging research into the use of reappraisals in BD. Firstly, neuroimaging research has shown that individuals with BD show impairments with emotion regulation in

general (Almeida et al., 2009; Altshuler et al., 2005; Strakowski et al., 2011). Research has found that individuals with BD have difficulties in particular with positive emotion regulation (Johnson, Gruber, & Eisner, 2007). More specifically, self-report emotion regulation studies have shown that, compared to healthy controls, individuals with BD report an increased use of rumination, catastrophising and self-blame, and a decreased use of positive reappraisal and putting into perspective (Green et al., 2011; Wolkenstein, Zwick, Hautzinger, & Joormann, 2014). Interestingly, Wolkenstein et al.'s (2014) study was conducted with euthymic BD individuals, therefore suggesting that the maladaptive pattern of used emotion regulation strategies is present even outside of a mood episode, although it should be noted that this is in relation to negative stimuli. Neuroimaging studies have found that individuals with BD show an impaired down-regulation of amygdala activity (compared to healthy controls) whilst trying to reappraise emotional images, which was correlated with the habitual use of reappraisal (Kanske, Schönfelder, Forneck, & Wessa, 2015).

One study investigated what happens when individuals with BD are instructed to reappraise in a certain way. Gruber, Hay and Gross (2014) asked remitted BD individuals to watch film clips (positive, negative and neutral). During this study, participants in the reappraisal condition were instructed to adopt a detached, unemotional attitude whilst watching the clip, to think of the technical aspects and think about it in a way that would make them feel nothing at all. Participants in the control condition were not instructed to do anything whilst watching the film except to 'watch it carefully'. The results showed that the individuals could experience positive effects from the reappraisal condition which included reductions in emotional reactivity in terms of self-report affect, facial displays and skin conductance in relation to positive, neutral and negative stimuli. The limitations of the study are that the manipulation was only for a short period of time, the sample size was small and therefore difficult to generalize, the study did not compare reappraisal to another type of emotion regulation strategy, and the sample may have been unrepresentative as they were higher functioning than a general patient population (Gruber et al., 2014).

The types of reappraisals central to this thesis are perspective-broadening reappraisals. This is in-line with the aforementioned findings that highlighted a decreased use of positive reappraisals and putting into perspective in BD (Green et al., 2011; Wolkenstein et al., 2014). The term perspective broadening is commonly used in clinical

language but has not been explored in empirical research until more recently (Schartau, Dalgleish, & Dunn, 2009). It refers to the process of broadening one's perspective on a situation, such as expanding a viewpoint in order to encompass other people's views on a situation. Research has shown that adopting a broader mind-set is associated with more positive emotional mood states (Garland et al., 2010). It has been put forward that therapies are likely to be more beneficial if an individual adopts a more general broader mind-set (Wood & Tarrier, 2010)

Reappraisals that are focused on perspective-broadening were first introduced by Schartau, Dalgleish, and Dunn (2009) in a series of studies that explored the idea of *training* people to use reappraisal. The training involved asking people to use perspective-broadening appraisal themes when shown negative film clips and recalling emotional memories. These perspective-broadening appraisal themes included 'every cloud has a silver lining', 'broader perspective', 'time heals' and 'bad things happen'. This type of reappraisals targets dichotomous thinking, the tendency to 'think in extremes' (Beck, 1964, p.100) and attach extreme meanings to experiences. Beck (1964) refers to dichotomous thinking in depression, but dichotomous thinking is also present in mania as extremely positive misinterpretations of triggers may lead to mood elevation (Holmes et al., 2008). The results from the studies by Schartau, Dalgleish, and Dunn showed that using perspective-broadening reappraisals in healthy, sub-clinically depressed and anxious groups leads to reductions in self-reported reactivity, galvanic skin response, and intrusions and avoidance of memories. The limitations of this study were that the instructions participants received asked them to both use one of the appraisals and alter their emotions, such that it is unclear what drove the results, in addition to this there was no baseline measurement of whether participants naturally used any of the appraisals themes (Schartau et al., 2009).

Perspective-broadening reappraisals were then used in Hill (2013) with individuals suffering from depression but in remission. In this study, the reappraisals included the following: 'Similar - think of similar events that were less distressing', 'Time - think about how you feel about this in the future', 'Areas - think about your life as a whole and focus on the positive areas', 'Good – think about aspects of this which aren't all bad', 'Else – think about what you would say to a close friend going through this'. The reappraisals formed part of the Self-Distancing and Perspective-Broadening (SD-PB) training package Hill (2013)

which involved firstly helping people to step back from situations ('*decentering* through mental imagery'), and, secondly, to use the *decentered* stance to reframe situations ('perspective-broadening through reappraising'). The results from this study showed that by administering the SD-PB training package to remitted individuals with Major Depressive Disorder (MDD) positive effects were observed in terms of reappraisals, such as reductions in distress when processing emotional information and an increased ability to positively reappraise. This study is central to the development of this thesis, and therefore it will be discussed in more detail later in the chapter.

1.2.4 Mental imagery in Bipolar Disorder

Within the last decade an interesting discovery has been made about BD that has important implications for treatment. Holmes et al. (2008) proposed that in BD imagery plays an important role in modulating mood swings by amplifying emotions. Research has shown that mental images have a stronger emotional impact in individuals with BD (compared to healthy controls) and that in some studies (although not consistently) individuals with BD can show a greater tendency to use mental imagery (Hales, Deeprose, Goodwin, & Holmes, 2011; Holmes et al., 2011; Ivins, Di Simplicio, Close, Goodwin, & Holmes, 2014). In BD, such imagery can include flash-forwards to suicide which the individuals report as compelling (Hales, Deeprose, Goodwin, & Holmes, 2011).

Mental imagery is a vehicle of change that is used to assist delivery of many types of therapies for many different mental health disorders, including CBT (see Hackmann, Bennett-Levy, & Holmes, 2011), MBCT (Williams et al., 2007), and neurolinguistic programming (Bandler & Grinder, 1979). In CBT, the imagery techniques include imaginal exposure in anxiety disorders (Foa, Steketee, Turner, & Fischer, 1980) and imagery re-scripting which aims to transform the content of traumatic images (Holmes, Arntz, & Smucker, 2007). The powerful effects of imagery have been demonstrated by Holmes, Mathews, Dalgleish and Mackintosh (2006) when they discovered that imagery-based processing is more effective in boosting the effects of positive interpretation training than verbal processing in healthy individuals.

Considering research has shown that imagery has a heightened emotional impact in BD (Hales, Deeprose, Goodwin, & Holmes, 2011; Holmes et al., 2011; Ivins, Di Simplicio, Close, Goodwin, & Holmes, 2014) and research into healthy individuals has shown how powerful imagery is in bringing about change (Holmes, Mathews, Dalgleish, & Mackintosh, 2006), one could infer that imagery would play an important role in treating an individual with BD.

A recent review by Pearson, Naselaris, Holmes, and Kosslyn (2015) discussed the future of mental imagery interventions in terms of both developing new interventions and adapting current ones for disorders that are yet to experience them. In addition to this, the article highlighted the proposal that all forms of cognition involve modality-specific mental simulations (Barsalou, 2010) and suggested that it implies that imagery plays a role in all cognitive events that an individual experiences. From this article one could deduce that a need has been recognized for developing mental imagery interventions for BD.

Preliminary evidence has now been published on imagery focused therapy for individuals with BD. Holmes et al. (2016) designed the Mood Action Psychology Programme (MAPP) which involved assessment, active treatment using imagery intervention strategies, and consolidation. Overall the MAPP involved 10-14 sessions of one-to-one treatment. The imagery intervention strategies included metacognitive (helping an individual to see images as just images), imagery rescripting (transforming an image into something more benign), positive imagery (creating mood enhancing or soothing images) and competing tasks (visuospatial tasks to dampen imagery). Fourteen individuals with BD completed daily and weekly mood measures for 28 days pre- and post- the MAPP. The results showed that imagery focused therapy reduced mood instability in 11 out of 14 individuals with BD. The limitations of this study are that it was a case series and therefore had a small sample size and no control group, asking participants to monitor their mood every day may in itself led to improvements in mood, and the sample comprised mainly of females and therefore not generalizable (Holmes et al., 2016).

1.3 Cognitive bias modification and Bipolar Disorder

1.3.1 Cognitive biases in Bipolar Disorder

A review of the literature on cognitive processing in emotional disorders by Mathews and MacLeod (2005) concluded that there are biases in cognitions such as in attention, memory and interpretation, that are shared across many emotional disorders including anxiety disorders and depression. The review also highlighted additional cognitive biases in emotional disorders such as biases in emotional associations, intrusive ideation, and inhibitory control. The review revealed that the nature of the biases varies across the disorders.

For example, attentional biases have been found across the anxiety disorders as individuals rapidly detect threatening stimuli (e.g., McNally & Foa, 1987; McNally, 1994; Mogg, Bradley, Millar, & White, 1995; Mogg, Mathews, & Eysenck, 1992; Pishyar, Harris, & Menzies, 2004; Tata et al., 1996), and also in unipolar depression as individuals show heightened attention to negative stimuli (e.g., Mathews, Ridgeway, & Williamson, 1996; Wenzlaff, Rude, Taylor, Stultz, & Sweatt, 2001). Furthermore, memory biases have been found in unipolar depression as, for example, individuals show a tendency towards recalling general negative memories (and a struggle to recall specific negative memories or specific details) (e.g., Moore, Watts, & Williams, 1988; Watkins, Martin, & Stern, 2000; Wenzlaff, Meier, & Salas, 2002; Williams et al., 2007). Lastly, interpretation biases have been found in unipolar depression as, for example, when individuals are presented with an ambiguous scrambled sentence to solve (which could be interpreted differently by focusing on the positive or negative words in the sentence); individuals with depression tend to find more negative solutions than non-depressed controls (e.g., Hindash & Amir, 2012; Mogg, Bradbury, & Bradley, 2006; Wenzlaff & Bates, 1998).

The research findings of attentional biases in BD suggest that during a dot-probe task individuals in a mildly depressed state direct their attention away from depression-related and positive words, compared to healthy controls, whilst individuals in a euthymic state direct their attention away from positive words, compared to healthy controls, (Jongen, Smulders, Ranson, Arts, & Krabbendam, 2007). These findings are consistent with a hypothesis put forward by Mansell et al. (2007) proposing that individuals with BD avoid

positive stimuli in their lives; this proposal requires more research attention. Research has also investigated attentional biases when euthymic BD individuals undergo a positive mood induction, and are then compared to healthy controls (Peckham, Johnson, & Gotlib, 2015). The results showed that for the individuals with BD, the less attention that was paid to positively valenced faces (measured using a face dot-probe-task) was correlated with the greater dampening of positive affect as measured by a self-report measure. Interestingly, the study also showed that attentional biases did not differ between individuals with BD in a positive mood state and individuals with no history of BD (Peckham, Johnson, & Gotlib, 2015). A major limitation of the study was that the results were based on between-participant analyses, such that reliable conclusions cannot be drawn on whether mood state influences attentional bias in BD within an individual. In terms of mania in BD, research has shown that in an affective shifting task requiring inhibition control individuals who were manic showed a bias towards positive stimuli (Murphy et al., 1999). On the whole, the research appears to suggest that mood state is important in the direction of attentional biases in BD.

The research findings of memory biases in BD have shown biases towards remembering more words with negative or depressive content (when presented with negative, positive and neutral words) in free recall tests across both manic and depressive patients (Lyon, Startup, & Bentall, 1999). A limitation of free recall tests of memory is that they do not reveal *how* the information is being remembered, for example whether it is chunked into groups. Other research has shown that when instructed to recall memories and their details, when compared to unipolar depression, individuals in remission from BD report more general than specific negative memories, and they also recall more frequent recollections of negative memories during their everyday life (Mansell & Lam, 2004). The limitation of the study is that, as above, the methodology involved recall. Although these studies are consistent in their findings, it is important to consider that many individuals with BD experience verbal declarative memory impairments (Malhi, Ivanovski, Szekeres, & Olley, 2004).

The research findings of interpretation biases in BD have shown a tendency of misinterpreting facial expressions of peers as angry in an adolescent population (McClure, Pope, Hoberman, Pine, & Leibenluft, 2003). However, these results are based on a sample

size of only 11 participants. In regards to the tendency to interpret ambiguous stimuli as positive or negative, research has shown that, when compared to a control group, individuals with BD show a bias in producing negative interpretations of ambiguous scenarios (e.g., interpreting the word sentence to mean a prison sentence rather than a grammatical structure) (Holmes et al., 2011). Mansell et al. (2007) proposed that giving internal states extreme personal meanings may be a key part of understanding mood swings in BD.

One could argue that cognitive biases in BD, such as attention and interpretation biases, play a role in the emotional hyper-reactivity that research has shown (Gruber, Kogan, et al., 2013), which includes maintaining negative emotions (Gruber, Purcell, et al., 2013) and amplified emotionality (Gruber, Kogan, et al., 2013).

1.3.2 Cognitive bias modification in Bipolar Disorder

Cognitive Bias Modification (CBM) is an intervention that has been developed from basic science principles as it was originally a paradigm which allowed researchers to measure the effects of cognitive biases (MacLeod et al., 1986). It is thought to specifically manipulate the types of maladaptive cognitive biases discussed in the section above (MacLeod & Mathews, 2012). Research has shown that when comparing CBM with CBT for social anxiety, CBM was more effective than CBT in weakening automatic threat-related associations (Sportel, de Hullu, de Jong, & Nauta, 2013).

Most commonly, the paradigm involves the use of the dot-probe task (MacLeod et al., 1986), which is where two stimuli (one emotional and one neutral) are presented on a computer screen (one on the left and one on the right). The two stimuli are then removed and a probe (one or two dots) appears in the place of one of the stimuli. The participant is instructed to respond by tapping a key as quickly as possible as to whether one or two dots were presented; faster responses to a certain dot suggest a bias of attention towards the stimuli that that dot replaced. CBM uses the dot probe paradigm to train attentional biases by varying the frequency with which the probe replaces the desired emotion stimulus (as decided by the research question and client group), across multiple trials. Two of the key CBM interventions in the literature are attention bias modification (ABM) and interpretative bias modification (CBM-I)(MacLeod & Mathews, 2012).

To date, there appears to be no published research on CBM with BD; one could hypothesize that this is to be expected as the research into cognitive biases in BD is limited to a handful of studies and the conclusions have not always been clear. This shows the complexity of the field. Despite the lack of research on CBM with BD, there is research on CBM in two closely related areas: unipolar depression and imagery.

Firstly, the literature is growing on the use of CBM with symptoms of unipolar depression. One example of this is by Wells and Beevers (2010) who used a modified version of the dot-probe-task to train participants with depression (with an attention bias towards negative information, as discussed above) to re-direct their attention away from dysphoric information. The outcome, based on four of these training sessions in a two-week period, was a reduction in their attentional biases towards negative information and a reduction in reported depressive symptoms; these effects even sustained to the two-week follow up. Interestingly, even CBM studies which did not achieve a significant change in cognitive biases have achieved reductions in depressive symptoms (Baert, De Raedt, Schacht, & Koster, 2010). A meta-analysis of 45 CBM studies on depression (focused on attention and interpretation training) showed a small effect size of CBM on depression, but again this relationship was not mediated by changes in cognitive biases (Hallion & Ruscio, 2011). This research brings to question how CBM works if changes in clinical symptoms can be achieved irrespective of changes in cognitive biases. In addition to this, a recent meta-analysis of CBM trials across depression and anxiety summarised that the effect sizes have been small and quite possibly lack any clinically relevant changes (Cristea, Kok, & Cuijpers, 2015).

Secondly, there is evidence for using CBM techniques to target imagery. Holmes, Arntz, and Smucker (2007) suggested that CBM-I may be useful in modifying underlying cognitive biases in imagery production (e.g., by interpreting potentially negative imagery as benign or positive). The initial study of CBM-I for imagery involved targeting interpretation biases in depression by promoting positive imagery in a single case series design (Blackwell & Holmes, 2010). The participants were presented with sentences on a computer which described a situation that they had to imagine themselves in, and then with the second half of the sentence which would have a positive resolution. They did this task every day for one week and the results showed that four out of seven participants experienced improvements

in mood and cognitive biases. A later larger study added in a control group into the design and the results showed that participants in the positive condition showed improvements in depressive symptoms, intrusive images and cognitive biases (Lang, Blackwell, Harmer, Davison, & Holmes, 2012). The limitations acknowledged in these studies were that the sample sizes were small which meant that mediation analyses were not able to be carried out. Therefore, as with the CBM research in unipolar depression, we do not know whether changes in cognitive biases (interpretation in this case) are responsible for the improvements in mood (e.g. Blackwell & Holmes, 2010).

Although CBM more commonly uses computer programs as the vehicle for change, essentially any vigorous training technique, targeting change in cognitive biases, could be classified as a form of CBM (e.g., phone applications, diaries, watches). Therefore, this thesis will adopt the CBM philosophy of repeated practice across multiple exemplars via the use of a daily diary. In addition to this, this thesis will add to the literature on interpretation biases in BD and imagery.

1.4 Mindfulness based cognitive therapy and Bipolar Disorder

1.4.1 Understanding mindfulness

Kabat-Zinn (1994) describes mindfulness meditation practices as a particular way of paying attention in the present moment, with a receptive and non-judgmental attitude. Mindfulness meditation is an ancient Buddhist practice that has been introduced into western culture, and therefore it can be difficult to reach a consensus on its definition. Bishop et al. (2004) focused on reaching an operational definition of mindfulness and described two main components of mindfulness: 1) full attention on the present moment and 2) a non-judgmental attitude. It has been thought of as shifting oneself from the 'doing mode', as described in Barnard and Teasdale's ICS model (1991), to the 'being' mode.

Recently, importance has been placed on understanding the mechanisms involved in mindfulness, although similarly with the definition, no consensus has been reached on this. Baer's (2003) earlier work hypothesised that the following five concepts are the key mechanisms involved in mindfulness: exposure, cognitive change, self-management, relaxation, and acceptance. Other suggested mechanisms include: intention and attitude

(Shapiro, Carlson, Astin, & Freedman, 2006), insight, non-attachment, enhanced mind-body functioning and integrated functioning (Brown, Ryan, & Creswell, 2007), attention regulation, emotion regulation and change in perspective on the self (Holzel et al., 2011). To the current day, researchers are still trying to reach a more comprehensive understanding of mindfulness and what it involves. This debate continues onto the next section as mindfulness is combined with CBT.

1.4.2 Mindfulness based cognitive therapy (MBCT)

Where CBT seeks to change cognitive processes (Beck, 1976), MBCT seeks to change the *relationship* to those processes (Teasdale, Segal, & Williams, 1995). This requires an individual to acquire the ability to '*decenter*' from their mental experiences which relates to the 'being mode' proposed in Teasdale and Barnard's model of emotion discussed above (Barnard & Teasdale, 1991).

MBCT is defined as a form of second-wave CBT that integrates components of mindfulness meditation (Mindfulness-based stress reduction program; Kabat-Zinn, 1990) and Beck's (1967) cognitive therapy and is based on a manual by Segal, Williams and Teasdale (2002). The aim is for people to be able to *relate* differently to their thoughts and emotions through meditation practice (this could be formal practice involving body scanning and sitting meditation or informal practice such as being mindful of everyday activities) and cognitive therapy techniques. The manual suggests that MBCT is delivered in a weekly group setting over an 8-10 week period together with daily meditation practice (up to one hour). MBCT was originally designed to prevent relapse in remitted individuals with a history of depression (Segal et al., 2002). In support, research trials with remitted individuals have showed that, compared to treatment as usual, participants who had received MBCT had significantly lower relapse rates (Ma & Teasdale, 2004; Piet & Hougaard, 2011). In addition to this, it has been found to reduce symptoms of depression and anxiety (Brown et al., 2007).

In more recent years, MBCT has been trialed with many different psychological disorders, one of which is BD. The first trial of MBCT with BD was conducted with individuals in a euthymic state and concentrated on residual symptoms of depression and anxiety. This eight week programme followed the protocol of Segal et al. (2002). The

results showed that individuals in the MBCT condition (as opposed to the wait-list condition) gained improvements in depression and anxiety scores (Williams et al., 2008). The limitations of this study were that the sample size in each group was nine or less and since there was no measure of mania, the results lack generalisability. Since then, research has shown that MBCT with BD has led to improvements in cognitive functioning (executive functioning, memory and the ability to initiate and complete tasks), mindful, non-judgemental observance and awareness of thoughts, feelings and sensations (Stange et al., 2011), mindfulness ability and executive functioning (working memory, spatial memory and verbal fluency) (Ives-Deliperi et al., 2013), residual depressive symptoms, psychological well-being, positive affect and psychosocial functioning (Deckersbach et al., 2011).

However, it is important to retain caution when trailing MBCT with new psychological disorders as the manual is still relatively new and, as previously discussed, there is uncertainty around what mechanisms underlie the approach. Interestingly, one study from the depression literature showed that mindfulness did not improve with MBCT (Manicavasagar, Perich, & Parker, 2012), though Kuyken et al. (2010) found it to be a mediating factor in treatment effects. There is very limited evidence at present as to the mechanisms of MBCT that drive the improvements discussed above in individuals with BD. One hypothesis is that it is the changes in emotion regulation that brings about changes in emotional wellbeing and executive functioning in BD (Ives-Deliperi et al., 2013). Another hypothesis could be that it is changes in cognitive functioning that are key to changes in BD symptoms as Stange et al. (2011) found an association between improvements in cognitive functioning and decreases in manic symptoms. It is early days in this field and both hypotheses require further investigation.

Research into understanding the mechanisms of MBCT in relation to depression has received plentiful interest in recent years, therefore it may be useful to guide the way for understanding the mechanisms of MBCT in relation to BD. For example, Eisendrath, Chartier, and McLane (2011) proposed that the mechanisms of MBCT (mediators between MBCT and depression scores) include mindfulness as well as decreased rumination, enhanced self-compassion and increasing acceptance. Overall the literature has propounded five mechanisms of change thought to play a role in the effectiveness of MBCT in relation to depression. The first mechanism is rumination. MBCT has been shown to

reduce scores of rumination (Manicavasagar et al., 2012) and mediation analyses have shown that post-MBCT rumination scores are a predictor of post-treatment depression scores (Eisendrath et al., 2008). The second mechanism is changes in cognitive biases. Research has shown that MBCT leads to improvements in the ability to self-regulate attention (Bishop et al., 2004) and evidence suggests the link between mindfulness and emotional distress may be partially mediated by a change in negatively biased cognitions (Gilbert & Christopher, 2010). The third mechanism is changes in the relationship to emotional stimuli. Studies have shown that MBCT can lead to lower levels of cognitive reactivity (Teasdale et al., 2002), an attitude of complete openness and non-judgment (Kabat-Zinn et al., 1992), a reduction in experiential avoidance (Baer, 2003), and higher acceptance (Brown & Ryan, 2004). However, whether these changes mediate the relationship between MBCT and depression is yet to be determined. The fourth mechanism is changes in self-compassion. Self-compassion is encouraged in MBCT and research has shown that it is a mediator of preventing relapse at a 15-month follow-up (Kuyken et al., 2010). The fifth mechanism is changes in the ability to *decenter*, which will be discussed in the next section as this concept is of specific interest in this thesis.

In summary, there is emerging evidence of the effectiveness of MBCT in BD (e.g., Williams et al., 2008). However, it is still a relatively unexplored therapy, and it should be noted that although there are hypothesised mechanisms of change, the question remains whether the factors highlighted above are indeed mechanisms of change or consequences of reduced depression. In addition to this, although some factors have been shown to mediate the relationship between MBCT and depression, there is a chance that the factor is merely a marker of change in another mechanism. Murphy, Cooper, Hollon, and Fairburn (2009) suggested that future research should focus on dismantling MBCT and researching each mechanism in isolation. The idea of dismantling is central to this thesis.

1.4.3 The concept of *decentering* and *decentering* techniques

Decentering is defined as 'the capacity to take a present-focused, non-judgmental stance in regard to thoughts and feelings and to accept them' (Fresco, Segal, Buis, & Kennedy, 2007, p.448). In others words, *decentering* is the process of creating psychological distance between one's self and one's emotions, such that the individual can engage in

thought without being overwhelmed by emotions. Eisendrath et al. (2011) has provided a helpful explanation as to what *decentering* might look like in MBCT. The paper explained that, for example, when an individual has a thought of 'I am a bad and defective person', an MCBT therapist encourages the individual to recognise that they are having a thought, and that the thought is only a thought, it may not be fact and it can be let go of. This is very similar to a related concept of meta-awareness; Moore (1996) explains that meta-awareness is the experience of having thoughts *within* a *decentered* perspective and therefore seeing them as thoughts rather than reality. '*Decentering*' is used interchangeably in the literature with 'self-distancing' or 'stepping back' (e.g., Kross, Ayduk, & Mischel, 2005). For the purpose of this thesis this process will be referred to as *decentering* throughout.

Decentering has been proposed to drive the efficacy of MBCT (Bieling et al., 2012). It has been proposed that this might happen because of the association *decentering* has with an increase in emotion regulation in mindfulness (Fresco et al., 2007) and through reducing levels of rumination (Teasdale et al., 2002). However, Ingram and Hollon (1986) highlighted that *decentering* plays a role in cognitive therapy too, specifically how individuals learn to switch to a controlled metacognitive mode of processing. Ingram and Hollon (1986) go on to hypothesize that the effectiveness of cognitive therapy may depend on individuals being able to *decenter* when faced with stress. Interestingly, years later Fresco et al. (2007) found a correlation between *decentering* and relapse rates at 18-month follow up, and concluded that it was high post-treatment *decentering* scores that protected depressed individuals against relapse. These ideas originate back to Beck (1970) as he suggested that it is *decentering* that allows an individual to implement cognitive techniques, this is because an individual needs to distance themselves from their emotions in order to successfully engage in challenging their thoughts.

Decentering has been studied in the lab by Kross and colleagues by asking participants to adopt a self-distanced/observer perspective, a concept developed by Nigro and Neisser (1983). Nigro and Neisser distinguished between two types of perspectives in memory: an observer perspective (viewpoint of another) and a field perspective (viewpoint of self). The research has shown that shifting from a field to an observer perspective leads to reductions in affect (Robinson & Swanson, 1993), although some studies have shown it

can be detrimental to adaptive coping depending on what you then do once you are in an observer perspective (Kenny et al., 2009). Kross et al. (2005) introduced a paradigm to induce a 'self-distanced' (or *decentered*) state which involved asking participants to imagine an experience from the vantage of a fly on the wall; this would then be compared to a 'self-immersed' state which involved asking participants to imagine an experience through their own minds eye. Most of the research into *decentering* has used this paradigm. More recently it has also be discovered that expressive writing can promote self-distancing (Park, Ayduk, & Kross, 2015).

A series of studies by Kross and colleagues using this paradigm has led to healthy individuals in the 'self-distanced' state experiencing the following: less recounting of emotions, reconstruing feelings in ways that promote closure and insight, reductions in negative affect, a buffer against recurrent negative thoughts and negative affect, reductions in blood pressure, enhanced wise reasoning when thinking about personal meaningful experiences, and reduction in aggression (Ayduk & Kross, 2008; Kross, Ayduk, & Mischel, 2005; Kross & Grossmann, 2012; Mischkowski, Kross, & Bushman, 2012). Research has also found that if healthy controls spontaneously self-distance while reflecting on negative memories then they experience more of these benefits (Ayduk & Kross, 2010). An interesting finding from healthy control studies related to BD is that adapting a 'self-distanced' perspective lead to shorter living emotions in regards to both daily negative and positive events compared to a self-immersed perspective (Verduyn, Van Mechelen, Kross, Chezzi, & Van Bever, 2012)

Research has shown that in depression individuals most naturally adopt a self-immersed perspective (seeing things through their own eyes) (Ayduk & Kross, 2008). Therefore, one might predict that changing this could produce positive effects. Kross and Ayduk (2009) explored the depression score data from the aforementioned Kross and colleagues studies on heathy populations, and the results shows that the effectiveness of self-distancing for reducing emotional reactivity was correlated positively with depression scores. When Kross's *decentering* paradigm was then studied in individuals with depression, the research showed participants benefitted from reductions in negative affect (Kross, Gard, Deldin, Clifton, & Ayduk, 2012) and reductions in emotional reactivity (Wisco & Nolen-Hoeksema, 2011). However, the literature is limited at this time as studies have not

investigated the effects of self-distancing without further instruction or whether it can ever be achieved without prompting. Verduyn, Van Mechelen, Kross, Chezzi, and Van Bever (2012) suggested that the effectiveness of *decentering* depends on the context and the individual's current affect.

The literature on *decentering* in BD is limited. There is however evidence that suggests that *decentering* may be problematic in BD. Firstly, there is evidence from unipolar depression to suggest that depressed individuals naturally adopt a self-immersed (non-*decentered*) stance (Ayduk & Kross, 2008). Secondly, there is evidence that individuals with BD show heightened self-report positive emotional reactivity (see review by Johnson, 2005) and greater psychophysiological reactivity (Sutton & Johnson, 2002), which one might hypothesise is due to difficulties in *decentering* from their positive emotions. From a clinical perspective, there are presentations in BD which one may interpret as indicators of difficulties in *decentering*. During mania, for example, engaging in risky out-of-character behaviour (for example, spending sprees or sexual indiscretions) or during depression as catastrophising and dichotomous thinking. *Decentering* may, hypothetically, play a role in maintaining both mania and depressive symptoms within BD.

One study has been conducted which has looked at the effects of *decentering* in BD. Gruber, Harvey and Johnson (2009) asked individuals with BD and healthy controls to recall a happy autobiographical memory and process the memory from a 'reflective' stance (Kross' 'self-distanced' stance plus "watch it play out to the distant you") and 'ruminative' stance (Kross' 'self-immersed' stance plus "try to understand the emotion you experienced, why did you have those feelings"). The results showed that adopting a *decentered* perspective in BD was associated with reductions in self-reported positive emotion experience (affect and thoughts) and heart-rate. In addition to this, they discovered that *decentering* led to less intense positive emotion; although this may be beneficial for mania in BD, it does highlight that it is important to supervise the use of *decentering* carefully. The limitations of this study are that the manipulations using the paradigm only lasted seconds, the stimuli were past events rather than a present experience, the strategies the participants engaged in during the task are unknown, the particular emotions experienced are unknown, the sample size was small, co-morbidities may have played a role, the BD group could be interpreted as functioning at a higher level than is generalizable and

medications may have played a role (Gruber, Harvey, & Johnson, 2009). This thesis will be building on the results from Gruber, Harvey and Johnson (2009) and expanding the very small field of *decentering* and BD.

1.5 The Self-Distancing and Perspective-Broadening (SD-PB) package and an introduction to the study

This introduction chapter has presented theories and research that suggests that there are mechanisms within both CBT (as described by Beck, 1976) and MBCT (e.g., Eisendrath, Chartier, & McLane, 2011) which may play a role in the effectiveness of CBT (e.g., Lam et al., 2003) and MBCT (e.g., Segal et al., 2002) for individuals with BD. As demonstrated in the chapter, the literature has not reached a consensus on what the final set of mechanisms are in CBT and MBCT or which mechanisms are the most important, especially in relation to BD. A new approach to the treatment of BD may be to design treatments that target specific cognitive biases or maladaptive processes in BD (as described earlier in the chapter) or to design treatments that utilize specific mechanisms which have been hypothesized to play a role in the effectiveness of CBT and/or MBCT.

The study presented in this thesis will be distilling and providing simplified training on two mechanisms hypothesised to play a role in the effectiveness of treatment for BD. The first mechanism is the reappraisal component from CBT. Models and research have suggested that individuals with BD may experience difficulties in adaptively appraising emotional events (Lam, 1999; McPherson, Romans, & Herbison, 1993; Myin-Germeys, Krabbendam, Delespaul, & van Os, 2003), and one study has shown that by trying to change appraisals by instructing individuals with BD to reappraise leads to reductions in emotional reactivity (Gruber et al., 2014). The second mechanism is the *decentering* component from MBCT. There is evidence from research that individuals with BD may experience difficulties in *decentering* (Ayduk & Kross, 2008; Johnson, 2005), and one study has shown that by adopting a *decentered* perspective in BD was associated with reductions in self-reported positive emotion experience (affect and thoughts) (Gruber, Harvey, & Johnson, 2009a). The underlying rationale of this thesis is that the mechanisms of *decentering* and reappraisal could be utilised to help individuals with BD manage the disorder.

These two mechanisms, *decentering* and reappraisal, are by no means separate entities. While traditional Beckian CBT (Beck, Rush, Shaw, & Emery, 1979b) seeks to change cognitive representations, processes and products through reappraisals, MBCT instead seeks to change one's *relationship* to these things through *decentering* (Segal et al., 2002). The two mechanisms combined together in the correct order are theorised to benefit the therapeutic process. In support, Ingram and Hollon (1986, p.272) suggested that the "long term effectiveness of cognitive therapy may lie in teaching patients to initiate this process (*decentering*) in the face of future stress", and Beck (1970) described *decentering* as an important process which enables patients to implement cognitive techniques.

This combination was studied by Hill (2013) by training individuals remitted from MDD in the ability to *decenter* and to broaden their perspective through reappraisals. The Self-Distancing and Perspective-Broadening (SD-PB) training (Hill, 2013) involved firstly helping people to step back from situations ('*decentering* through mental imagery'), and, secondly, to use this *decentered* stance to reframe situations ('perspective-broadening through reappraising'). Comprising two one-to-one sessions and daily homework for two-weeks between sessions, the SD-PB package trains these SD-PB techniques using memories and every day events. The results showed that the training produced significant reductions in distress when processing emotional information, improvements in the ability to *decenter* and broaden perspective, improvements in mood when using the techniques at home, reductions in residual symptoms of depression, and increased ability to positively reappraise and reconstrue situations.

Thus, the aim of this pilot study is to replicate the SD-PB training package with a new clinical group, namely BD, in order to explore the effectiveness of this training programme in this population. The literature in this introduction suggests that the training package would be an appropriate intervention to test with individuals with BD as it aims to target cognitive difficulties experienced in BD (e.g. Ayduk & Kross, 2008), it uses imagery which plays an important role in BD (e.g. Ivins, Di Simplicio, Close, Goodwin, & Holmes, 2014), it has been found to be effective in terms of symptomatology and cognitive change in individuals with MDD (Hill, 2013), the package was well accepted and did not cause negative effects with MDD (Hill, 2013), and it would not disrupt the participant's usual care.

As this is the first time the SD-PB training has been applied to BD, individuals will need to be in a euthymic state as they are less symptomatic although still experience depressive and manic symptoms (see paragraph on euthymic state above), and so may find the techniques easier to engage with and can practice them on milder symptoms (Perlis et al., 2006). As demonstrated by Teasdale et al. (2002), some treatments, like MBCT, are most effective when an individual is in remission and skills are transferable.

The study will adopt a single case series design, which is recommended for early-stage clinical interventions (Kazdin, 2011). This design allows an in-depth study of each participant's experience of the intervention, however one of the limitations of such a design is that the results cannot be generalized to a wider population (Dugard, File & Todman, 2012). However, it is the appropriate design for this study according to Robey's (2004) model of the clinical research process which suggests that the first phase in this type of research is identifying a therapeutic effect though single case series or small group designs.

Some small changes were made to the SD-PB package to make it feasible for the new clinical population, and to make the study a feasible size. The training was reduced to two one-to-one sessions and one week of tasks at home (instead of two weeks of tasks at home), some of the instructions were altered in order to make them more applicable to mania as well as depression, and some of the questionnaires and bespoke measures were removed due to time constraints.

In summary, the rationale for using the SD-PB training protocol in BD is that (as discussed above) difficulties in reappraising and *decentering* play a role in BD (Lam, 1999; McPherson, Romans, & Herbison, 1993; Myin-Germeys, Krabbendam, Delespaul, & van Os, 2003; Ayduk & Kross, 2008; Johnson, 2005). Furthermore, its imagery-based components are compatible with the important role that imagery plays in BD (Hales, Deeprose, Goodwin, & Holmes, 2011; Holmes et al., 2011; Ivins, Di Simplicio, Close, Goodwin, & Holmes, 2014).

Interestingly, the NICE guidelines state that therapy for BD should involve monitoring mood, teaching strategies to prevent progression into episodes, and enhancing coping strategies (NICE, 2014). The SD-PB training encompasses aspects of this within the package and the end product, potentially, is an adaptable coping technique that individuals can utilise in their daily lives.

1.5.1 Study research questions

Question one (primary question): Does the SD-PB training reduce depressive or manic mood symptomatology in individuals diagnosed with BD? This will be measured using daily measures of depressive (Rush et al., 2003) and mania symptoms (Altman, Hedeker, Peterson, & Davis, 1997).
Hypothesis one: There will be a change in depressive or manic mood symptomatology between the baseline phase and the training phase.

Question two: Does the SD-PB training reduce symptomatology related to BD in individuals diagnosed with BD? This will be measured using questionnaires of anxiety (Beck & Steer, 1990) and affective lability (Oliver & Simons, 2004).
Hypothesis two: There will be a change in measures of anxiety and affective lability between pre-training and post-training and/or follow-up.

Question three: Does the SD-PB training change the ability to *decenter* in individuals diagnosed with BD? This will be measured using a *decentering* subscale of a questionnaire (Fresco et al., 2007).
Hypothesis three: There will be a change in the ability to decenter between pre-training and post-training and/or follow-up.

Question four: Does the SD-PB training change the ability to perspective-take in individuals diagnosed with BD? This will be measured using a perspective-taking subscale of a questionnaire (Garnefski, Kraaij, & Spinhoven, 2001)
Hypothesis four: There will be a change in the ability to perspective-take between pre-training and post-training and/or follow-up.

Chapter 2: Methodology

2.1 Overview

In this chapter the following areas will be detailed: the design of the study, the participants who took part, the measures used, the procedure of the study, and the ethical considerations of this study.

2.2 Design

This study employed a small-n design in order to pilot a self-distancing and perspective-broadening training package for a small number of individuals diagnosed with Bipolar Disorder. Small-n designs and Single-case series have been recommended for early-stage clinical interventions (Kazdin, 2011), therefore the study followed single-case series standards (Kratochwill et al., 2010). The strengths of a single-case series design are that it allows an in-depth exploratory study of change over time to take place and a fine grained focus on the effectiveness of an intervention (Dugard, File & Todman, 2012). The limitations are that with few participants it is difficult to identify moderators of change, it is questionable how generalizable the results are, and the process of visual inspection can be subject to an individual's judgment (Dugard, File & Todman, 2012).

An "A-B" phase methodology was adopted (see figure 2.1) allowing for observation of behaviour before (A) and during (B) the training (Dugard, File, & Todman, 2012). This methodology allows for once-only interventions like training to be observed over several time points which provides a better chance of seeing an effect in spite of variability (Dugard, File & Todman, 2012).

In this design, the participant's "A" block acted as a control with which to compare their training block (B). In order to reliably measure "A" in this client group, participants were asked to complete daily mood symptomatology measures for two weeks, allowing enough time for a representative baseline of mood to be achieved. Both blocks "A" and "B" involved these daily self-report measures of mood symptomatology (mania and depression). In addition, Block "B" involved the SD-PB training comprising of two sessions one week apart and a homework diary within that week.

Session 1: Pre-baseline assessment	**"A" block:** 2-week baseline of daily mood symptomatology measures.	*Session 2:* Pre-intervention assessment	**"B" block:** *Session 2:* Training *Homework for 1 week:* Training at home *Session 3:* Training	*Session 3:* Post-intervention assessment	*Online:* Follow-up assessment 2 weeks later.

Figure 2.1: "A-B" design

An important component to the design of this study was the use of a Cognitive Bias Modification (CBM) approach to the training package. The training package incorporated a number of elements of the CBM philosophy in its use of repeated practice of techniques (the SD-PB techniques) across multiple exemplars (e.g., scenarios, memories, diary events).

The main dependent variables were the daily self-report measures of mood symptomatology including depression (the Quick Inventory of Depressive Symptomatology Self-Report; Rush et al., 2003) and mania (the Altman Self Rating Mania Scale; Altman et al., 1997).

Secondary dependent variables included 1) additional relevant symptomatology measures for individuals with Bipolar Disorder (anxiety and affective lability) and 2) measures of the key mechanisms involved in the training package (*decentering* and perspective-taking). These were not filled out daily, but instead were filled out at four time points during the study (Pre-baseline assessment at session 1, Pre-intervention assessment at session 2, Post-intervention assessment at session 3, and an online follow-up two weeks later).

2.3 Participants

2.3.1 Recruitment procedure

Participants with a diagnosis of BD (verified using the Structured Clinical Interview for the *DSM-IV* Axis I Disorders Clinician Version 2.0-revised; SCID; First, Spitzer, Gibbon, & Williams, 2002) (see appendix A) were recruited through the Medical Research Council Cognition and Brain Sciences Unit (MRC-CBSU). A field investigator at the MRC-CBSU searched for participants in an established database at the MRC-CBSU of individuals with BD who had consented to be contacted about future studies (many of whom had previously participated in research). The field investigator would then grant access to the chief investigator of the study to contact the identified participants via the secure MRC-CBSU email system.

The email to the potential participants included the information sheet (see appendix B) and an invitation to partake in the research should they wish to. The study was referred to in all correspondence with the participants as the 'Stage study' for ease and so that the technique was easier for participants to remember if they were to enter the study. The email invited participants to speak over the phone if they had questions or wished for more information. Recruiting through the MRC-CBSU meant that participants were paid for their time (£6 an hour) and a contribution made towards their travel (£3), as stated in the email and information sheet (see appendix B). The information sheet clearly stated that should they wish to partake in the study then they would be required to consent to the researcher sending a standardized letter (see appendix C) to their GP and care coordinator (if applicable) to inform them that they were taking part in the study. This allowed those involved in the participant's care to provide additional informed support if a participant became distressed during the study.

If an individual was happy to take part, then they opted in to the study via email (or over the phone) and the pre-baseline assessment session would be booked in with the chief investigator of the study who would be conducting the study testing sessions. It was at the pre-baseline assessment session that the full consent process would take place. If an individual did not want to take part, then they would be thanked for their time and it would

be noted not to contact them again in regards to this study.

2.3.2 Criteria

The inclusion criteria was individuals aged 18-65 years with a diagnosis of BD who were in a euthymic state, and had been so for at least two weeks (verified using the SCID; First, Spitzer, Gibbon, & Williams, 2002) (see appendix A). Euthymia was also verified at the beginning of every session using this method.

The exclusion criteria included current substance dependence or abuse, current CBT treatment, individuals who were not fluent in English, organic brain injury, active psychotic and manic symptoms requiring hospitalisation and active suicidal risk weeks (assessed as part of the SCID; First, Spitzer, Gibbon, & Williams, 2002) (see appendix A).

2.3.3 Sample size

The study had aimed to recruit nine participants into the study in hopes of increasing sample size from the single case series paper that had been published in the field on CBM-I (Blackwell & Holmes, 2010). After a delayed ethical approval process, the researcher firstly contacted all of the participants in the database at the MRC-CBSU that met criteria for BD, and received some participants into the study through this avenue. However, once everyone on the database had been contacted, the researcher had to wait for more participants to come onto the database through other studies that were running in the team. Due to time constraints, as the study formed part of a doctoral qualification, the researcher put an ammendment in to the ethics committee to be able to recruit from the general public, but the approval did not come through in time to help with recruitment. Therefore the final number included in the study was six (see the section on sample size below for more information).

As a consequence of recruitment difficulties, six participants were recruited into the study. A representation of the flow of participants into the study is represented in figure 2.1 and a recruitment timeline is in Appendix D. Despite difficulties in recruitment, the sample size is sufficient for a single case series study according to Kazdin (2011).

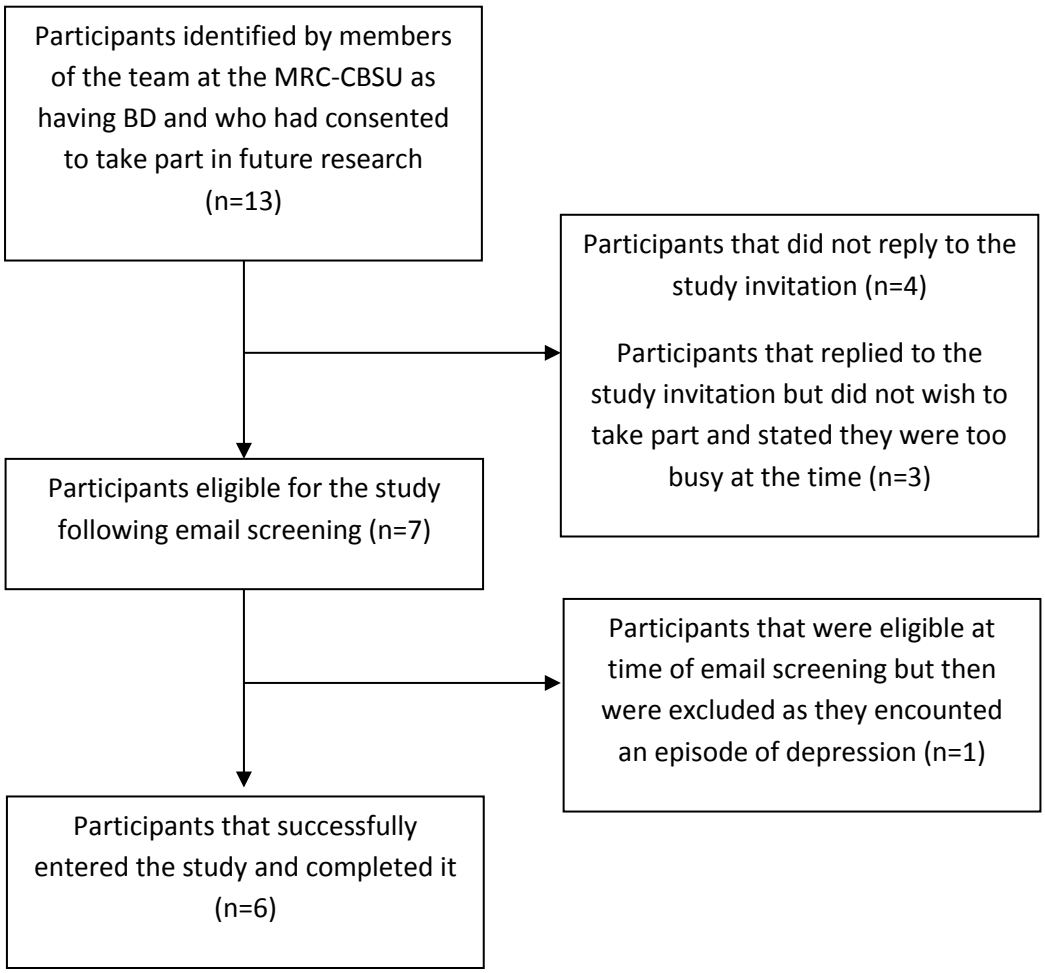


Figure 2.1: The flow of participants through the study

2.4 Materials and measures

Materials and measures were categorized as follows: daily mood symptomatology measures, baseline measures, idiographic processing measures, demographics and a within-training idiographic SD-PB measure.

2.4.1 Daily mood symptomatology measures

The following measures will be described below along with details of their internal consistency, construct validity, and test re-test reliability (if any of these details are not stated then they are not available for that measure).

Depression

Severity of depressive symptoms was measured using a modified version of the Quick Inventory of Depressive Symptomatology Self-Report (QIDSSR; Rush et al., 2003) (see appendix E). The QIDSSR is a 16 item (scored from 0 to 3) multiple choice questionnaire which measures depressive symptoms over the past seven days, which has been modified to 'today' (as used in; Holmes et al., 2016). The QIDSSR has good internal consistency (Cronbach's alpha >.81) (Trivedi et al., 2004), good construct validity (Trivedi et al., 2004), and good test re-test reliability (Ma, Hou, Zang, Jia, Lin, Li, et al.; 2015). The QIDSSR had been modified to daily administration, which has enabled studies to achieve change in these scores during euthymia over small timeframes (Bonsall, Wallace-Hadrill, Geddes, Goodwin, & Holmes, 2012; Malik, Goodwin, & Holmes, 2012; Di Simplicio, Blackwell & Holmes, in progress).

Mania

Severity of manic symptoms was measured using the Altman Self Rating Mania Scale (ASRM; Altman et al., 1997) (see appendix F). The ASRM is a five item multiple choice questionnaire which measures symptoms of mania over the past seven days, although for this study it has been modified to the 'today'. Each item is given a score from 0 (*absent*) to 4 (*severe*). The ASRM has adequate internal consistency (Cronbach's alpha >.70) (Johnson, McKenzie &McMurrich, 2008), adequate concurrent validity when compared to other measures of mania (Altman, Hedeker, Peterson, & Davis, 2001), and it has good test re-test reliability (Altman, 1998). The ASRM had also been adapted to daily administration (although this was the first time this had been trialed for daily administration) due to the same reasons stated above for the QIDSSR.

2.4.2 Baseline measures

Anxiety

Severity of anxiety symptoms was measured using the Beck Anxiety Inventory (BAI; Beck & Steer, 1990) (see appendix G). The BAI is a 21 item questionnaire which measures anxiety symptoms over the past week. This measure was chosen as research has found that over half of individuals with BD suffer from anxiety (Simon et al., 2004). Each item is given a

score of 0 (*not at all)* to 4 (*severely – I could barely stand it*). The cut off scores for the BAI are as follows: 0-7 = minimal level of anxiety, 8-15 = mild anxiety, 16-25 = moderate anxiety, 26-63 = severe anxiety. The BAI has high internal consistency (Cronbach's alpha >.92) (Steer, Ranieri, Beck, & Clark, 1993), high test re-test reliability (Buhr & Dugas, 2002), and is considered a reliable and valid measure (Fydrich, Dowdall, & Chambless, 1992).

Affective lability

Affective lability (the frequency, range, speed of change in affective states) was measured using the Affective Lability Scale-short form (ALS-SF; Oliver & Simons, 2004) (see appendix H). This measure was chosen as research has found that individuals with BD have higher levels of affective lability than healthy controls even when euthymic (Henry et al., 2008). The ALS-SF is an 18 item questionnaire with three subscales: Anxiety/depression, Depression/Elation and Anger. The items are rated on a four point Likert scale from A (*very characteristic of me*) to D (*very uncharacteristic of me).* The ALS-SF has good internal consistency (scales ranging from Cronbach's alpha 0.64 to 0.79) (Oliver & Simons, 2004), strong construct validity (Look, Flory, Harvey, & Siever, 2010; Oliver & Simons, 2004) and has a good test-retest reliability (Aas et al., 2015).

Ability to *decenter*

The ability to *decenter* was measured using the '*decentering*' subscale of the Experiences Questionnaire (EQ; Fresco et al., 2007) (see appendix I). The full EQ, a 20 item self-report measure with two subscales '*decentering*' (14) and 'rumination' (6), was administered. The items are rated on a five point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The EQ has good internal consistency (Cronbach's alpha = .81) and construct validity (Fresco et al., 2007). The *decentering* subscale was used in the *decentering* literature described in the introduction but there is limited information about the psychometric properties of the subscale alone.

Ability to perspective-take

The ability to perspective-take was measured using the 'putting into perspective' subscale of the Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, &

Spinhoven, 2001) (see appendix J). The full 36 item self-report CERQ was administered which measures nine (4 items each) cognitive coping strategies for regulating affect: 'self-blame', 'other-blame', 'rumination', 'catastrophising', 'putting into perspective', 'positive refocusing', 'positive reappraisal', 'acceptance' and 'refocus on planning'. The items are rated on a five-point Likert scale from 1 (*almost never*) to 5 (*almost always*). The CERQ has acceptable to good internal consistency (Cronbach's alphas ranging from .68 to .83), and test-retest reliabilities of .40 to .60 indicating the thinking styles were moderately stable (Garnefski, Kraaij, & Spinhoven, 2001).

2.4.3 Idiographic processing measures

Two idiographic emotional processing measures (also used in Hill, 2013) were used to assess baseline processing of emotional material.

Firstly, participants were asked to rate five recent emotional memories on: a) their level of distress at the time the event took place, and b) their current level of distress when they think about it now (on a visual analogue scale with 'Not distressing at all' at one end to 'Extremely distressing' at the other end). Similar idiographic measures have been commonly used in previous *decentering* research (Kross, Gard, Deldin, Clifton, & Ayduk, 2012).

Secondly, participants were asked to read four scenarios of everyday ambiguous events (for the full set of scenarios see appendix K), and attempted to generate a similar memory; if unable to do this they will were told to work with the scenario itself (inspired by Moore, Hayhurst, & Teasdale, 1996). The scenarios were chosen to portray events that people susceptible to depression and mania are likely to be particularly sensitive to, resulting in the activation of depressogenic themes such as failure or manic themes such as heightened confidence and energy. For each scenario, participants rated the extent and ease with which they thought about the negative and positive aspects of the situation (each on a 7-point Likert scale from 1 = '*Not at all*' to 7 = '*Extremely so'*). It should be noted that the order in which the participants received each of the scenarios (throughout the study) was randomized in that there were two versions of order of scenarios, and the version used was alternated.

2.4.4 Demographics

Individuals were asked their age, gender, ethnicity, current medication details (type and dosage) and their history of psychological therapy (type and duration).

2.4.5 Within-training idiographic SD-PB measure

During training, individuals were asked to rate the efficacy of the SD-PB technique; how easy and able they found it to apply the two steps of the training (SD and PB steps); to what extent each of the five STAGE strategies were helpful; to what extent they found the imagery that goes with the five STAGE strategies helpful (each on a 7-point Likert scale from 1 = '*Not at all*' to 7 = '*Extremely so'*) and how much they used the imagery associated with the five STAGE strategies (on a 10-point Likert scale from 1 = 'Not at all' to 10 = 'Every time). Participants then rated whether they noticed a change in their distress after applying the SD-PB techniques (on a 20-point visual analogue scale from -10 = '*decreased distress*', to 0= '*no change'*, to +10 = '*increased distress*').

2.5 Procedure

After ethical approval was obtained, the recruitment procedure began as described in the recruitment section above. Dates were scheduled at the beginning of the study for each of the three testing sessions at the MRC-CBSU and participants were reminded that two weeks after the last testing sessions they would be contacted via email to complete an online questionnaire. At the end of each testing session participants were paid for their time spent in the testing session, their travel that day and any time spent doing study tasks at home between then and the next session.

A diagram of the procedure is presented in figure 2.3. This shows that from the pre-baseline assessment session participants were in the study for a total of five weeks (only three weeks actively involved in daily measures or homework).

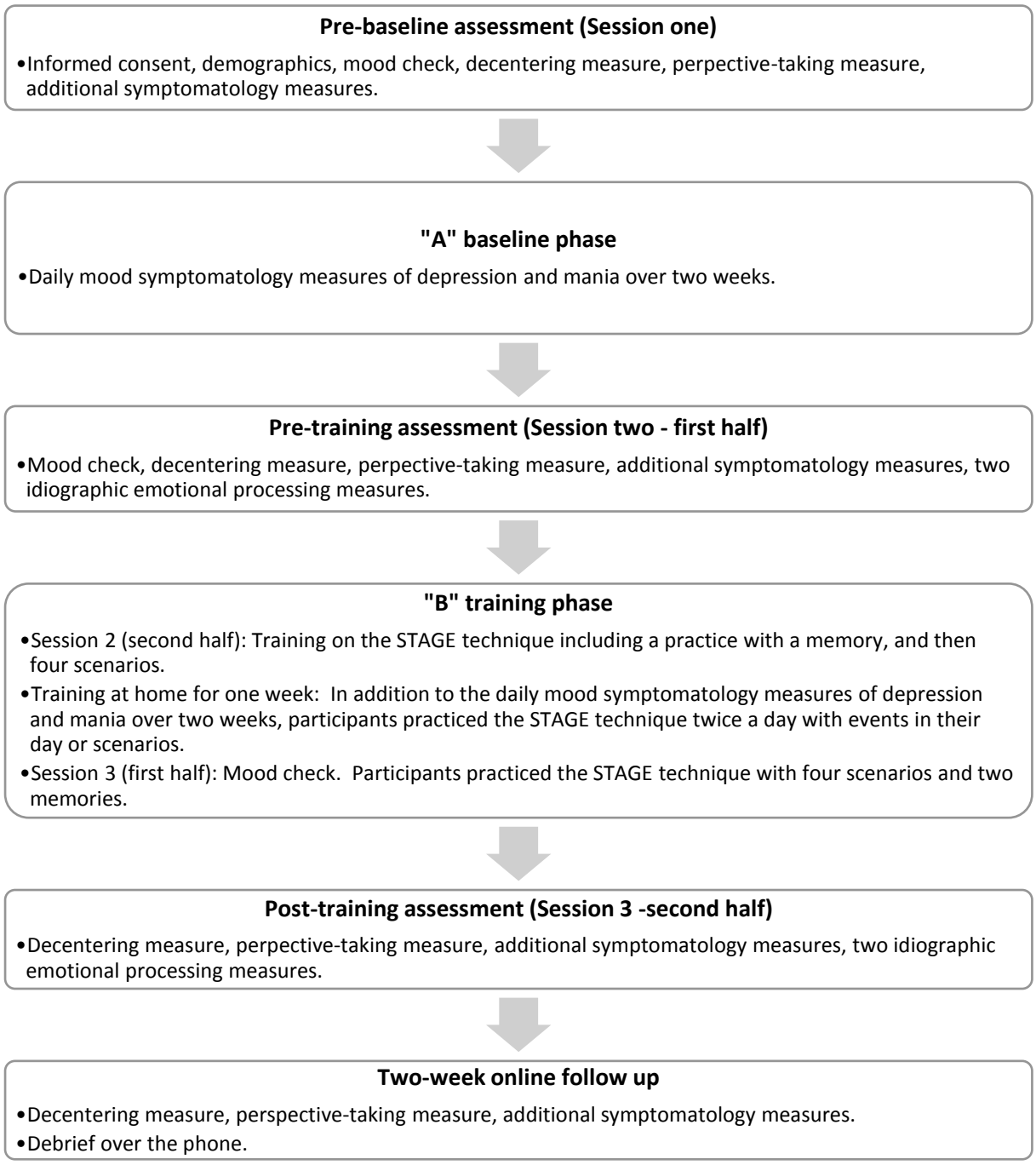


Figure 2.3: The procedure for the study

Session 1: Pre-baseline assessment

Session one began with the participant having the chance to re-read the information sheet (see appendix B), ask any further questions that they may have had and then read and sign the consent sheet (see appendix L). One copy of the consent sheet was given to the participant and one copy kept in a confidential file in a locked cabinet at the MRC-CBSU.

Providing consent had been obtained the researcher then sent a standard letter (see appendix C) to the participant's GP and care coordinator (if applicable) informing them of their participation in the study. The next step was to obtain a written record of the demographic information detailed above.

In order to ensure euthymia and check mood, the mood disorders section of the SCID was administered (First et al., 2002) (see appendix A).

Finally, the baseline measures detailed above were then administered.

This session took approximately 40 minutes.

Baseline period

Participants were asked to fill out the QIDSm and ASRM online every day for two weeks. This involved using a secure mood monitoring website established at the MRC-CBSU called WebMAPP. Each participant had own username and password for the system. The system was linked up with another piece of software (again established at the MRC-CBSU) which monitored (using login names) whether an individual had accessed the WebMAPP website that day. If at 6pm the software had identified that an individual had not yet accessed the WebMAPP website, then the participant received a reminder email at 6pm. If by 9pm the software had identified that an individual had still not accessed the WebMAPP website, then the participant received another reminder email at 9pm. The researcher also received a copy of the email. Participants were given an instruction sheet for using the WebMAPP website (see appendix M) and a participant card for the study in order to remember their login and tick off the days (see appendix N).

Session 2: Pre-training assessment

The first half of session two involved repeating the protocol of the pre-baseline assessment session (with exception of the consent process).

In addition to this, the two idiographic emotional processing measures detailed above were administered.

This first half of session two took approximately 30 minutes.

Session 2: SD-PB training part 1 of 2

The second half of session two is when the "B" block begins (i.e., the SD-PB training package).

The participants were introduced to the SD-PB techniques by reading a psycho-education sheet about the SD-PB training (adapted from Hill, 2013; Appendix O). The script introduced the ideas of loss of perspective and black and white thinking, and presented the rationale for training in self-distancing and in expanding perspective to consider 'the bigger picture' and for evaluating experiences in terms of 'shades of grey'. Participants then chose one of their five recent memories to work through the technique with as a practice. The participant would start by briefly describing the event to the experimenter. The participant was guided through by the experimenter using a standardised semi-structured script (see appendix P) in order to familiarize the participant with the core principals of the training. The description of the SD-PB techniques are provided below (these descriptions are copied from Chapter 4 of Dr Emma Hill's PhD thesis (Hill, 2013) from which the techniques were developed and documented):

Self-Distancing (SD) technique

This guided exercise initially detailed the SD technique: participants were asked to recall all the details of the selected event and 'build a mental picture of it playing out again, seeing the events unfold'. They were then asked what emotions if any they felt and how to rate how vivid their imagined scene is in their mind (on a 10-point scale from 1= 'I cannot imagine this at all', to 5= 'I have a vague picture in my mind but its blurry', to 10= 'I can picture the scene and all the details'). When ready, they were asked to imagine that the memory they had in their mind was taking place on a theatre stage and that they were playing themselves as one of the actors (then once again they repeated the vividness rating). Once they had a detailed and vivid image in mind, they were then asked to imagine walking off of the stage and up into a balcony box, and then to view the memory again from the new vantage point; looking down on themselves on the stage (then the vividness rating was repeated again). The participants were then asked to think about whether they noticed any changes in their thoughts or feelings envisaging the scene from the SD perspective, this was relayed verbally to the experimenter). Once participants felt confident in imagining the event and with SD using the imagined balcony box, they were introduced to the next step.

Perspective Broadening (PB) technique

This second step introduced five perspective broadening strategies for thinking in 'shades of grey' as opposed to in 'black and white' terms. Each strategy required participants to broaden their evaluation of the event along a different perspective dimension. As a mnemonic aide, the strategies were labelled such that their initial letters made up the acronym 'STAGE' to help tie the 2 techniques together; this was summarized on a flash card given to each participant (adapted from Hill 2013; see Appendix Q). The five strategies were 'Similar', 'Time', 'Areas', 'Grey', and 'Else' (see Table 1 below for descriptions). Each strategy aims to broaden perspective using different dimensions, e.g. across repetition of events, across time, across life areas, across positive aspects of situations and events, and across people. It is important to note that in Hill (2013) the 'Grey' strategy was referred to as 'Good' but it was felt that this was too positive and harder to accomplish. In addition to this, the wording for the 'Grey' strategy was slightly edited in this current study with BD in order to avoid the use of words such as 'negative' when some incidents discussed might appear in some ways to be positive yet still distressing.

Table 1

The description of each of the five perspective broadening (PB) strategies

Strategy name	Strategy description
Similar	Asks participants whether they could think of similar events in their past to the event in question but that were less distressing.
Time	Prompts participants to think about how they will feel about the event at different points in the future once

	more time has elapsed.
Areas	Asks participants to reflect on their life as a whole and acknowledge the more positive areas that may offer a contrast with the event in question.
Grey	Asks participants to consider whether were any aspects of the situation which may not be all bad i.e. what the silver lining is.
Else	Prompts the participant to think about what they would say to a close friend who was going through the same thing if they wanted to help that friend to gain perspective on the event.

During this exercise participants were assisted with applying each strategy to their pre-selected event, and this involved asking the participant what the strategy made them think of and how it made them feel. They were also encouraged to elaborate on each strategy as best they could with a visualization exercise in which they re-scripted the depiction of the event on the theatre stage from their self-distanced vantage point in line with the strategy they were applying. The elaborations are detailed in Table 2 below. At the end of each visualisation participants were encouraged to imagine looking down on their actor (now alone) on the stage, and to offer them guidance and reassurance from what they just watched.

Table 2

The descriptions of each of the elaborations for the perspective broadening (PB) strategies.

Strategy name	Elaboration description
Similar	Participants were asked to switch the distressing event for a similar less negative or positive memory, and to watch that playing out on the stage.
Time	Participants were asked to imagine watching their character go through everything they had planned for the next few weeks or days to help feel a sense of time passing.
Areas	Participants were asked to imagine a symbol/person from all the positive areas of their life all on the stage together.
Grey	Participants were asked to imagine watching the scene play out as if they were a director and picking out everything that could be interpreted at positive from the event.
Else	Participants were asked to imagine watching the event happening to someone else they cared about

Participants were then given a cue-card to remember the techniques (see appendix Q). Once participants felt comfortable with the SD technique and with the five PB strategies, they commenced training with these techniques using four scenarios and/or memories. Participants were asked to try to think of a memory similar to the situation portrayed in the scenario (or to imagine the scenario itself) and to then apply the SD-PB

techniques to that memory. Each practice was then rated using the idiographic SD-PB measure (described above).

The second half of session two took approximately 30-40 minutes.

SD-PB training at home

In addition to filling out the QIDSm and ASRM online every day, participants filled in a diary twice a day for the six days in between sessions to focus on applying the SD-PB techniques to newly encountered everyday upsetting events (i.e. an event, thought or memory) (adapted from Hill, 2013). If nothing emotional happened in their day, they were provided a scenario to cue a memory (this is a new addition to the training in this study in order to ensure that training did take place on a type of stimuli each day). The diary instructed them to work through the SD-PB technique with the diary event or scenario-cued memory and then fill out the SD-PB idiographic measure (as described above). Affect ratings were obtained both prior to, and after, completing a diary entry (on separate Likert scales from: 1 '*not positive/negative*' to 9 '*very positive/negative*') (see appendix R).

Session 3: SD-PB training part 2 of 2

The first half of session three involved a repeat of the mood check (the SCID) to ensure euthymia.

As in session two's SD-PB training, participants were asked to read four scenarios and practice using the SD-PB technique with each, rating each practice using the idiographic SD-PB measure (described above).

Participants were then asked to use the SD-PB techniques on two (of the five) recent memories they listed, rating each using the idiographic SD-PB measure.

The first half of session three took approximately 30 minutes.

Session 3: Post-intervention assessment

The second half of session three was the post-intervention assessment. This involved repeating the protocol of session 2: pre-training assessment.

The second half of session three took approximately 30 minutes.

Online follow-up

Two weeks later participants were asked to fill out the baseline measures (described above) for the final (and fourth) time. Participants were sent an email containing a link to questionnaires on the survey monkey website and asked to input their participant code at the beginning.

Participants were then verbally debriefed over the phone following the online follow-up.

2.6 Ethical considerations

This study was reviewed by the National Research Ethics Service (NRES) committee of Wales REC 4 on the 05.08.2015 and after amendments were made the study was given a favourable opinion on the 08.10.2015 (see appendix S). Sponsor and indemnity insurance was provided by the University of East Anglia (UEA) (see appendix T). There were three main ethical considerations of the study: recruitment, consent and distress.

The study involved recruitment of individuals with a diagnosis of BD. Participants with a diagnosis of BD were recruited through the Medical Research Council Cognition and Brain Sciences Unit (MRC-CBSU) and permission was also granted to recruit through the Cambridgeshire and Peterborough NHS Foundation Trust (CPFT) Research Database but no participants were recruited through this avenue. A clinician-researcher at the MRC-CBSU searched for participants in an established database at the MRC-CBSU of individuals with BD who had consented to be contacted about future studies (many of whom had previously participated in research). The clinician-researcher would then grant access to the chief investigator of the study to contact the identified participants via the secure MRC-CBSU email system. The email included the information sheet and an invitation to partake in the research should they wish to.

Consent was obtained in the pre-baseline assessment meeting by participants reading the study information sheet, asking questions, and signing the study consent form (see appendices B and L). Crucially, the information sheet stated that participants were free to withdraw from the study at any point without justification, and that withdrawal did not affect their participation in further research. Recruiting through the MRC-CBSU meant that

participants were paid for their time (£6 an hour) and a contribution was made towards travel (£3), which served to cover their costs rather than to persuade participation.

Confidentiality was upheld by assigning each participant a randomised code which was recorded with their data instead of identifiable information (consent sheets and codes were stored in separate locations). Data was stored at the site of testing (MRC-CBSU) in a locked cabinet in a locked room in accordance with the UEA confidentiality code of practice and the Data Protection Act (1998). The data from this study will be kept for 10 years in accordance with the UEA Research Data Management Policy. Participants were informed of these measures on the consent sheet.

Distress was kept to a minimum but participants were warned in the information sheet that they would be prompted to recall potentially upsetting memories. A protocol was agreed upon should a participant become distressed during a testing session, although this was not required during the course of the study. It was agreed that if participants did become distressed they were to be offered a break. If a break did not help to bring them back to their original emotional state then a risk assessment would be carried out by the researcher, a member of the clinical team at the MRC-CBSU would be on call to speak to, and contact information would be provided if they wished to discuss anything arising from the study (voluntary organization phone numbers and/or they would be asked to refer to the information sheet which provides the contact details for complaints). If their mental state appeared to deteriorate or they were fulfilling criteria for an episode, they would be advised to contact their general practitioner. In order to ensure their general practitioner was contacted we asked for each participant's consent at the beginning of the study to contact their general practitioner should this incident occur. In this occurrence the individual would be asked to withdraw from the study which is in accordance with the study criteria and would be the best course of action for their wellbeing. In the case of an individual becoming distressed whilst doing the tasks at home (e.g. out of office hours) then participants were told to refer to their study card (given in session one) which contains local out of office hours phone numbers that they could use to access support. All participants were debriefed at the end of the study.

Chapter 3: Results

3.1 Overview of the chapter

This chapter presents the data from the participants whom took part in the study. The chapter begins with a sample description and analysis of the data description.

Each participant's data will then be presented individually in the 'individual analyses' section, one participant at a time. Initially, the daily mood symptomatology data (depression and mania) will be presented, this will consist of a brief description and a visual inspection

Then the participant's raw data will be presented, data that was collected at the following four time points: Session 1, at the beginning of Session 2, at the end of Session 3 and at the two week online follow up (note that the baseline phase took place between Session 1 and Session 2, and the training phase took place between Session 2 and Session 3). The data collected at these four time points consists of the Bipolar Disorder symptomatology data, *decentering* data, and perspective-taking data.

Following this, descriptive statistics of the within-training idiographic STAGE data will be presented. During the training phase participants were asked to fill out idiographic ratings of the STAGE technique each time they were asked to use it. They were asked to use the STAGE technique four times: On four scenarios in Session 2, twice a day (for seven days) on an event or on a scenario for their homework, on four scenarios in Session 3, and on two of their emotional memories (recalled at the start of the study) in Session 3. The idiographic ratings of the STAGE technique (rated on a 7-point Likert scale from 1 = 'Not at all' to 7 = 'Extremely so') included (see appendix R): how easily and to what extent they were able to use the self-distancing part of the STAGE technique and the STAGE strategies; the extent to which each of the STAGE strategies were helpful, the extent to which the imagery was helpful; and the extent to which they used the imagery. Participants will then rate whether they noticed a change in their distress after applying the techniques (on a 20-point visual

analogue scale from -10 = 'decreased distress', to 0= 'no change', to +10 = 'increased distress').

Then some exploratory pre-post data will be presented. During the study participants were asked to carry out some ratings pre- and post-training. The pre-ratings were carried out at the start of Session 2 and the post-ratings were carried out at the end of Session 3. Firstly, participants were asked to recall five emotional memories and rate their distress at the time of the event taking place and at the time of recall (i.e. there and then in the session). Secondly, participants were asked to rate the extent and ease with which they were able to think of the positive and negative aspects of four emotional scenarios/memories (they were provided with scenarios but were prompted to recall a memory of theirs similar to the scenario). These were all completed pre- and post-training.

To finish, each participant's data will be summarised in a final summary. After presentation of the individual analyses, reliable and clinical change will be calculated for the data collected at the four time points. Finally, an overall summary will be presented at the end of the chapter.

3.2 Sample description

Six participants (four male, two female) with BD currently in a euthymic state were recruited in total to the study. The demographics of the sample as described below in Table 3. The ages ranged from 22 to 49 years old. The participant's scores varied at baseline on perspective-taking, decentering, anxiety and affective lability. According to the BAI (Beck & Steer, 1990) measure of anxiety, two participants (P1 and P3) had minimal anxiety, three participants had mild anxiety (P2, P4 and P6), and one participant had severe anxiety (P5).

Table 3

Demographic data and baseline measures of the participant sample

	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Age	49	32	39	22	36	28
Gender	Male	Male	Male	Female	Female	Male
Ethnicity	White British	White British	White German	White British	North African	Middle eastern
Medication	Lithium, Lamotrigine, Sertraline	none	Citalopram Equivalent	Quetiapine	none	none
CERQ – perspective subscale	8	17	7	15	15	20
EQ – *decentering* subscale	31	39	32	18	30	53
BAI	0	10	7	10	29	13
ALS-SF_ Anxiety/Depression	8	12	8	6	16	39
ALS-SF_ Depression/ Elation	12	21	15	22	24	9
ALS-SF_	11	11	11	20	9	18

Anger						
ALS-SF_ Total	31	44	34	48	49	12
Mean daily depression ratings during baseline	6.92	5.71	4.86	5.75	3.38	5.90
Mean daily mania ratings during baseline	6.92	3.00	0.79	0.17	0.54	3.40

Note. CERQ = Cognitive Emotion Regulation Questionnaire (CERQ; Garnefski, Kraaij, & Spinhoven, 2001); Experiences Questionnaire (EQ; Fresco et al., 2007); Beck Anxiety Inventory (BAI; Beck & Steer, 1990); Affective Lability Scale-short form (ALS-SF; Oliver & Simons, 2004). On all the measures, the higher the score indicates the higher the participant's ability or symptomatology.

3.2 Data preparation and analysis

3.2.1 Data entry

Data were entered into a Microsoft Excel spreadsheet and line graphs were created using this software. Exploratory statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS) Version 22 and the Simulation Modelling Analysis (SMA) program Version 9.9.28. Any missing data, for example if a participant missed their mood ratings one day, was managed by leaving a blank space in the graph. This approach to missing data is supported in the literature on SMA as there is evidence that leaving a gap or

entering zero makes no difference to the outcome (Chen, Peng, & Chen, 2015). Across all participants only ten days out of a possible 126 (21 days x 6 people) were missed and a therefore a blank space inserted for the mood rating. There was no missing data for the any of the other data collected in the study (i.e. the data collected at the four time points).

3.2.2 Analysis of the data

The different types of data collected in the study were analysed using different approaches. The two types of data were daily data and data collected at four time points during the study.

3.2.2.1 Analysis of the daily mood symptomatology data

Visual inspection

Data collected on a daily basis (the QIDSm and the ASRM) were presented on individual graphs. The graphs displaying the daily measures were divided by a line into two phases named "baseline" and "training". A visual inspection was then carried out on each individual's graph. Visually inspecting the data using the methods below allows the magnitude and rate of change to be calculated between the baseline phase and the training phase (Kazdin, 2011). Kazdin (2010) suggested guidelines for what a visual inspection should entail:

1) Changes in means (whether there is a change in the mean score of one phase and a mean score of another phase). This is a measure of magnitude. The scope of this measure was to capture whether the average daily mood score differed between the baseline phase and the training phase. This was calculated by subtracting the baseline phase mean mood score from the training phase mean mood score.

2) Changes in level (whether there is a change from the last data point of one phase to the first data point of another phase). This is a measure of magnitude. The scope of this measure was to capture whether there was a sudden change in mood when an individual moved from the baseline phase to the training phase. This was calculated by subtracting the last data point in the baseline phase from the first data point in the training phase.

Another change in level has also been calculated (not recommended by Kazdin) which is the change in level *within* each phase. The scope of this measure was to capture whether there was a change in mood between when an individual started a phase and finished a phase. This was calculated by subtracting the last data point in a phase from the first data point in a phase. This was done for both the baseline phase and the training phase.

3) Changes in trend (whether there is a change in the direction in which the data is going in one phase compared to another phase). This is a measure of rate of change. The scope of this measure was to capture whether there was a trend in mood in each phase (i.e. did mood get better or worse?) and also whether the trends differed between the baseline phase and the training phase (i.e. did mood get better in one and worse in another?). This was calculated by visually inspecting the data for a trend in data points and producing a statement such as 'no clear change in trend between the phases'.

At the end of each visual inspection a judgement was made as to whether any clinically significant change had taken place following the training, as defined by Kazdin (2011). Kazdin (2011) describes clinically significant change as a change that has made a practical or noticeable difference to the life of a client, and there are a set of criteria to aid in judging this (clinically significant change is achieved if any of the criteria can be met): functioning returns to a normative range, the client no longer meets diagnostic criteria, there is a large change or there is an improvement on a measure of high social impact. If an individual has reached clinically significant change (according to Kazdin's criteria) on either the depression or mania daily mood symptomatology measure then that individual will be classed as a *responder* (i.e. a *responder* to the training package), whereas if an individual does not reach clinically significant change then they will be classed as a *non-responder*.

Statistical analyses

Simulation Modeling Analysis (Borckardt et al., 2008; Borckardt & Nash, 2014) is a relatively new analysis which controls for the influence of autocorrection to assess level and change in small time-series studies. SMA is an advance on Kazdin's methodology of visually inspecting the data as it is able to account for auto-correction and to produce a statistic

rather than rely on judgment of the researcher. To test for significance, SMA uses a bootstrapping technique. This analysis was conducted on each individual's daily measures (both within the baseline phase and the training phase) (the QIDSm and the ASRM). The scope of this measure was to capture whether there were any differences in level or slope between the two phases. If a difference in level (i.e., difference in means between the phases) was found and the direction of that difference was that the training phase score was lower than the baseline score, then this indicated that the training was beneficial to the individual. If a difference in slope (i.e. difference in angle of the slope between the phases) was found and the direction of that difference was that the training phase slope was angled downwards, then this indicated that the training was beneficial to the individual. Overall, if there are no differences in these analyses then it indicates that there is an identical behavioural level across the phases.

Kendall's tau correlation analysis (a non-parametric measure of strength of a relationship between two variables) were conducted on the baseline data of each individual's daily measures (the QIDSm and the ASRM). This was conducted in order to supplement the visual inspection and the SMA as it acts as another way to measure the slope in a phase (i.e. Kendall's Tau correlation analysis is equivalent to the SMA analysis of slope except in this thesis it is only being run on the baseline phase). The scope of this measure was to capture whether the baseline period could be considered as stable for that individual (no significant correlation indicated stability). If a correlation was found, then this indicated a trend in the baseline data.

3.2.2.2 Analysis of the data collected at four time points

Presentation of the data

Data that was collected at multiple time points (the BAI, ALS, EQ and CERQ) but not on a daily basis was presented on line graphs for each individual. The graphs indicated when the four time points took place: "Session 1 – Start of baseline" which took place before the participants started the two-week baseline phase, "Session 2 – Pre training" which took place at the beginning of Session 2 just before the training was introduced in the session, "Session 3 – Post-training" which took place at the end of Session 3 after the

training had finished, and "Two week follow up" which took place online two weeks after session 3.

Reliable and Clinical change

A reliable change index (RCI; Jacobson & Truax, 1991) and a clinically significant change score (CSC; Jacobson et al., 1984) calculated for each of the measures administered at the four time points during the study (BAI, ALS, EQ, and CERQ). The purpose of this was to calculate whether any reliable or clinically significant change had taken place from pre-training to post-training, and from pre-training to the two-week follow-up.

The RCI aims to answer the question of whether a statistically reliable change has taken place and uses a methodology by Jacobson and Truax (1991). A statistically reliable change is one that is larger than the likely variation posed by the measure being used. This is achieved by using the standard deviation of a matched sample and the reliability co-efficient alpha (test-retest reliability score) of a particular measure in order to calculate the RCI value. Each participant's change score is then compared to the RCI value, and if the participant's change score is more than the value then one can conclude that a reliable change has taken place. The statistical formula for RCI is (SD1 = standard deviation of the matched sample, *r* = test-retest reliability):

$$1.96 \times SD1 \times \overline{2} \times \overline{(1-r)}$$

The CSC aims to answer the question of whether a clinically significant change has taken place, this means whether an individual has moved from a clinical to non-clinical range on the measure (Jacobson et al., 1984). The CSC uses a methodology by Jacobson and Truax (1991) which has a set of criteria to help decide how to calculate the CSC according to what data is available on the measure used. If both clinical and healthy norms are available in the literature then criteria 'c' is used, this involves using the following formula (S1 = standard deviation of clinical sample, S2= standard deviation of healthy sample, M1 = mean of clinical sample, M2= mean of healthy sample):

$$\frac{S1M2 + S2M1}{S1 + S2}$$

If only healthy norms are available in the literature then criteria 'b' is used, this involves using the following formula:

$$M2 + 2(S2)$$

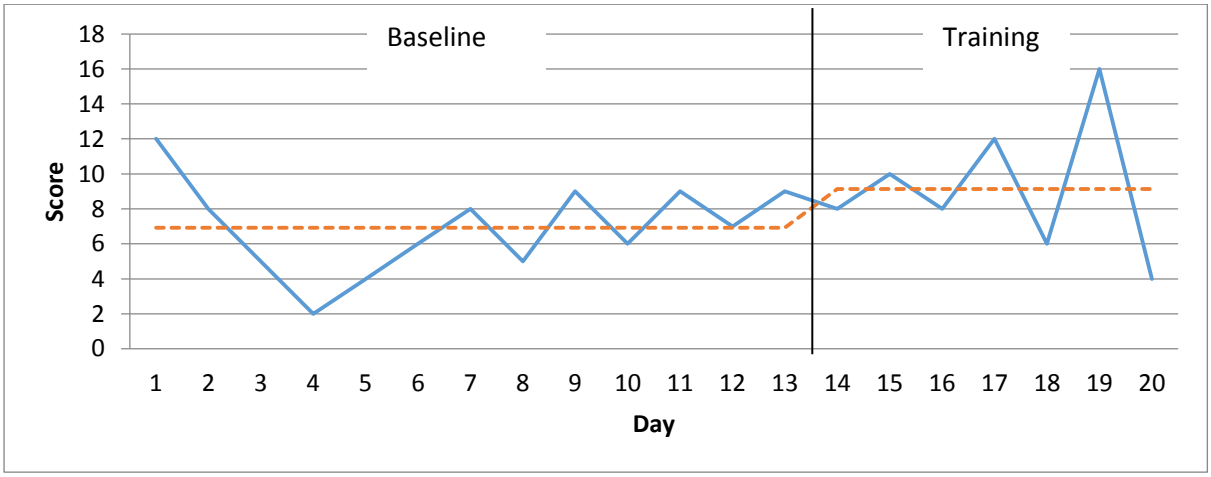
If no clinical or healthy norms are available in the literature then CSC is calculated using the cut off scores of the measure used, and so the clinical cut off score becomes the CSC value. Each participant's raw post-training score and raw follow-up score is then compared to the CSC value, and if the participant's score is less than the CSC value then one can conclude that a clinically significant change has taken place.

3.4 Individual analyses

3.4.1 Participant 1

Participant 1 is a 49-year-old white British male. He described having experienced four episodes of depression in his life and too many episodes of mania to count (code 99). He has previous experience of Cognitive Behavioural Therapy (two separate treatments) but no previous experience of Mindfulness.

3.4.1.1 Daily depression symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.1. Scores on the daily QIDSm (depression symptomatology) measure for Participant 1.

Table 4

Visual inspection of the daily QIDSm data displayed in Figure 3.1

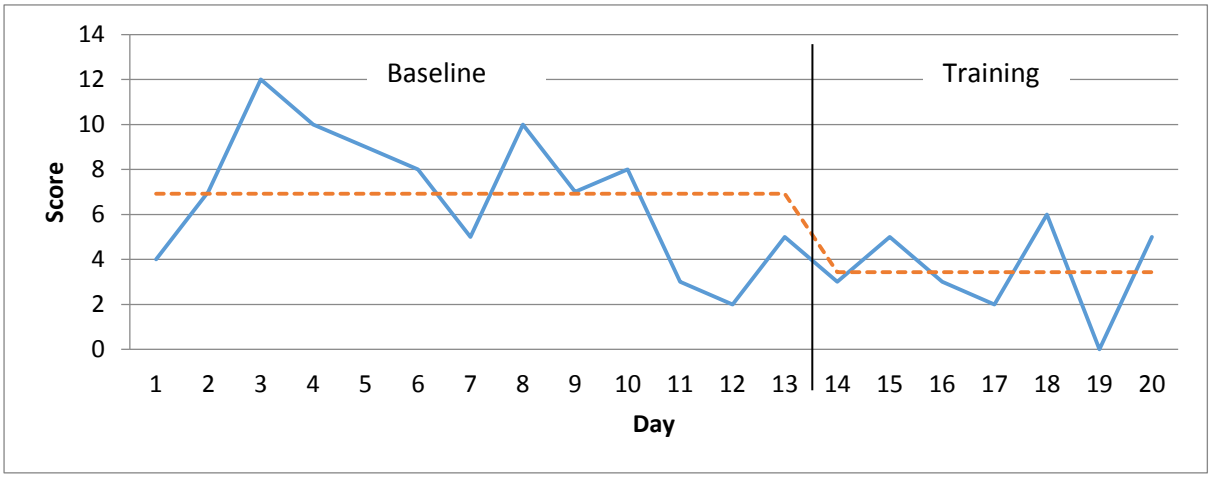
Phase	Mean depression score	Change in level	Trend
During the baseline phase	6.92	-3	A slight increase trend within the phase
During the training phase	9.14	-4	A slight increase trend within the phase
The change between the baseline phase and the training phase	+ 2.22	-1	No clear change in trend between the phases

The visual inspection (shown in Figure 3.1 and Table 4) concludes that the mean depression score was slightly higher (+2.22) in the training phase compared to the baseline phase. The changes in levels within and between the phases were small and difficult to interpret due to the variance in mood. Slight increase trends were observed in the depression measure in both the baseline and the training phase, and there was no change in trend between the phases. In line with the visual inspection, the Simulation Modeling Analysis confirmed that there was no difference in level (R=0.34, p=0.13) or slope (R=0.21, p=0.34) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the QIDS score during the baseline phase, the results indicated that there was no correlation therefore the QIDSm data is considered to be stable over the baseline period (tau=.214, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 1 did not show any clinically significant change in depression scores and was therefore classed as a *non-responder*.

3.4.1.2 Daily mania symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.2. Scores on the daily ARSM (mania symptomatology) measure for Participant 1

Table 5

Visual inspection of the daily ASRM data displayed in Figure 3.2

Phase	Mean mania score	Change in level	Trend
During the baseline phase	6.92	+1	A decrease trend within the phase
During the training phase	3.43	+2	No clear trend within the phase
The change between the baseline phase and the training phase	- 3.49	-2	A slight decrease trend between the phases

The visual inspection (shown in Figure 3.2 and Table 5) concludes that the mean mania score was slightly lower (-3.49) in the training phase compared to the baseline phase. The changes in levels within and between the phases were small and difficult to interpret due to the variance in mood. There was a decrease trend observed in the mania measure during the baseline phase but no trend observed in the training phase. There was a slight decrease trend observed between the phases.

Despite speculations around a slight decrease trend between the phases in the visual inspection, the Simulation Modeling Analysis showed that there was no difference in level ($R=0.54$, $p=0.11$) or slope ($R=0.51$, $p=0.14$) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the ASRM score during the baseline phase, the results indicated that there was no correlation therefore the ASRM data is considered to be stable over the

baseline period (tau=.342, p>.05). This confirmed that there was no trend in the baseline phase despite speculations in the visual inspection.

Although the SMA showed no differences, participant 1 showed a clinically significant change (reduction) in mania scores as their mean mania during the training phase fell to 3.43. This is below the cut off score of 6 (high probability of manic condition) according to Altman et al. (1997) unmodified version of the questionnaire (weekly version, not daily), therefore fulfilling Kazdin's (2011) criteria. Participant 1 can be classed as a *responder* in terms of mania symptomatology.

3.4.1.3 Additional Bipolar Disorder symptomatology data

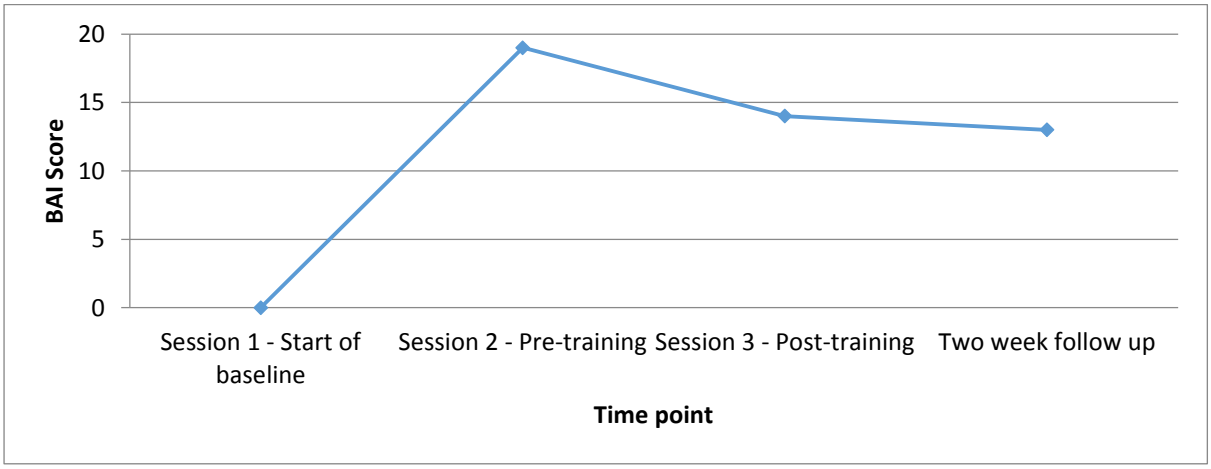


Figure 3.3. Scores on the BAI (anxiety symptomatology) at four time points for Participant 1

The results from the BAI scores indicate an increase in anxiety during the baseline phase. Once training commenced anxiety appeared to decrease, and then it continued to decrease to the two week follow up.

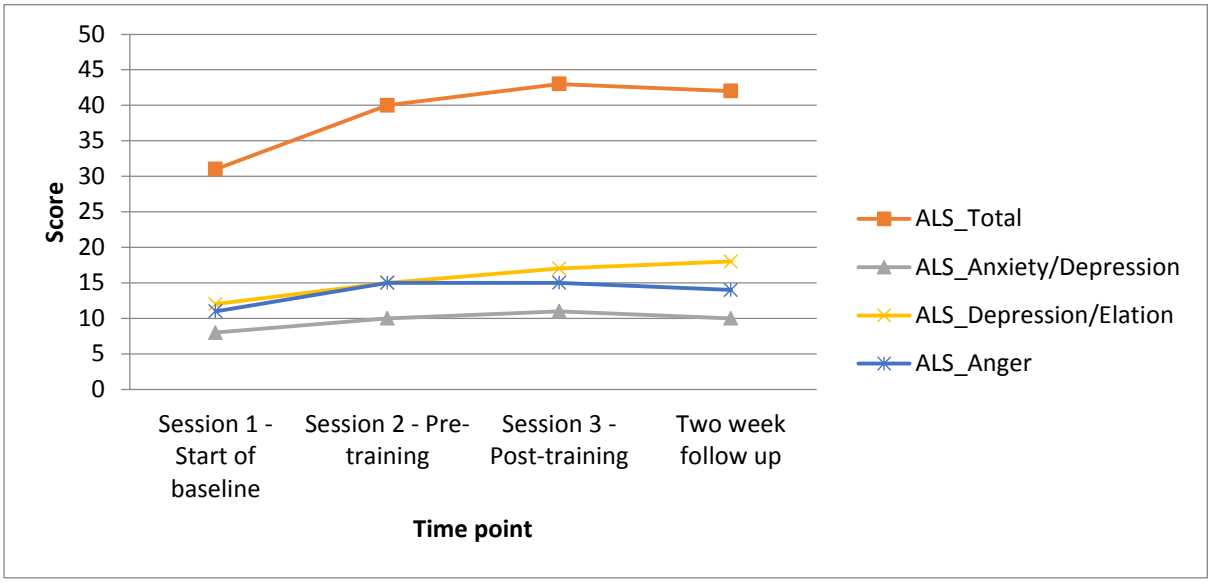


Figure 3.4. Scores on the ALS (affective lability) at four time points for Participant 1

The results from the ALS scores indicate an increase in affective lability during the baseline phase. Once training commenced his affective lability appeared to increase slightly and then in general it levelled off by the two week follow up.

3.4.1.4 Decentering data

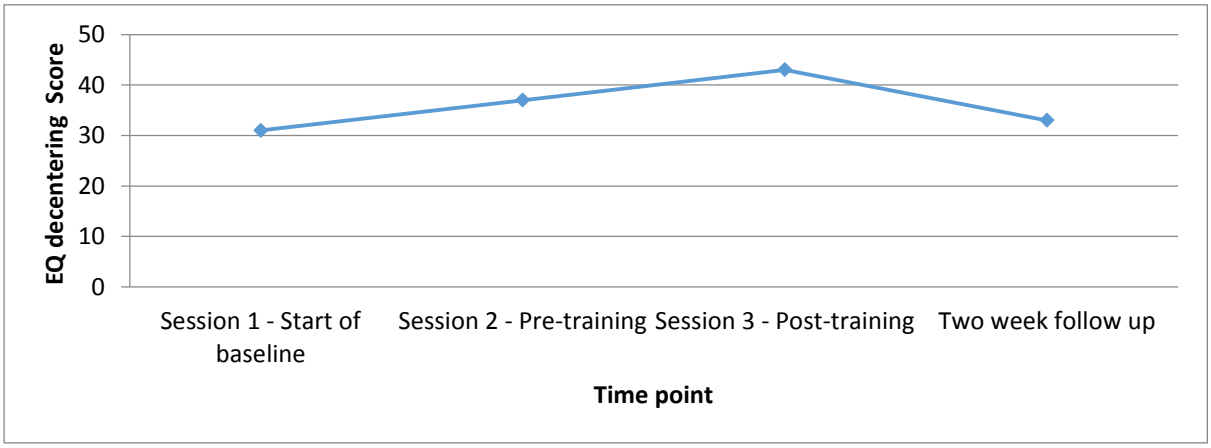


Figure 3.5. Scores on the EQ *Decentering* subscale at four time points for Participant 1

The results from the EQ *Decentering* subscale scores indicate a slight increase in the ability to *decenter* during the baseline phase, which continued into the training phase. However, by the two week follow up the ability to *decenter* appears to have decreased back to where it was at the beginning of the study.

3.4.1.5 Perspective taking data

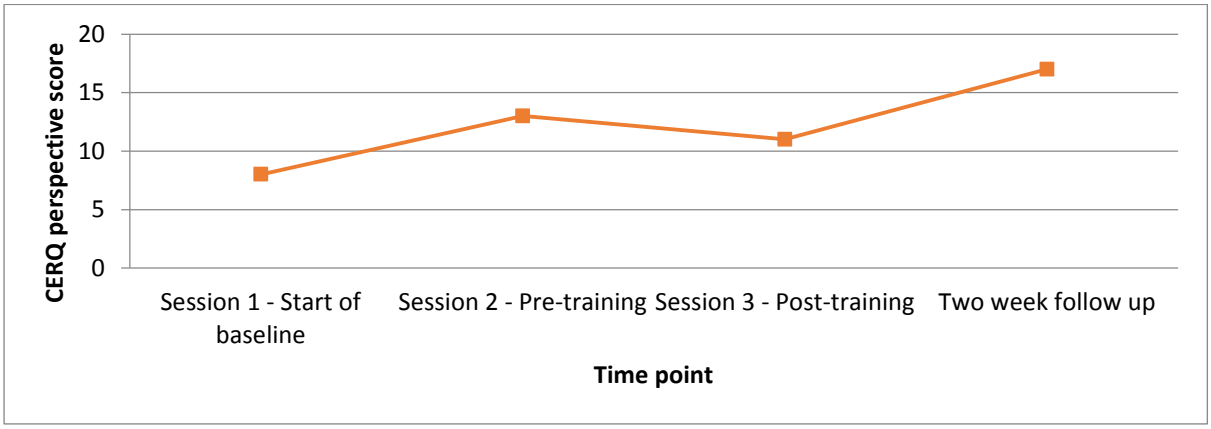


Figure 3.6. Scores on the CERQ Perspective taking subscale at four time points for Participant 1

The results from the CERQ perspective taking subscale scores indicate an increase in the ability to perspective-take during the baseline phase. Once training commenced the ability decreased slightly. However, by the two week follow up the ability to perspective take appeared to have increased again.

3.4.1.6 Within-training idiographic STAGE data

Table 6

Participant 1's average ratings following each use of the STAGE technique.

	Session 2 scenarios	Homework	Session 3 scenarios	Session 3 memories	Overall average
Ease of SD	4.75	4.91	5.00	6	5.17
Ease of STAGE	4.75	4.82	5.00	6	5.14
Extent of use SD	4.75	4.73	4.75	5.5	4.93
Extent of use STAGE	4.50	4.45	4.50	5.5	4.74
Helpfulness of 'similar'	5.25	5.11	2.50	5.5	4.59
Helpfulness of 'time'	5.00	5.00	3.25	6	4.81
Helpfulness of 'areas'	4.50	5.00	3.25	5.5	4.56
Helpfulness of 'grey'	4.67	4.00	3.50	3.5	3.92
Helpfulness of 'else'	5.25	5.56	4.00	4.5	4.83
Helpfulness of imagery	5.67	4.00	3.67	5.5	4.71
Use of imagery	5.50	6.60	3.50	6	5.40
Change in distress	-2.50	-1.36	-1.50	-3.5	-2.22

Note: SD = Self-distancing, STAGE = STAGE strategies.

The results from idiographic ratings of the STAGE technique indicate that overall the technique was easy to use, the strategies were helpful (with the 'time' and 'else' strategies being more helpful), the imagery was helpful and it was used. Reductions in distress were reported throughout the training.

3.4.1.7 Exploratory pre-post data

Table 7

Participant 1's ratings of 'distress at the time' and 'distress at recall' for five emotional memories (on a 10cm line)

	Pre-training	Post-training	Used as training material?
M1 at time	9.2	8.2	Yes
M1 at recall	6.2	4.3	
M2 at time	6.3	4.9	Yes
M2 at recall	1	5.2	
M3 at time	8.7	8.5	Yes
M3 at recall	8	7.1	
M4 at time	7.9	7.7	No
M4 at recall	7.5	2.9	
M5 at time	8.2	6.3	No
M5 at recall	8.7	1.8	

Note: M1 = memory 1, M2 = memory 2, M3 = memory 3, M4 = memory 4, M5 = memory 5

The results from the distress ratings indicate that overall distress had reduced both for the reported distress at the time of the event taking place and for the distress at the time of recall in the sessions. In addition to this, it appears that distress had reduced for memories (4 and 5) that had not been used in the training.

Table 8

Participant 1's average ratings of the extent and ease at which they were able to think of the positive and negative aspects of emotional scenarios/memories

	Pre-training	Post-training
Extent positive thinking	4.25	4.5
Ease positive thinking	4.25	4.75
Extent negative thinking	4.25	2.75
Ease negative thinking	4.25	2.75

The results from the positive and negative thinking ratings indicate that overall 1) the ease and extent of positive thinking had increased slightly and 2) the ease and extent of negative thinking had reduced by a large amount.

3.4.1.8 Summary of Participant 1

In summary, the analysis of the daily mood symptomatology data showed that participant 1 did not show a clinically significant change in depression scores but did however show a clinically significant reduction in mania scores during the training.

Participant 1's anxiety and affective lability scores rose considerably during the baseline phase, the reason for this is unknown but the gentleman did reveal that he had his

children staying with him which he said can cause ups and downs in his mood, they did however start to drop again.

Participant 1 experienced steady increases in their *decentering* ability, although this was not maintained at the two-week follow up. They also experienced increases in their perspective taking ability, although this took place during the baseline phase, then dropped and then increased considerably at the two-week follow up.

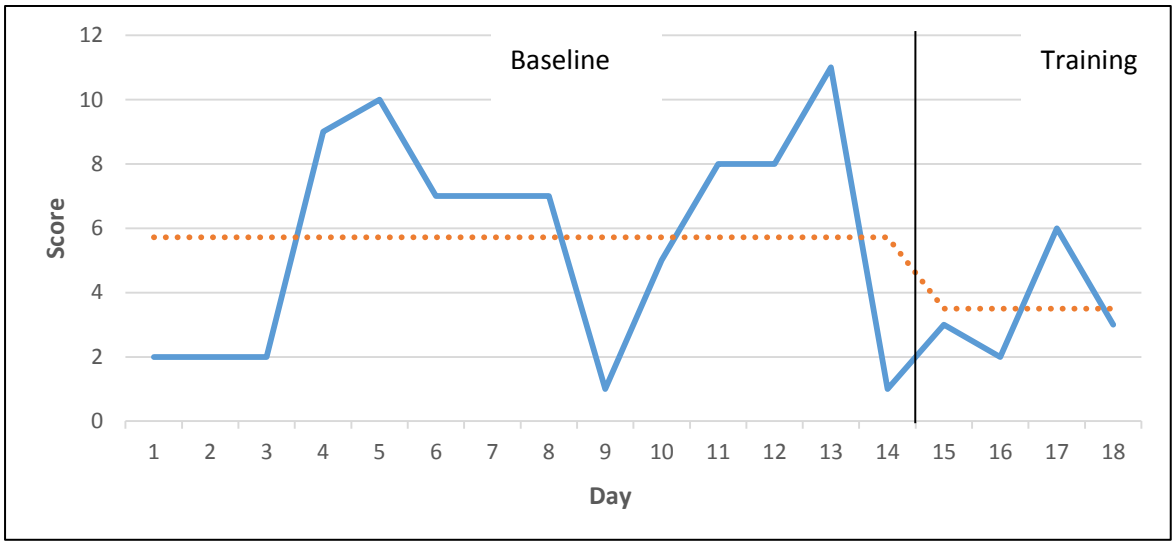
The within-training STAGE data showed that participant 1 appeared to get on well with the training, and on average experienced reductions in distress. Exploratory pre-post data showed that participant 1 experienced reductions in distress related to their memories regardless of whether they were used during the training. Reductions were also experienced in the ease and extent of negative thinking from pre to post training.

Overall, participant 1 is a *responder* in terms of mania symptoms and benefitted from the training in many ways, although personal circumstances may have intervened in the study.

3.4.2 Participant 2

Participant 2 is a 32-year-old white British male. He describes having experienced six to seven episodes of depression and mania in his life. He has previous experience of Cognitive Behavioural Therapy (one-year long treatment) and previous experience of Mindfulness (eight years of using a podcast fortnightly).

3.4.2.1 Daily depression symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.7. Scores on the QIDSm (depression symptomatology) measure for Participant 2

Table 9

Visual inspection of the daily QIDSm data displayed in Figure 3.7

Phase	Mean depression score	Change in level	Trend
During the baseline phase	5.71	-1	Slight increase trend within the phase
During the training phase	3.5	+1	Slight increase trend within the phase
The change between the baseline phase and the training phase	- 2.21	+2	No clear change in trend between the phases

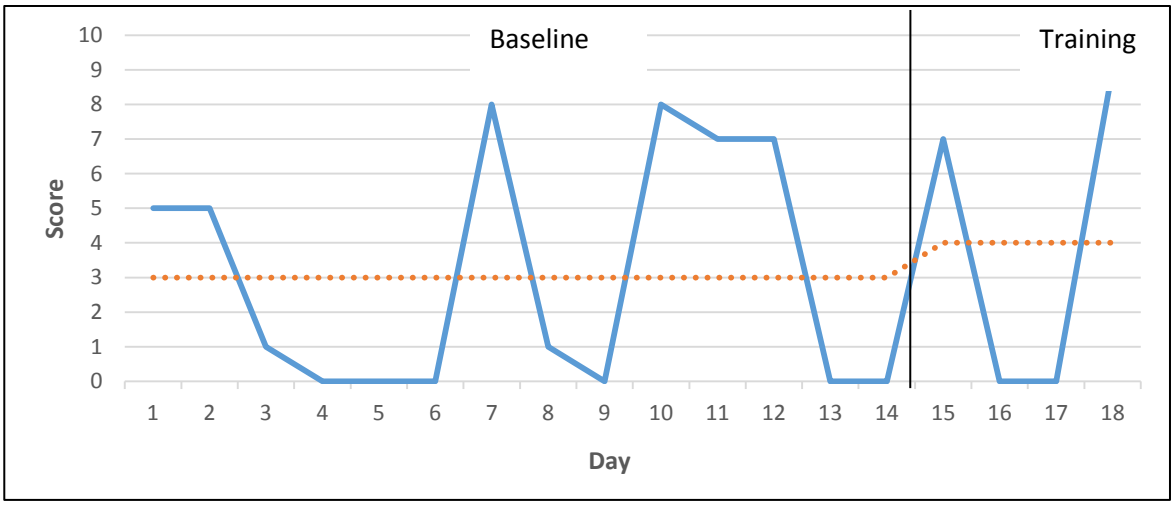
The visual inspection (shown in Figure 3.7 and Table 9) concludes that the mean depression score was slightly lower (-2.21) in the training phase compared to the baseline phase. The changes in levels within and between the phases were small and difficult to interpret due to the variance in mood. A slight increase trend was observed in the depression measure in both the baseline and the training phase although this was not very clear, and there was no change in trend between the phases.

In line with the visual inspection, Simulation Modeling Analysis showed that there was no difference in level (R=0.29, p=0.35) or slope (R=0.04, p=0.91) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the QIDS score during the baseline phase, the results indicated that there was no correlation therefore the QIDSm data is considered to be stable over the baseline period (tau=.150, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 2 did not show any clinically significant change in depression scores and was therefore classed as a *non-responder*.

3.4.2.2 Daily mania symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.8. Scores on the daily ARSM (mania symptomatology) measure for Participant 2

Table 10

Visual inspection of the daily ASRM data displayed in Figure 3.8

Phase	Mean mania score	Change in level	Trend
During the baseline phase	3.00	-5	No clear trend within the phase
During the training phase	4.00	+2	No clear trend within the phase
The change between the baseline phase and the training phase	+1.00	+7	No clear trend between the phases

The visual inspection (shown in Figure 3.8 and Table 10) concludes that the mean mania score was slightly higher (+1) in the training phase compared to the baseline phase. The changes in levels within and between the phases were difficult to interpret due to the variance in mood. There was no clear trends observed in the mania measure during the baseline phase, training phase or between the phases.

In line with the visual inspection, the Simulation Modeling Analysis confirmed that there was no difference in level (R=0.12, p=0.62) or slope (R=0.08, p=0.74) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the ASRM score during the baseline phase. The results indicated that there was no correlation therefore the ASRM data is considered to be stable over the baseline period (tau=.074, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 2 did not show any clinically significant change in mania scores and was therefore classed as a *non-responder*.

3.4.2.3 Additional Bipolar Disorder symptomatology data

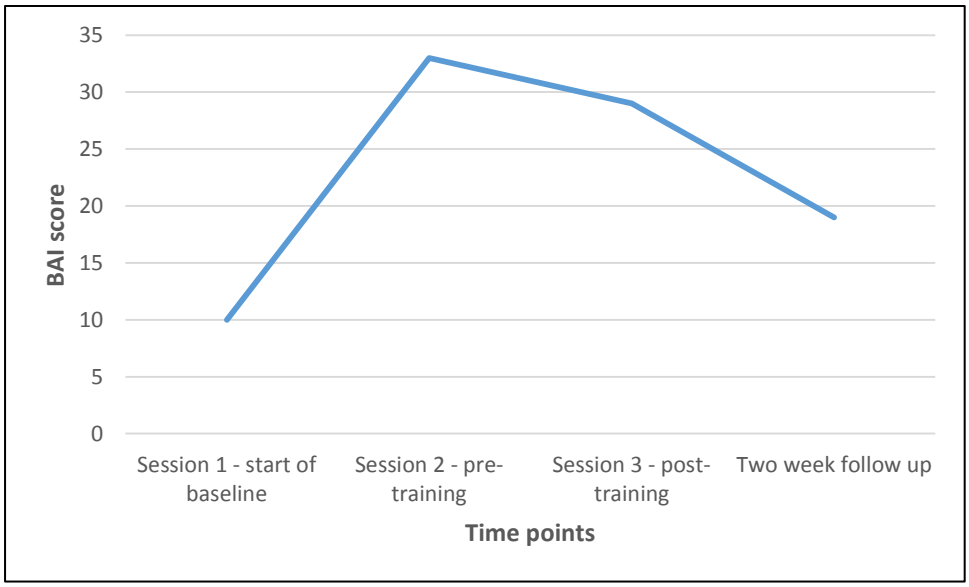


Figure 3.9. Scores on the BAI (anxiety symptomatology) at four time points for Participant 2

The results from the BAI scores indicate an increase in anxiety during the baseline phase. Once training commenced anxiety appeared to decrease, and then it continued to decrease to the two week follow up.

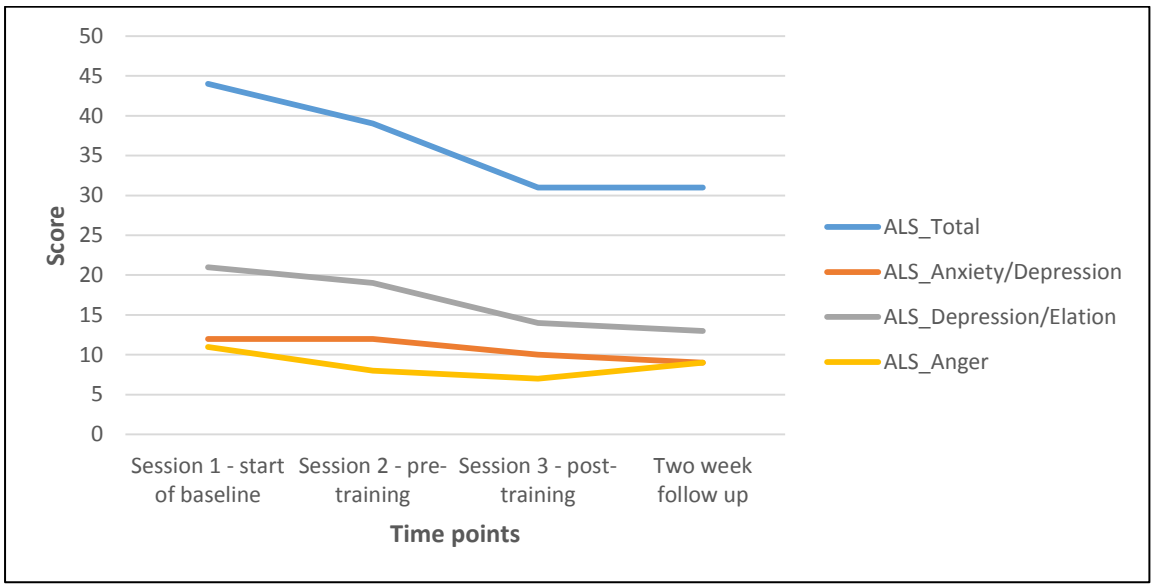


Figure 3.10. Scores on the ALS (affective lability) at four time points for Participant 2

The results from the ALS scores indicate a steady decrease in affective lability during the baseline phase and training phase. This was maintained at the two week follow up.

3.4.2.4 Decentering data

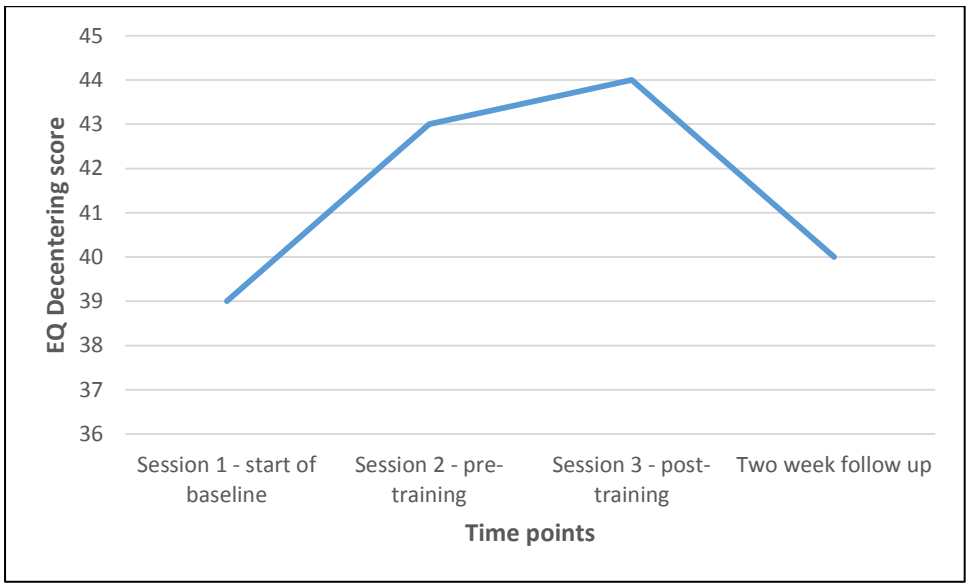


Figure 3.11. Scores on the EQ *Decentering* subscale at four time points for Participant 2

The results from the EQ *Decentering* subscale scores indicate an increase in the ability to *decenter* during the baseline phase, which continued into the training phase. However, by the two week follow up the ability to *decenter* appears to have decreased back to where it was at the beginning of the study.

3.4.2.5 Perspective taking data

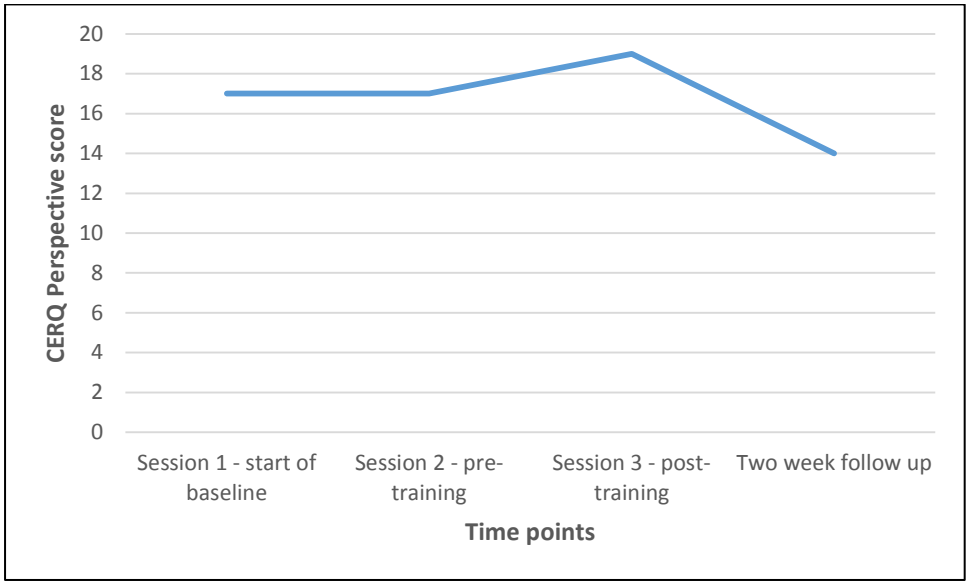


Figure 3.12. Scores on the CERQ Perspective taking subscale at four time points for Participant 2

The results from the CERQ perspective taking subscale scores indicate a slight increase in the ability to perspective-take during the training phase. However, this was not maintained at the two week follow up.

3.4.2.6 Within-training idiographic STAGE data

Table 11

Participant 2's average ratings following each use of the STAGE technique.

	Session 2 scenarios	Homework	Session 3 scenarios	Session 3 memories	Overall average
Ease of SD	5	5.6	6.3	7	6.0
Ease of STAGE	6.3	6.4	6.5	7	6.6
Extent of use SD	5.3	5.8	6.3	6	5.9
Extent of use STAGE	6.5	6.6	6.8	6.5	6.6
Helpfulness of 'similar'	6.5	6.9	6	4.5	6.0
Helpfulness of 'time'	6.8	6.7	6.8	4	6.1
Helpfulness of 'areas'	6.5	6.6	7	6.5	6.7
Helpfulness of 'grey'	4.3	4.8	5.7	5.5	5.1
Helpfulness of 'else'	5.5	4.8	6.3	5	5.4
Helpfulness of imagery	5.5	6	6.3	6.5	6.1
Use of imagery	8	8.1	8.8	9.5	8.6
Change in distress	-3.8	-4.3	-2.8	-4	-3.7

Note: SD = Self-distancing, STAGE = STAGE strategies.

The results from idiographic ratings of the STAGE technique indicate that overall the technique was easy to use, the strategies were helpful (with the 'areas' strategy being the most helpful), the imagery was helpful and it was used. Reductions in distress were reported throughout the training.

3.4.2.7 Exploratory pre-post data

Table 12

Participant 2's ratings of 'distress at the time' and 'distress at recall' for five emotional memories (on a 10cm line)

	Pre-training	Post-training	Used as training material?
M1 at time	9.8	10	Yes
M1 at recall	7.9	3.3	
M2 at time	7.2	9.8	Yes
M2 at recall	4.2	0.2	
M3 at time	9.8	8.2	No
M3 at recall	6.7	2.9	
M4 at time	6.9	7.9	Yes
M4 at recall	4.5	1.2	
M5 at time	9.6	8	No
M5 at recall	7.6	3.5	

Note: M1 = memory 1, M2 = memory 2, M3 = memory 3, M4 = memory 4, M5 = memory 5

The results from the distress ratings indicate that overall distress had reduced both for the reported distress at the time of the event taking place and for the distress at the time of recall in the sessions. In addition to this, it appears that distress had reduced for memories (3 and 5) that had not been used in the training.

Table 13

Participant 2's average ratings of the extent and ease at which they were able to think of the positive and negative aspects of emotional scenarios/memories

	Pre-training	Post-training
Extent positive thinking	4.5	6.25
Ease positive thinking	3.75	6
Extent negative thinking	5.75	5.25
Ease negative thinking	5.5	5.25

The results from the positive and negative thinking ratings indicate that overall 1) the ease and extent to positive thinking had increased and 2) the ease and extent of negative thinking had reduced slightly.

3.4.2.8 Summary of Participant 2

In summary, the analysis of the daily mood symptomatology data showed that participant 2 did not show a clinically significant change in depression scores or mania scores during the training, and therefore was a *non-responder*.

Participant 2's anxiety scores increased during the baseline phase but then steadily decreased, and their affective lability scores steadily decreased throughout the baseline and training phase.

Participant 2 experienced steady increases in their *decentering* ability and some small increases in their perspective taking ability, however neither were maintained at the two week follow up.

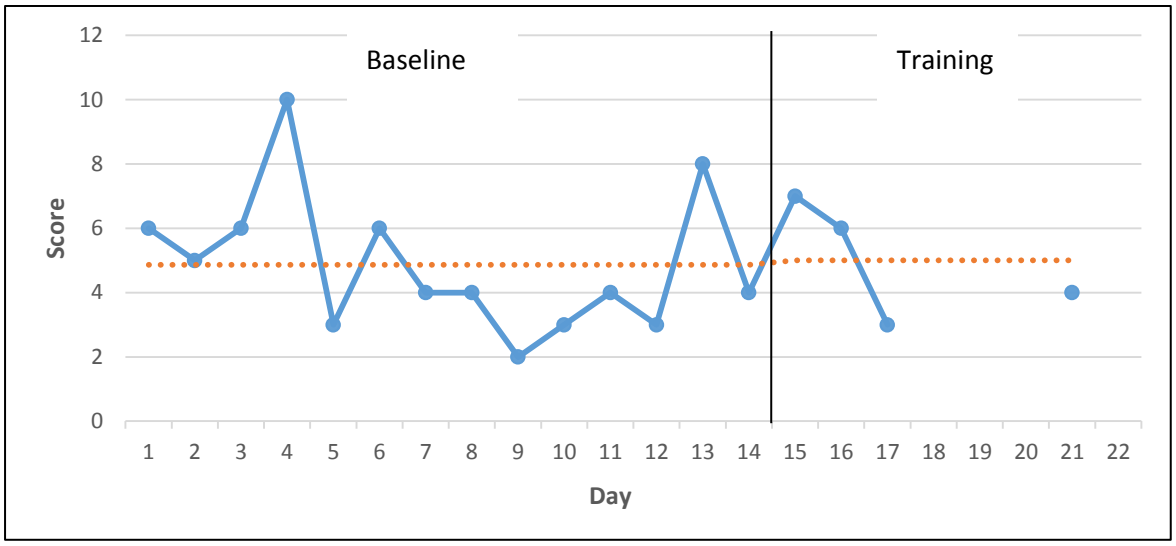
The within-training STAGE data showed that participant 2 appeared to get on well with the training, and on average experienced reductions in distress. Exploratory pre-post data showed that participant 2 experienced reductions in distress related to their memories. Participant 2 also experienced an improvement in the ease and extent of positive thinking from pre to post training.

Overall, participant 2 is a *non-responder* in terms of mood symptomatology but did appear to gain cognitive benefits from taking part in the training.

3.4.3 Participant 3

Participant 3 is a 39-year-old white Austrian male. He described having experienced too many episodes of depression and mania in his life to count (code 99). He has previous experience of Cognitive Behavioural Therapy (100 hours over a two-year period about 10 years ago) and no previous experience of Mindfulness.

3.4.3.1 Daily depression symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.13. Scores on the QIDSm (depression symptomatology) measure for Participant 3

Table 14

Visual inspection of the daily QIDSm data displayed in Figure 3.13

Phase	Mean depression score	Change in level	Trend
During the baseline phase	4.86	-2	No clear trend within the phase
During the training phase	5	-3	No clear trend within the phase
The change between the baseline phase and the training phase	+0.14	+3	No clear change in trend between the phases

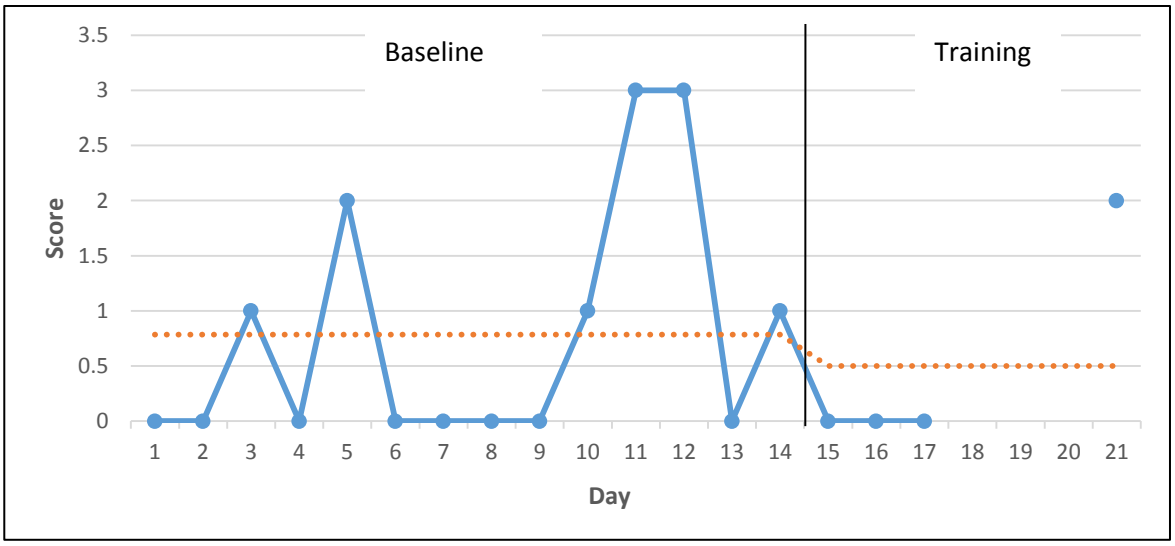
The visual inspection (shown in Figure 3.13 and Table 14) concludes that there were no meaningful changes in the mean depression score between the phases. The changes in levels within and between the phases were difficult to interpret due to the variance in mood. No trends were observed in the depression measure in either the baseline or training phases and there was no change in trend between the phases.

In line with the visual inspection, Simulation Modeling Analysis showed that there was no difference in level (R=0.03, p=0.90) or slope (R=0.19, p=0.42) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the QIDS score during the baseline phase, the results indicated that there was no correlation and therefore the QIDSm data is considered to be stable over the baseline period (tau=.271, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 3 did not show any clinically significant change in depression scores and was therefore classed as a *non-responder*.

3.4.3.2 Daily mania symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.14. Scores on the daily ARSM (mania symptomatology) measure for Participant 3

Table 15

Visual inspection of the daily ASRM data displayed in Figure 3.14

Phase	Mean mania score	Change in level	Trend
During the baseline phase	0.79	+1	No clear trend within the phase
During the training phase	0.5	+2	No clear trend within the phase
The change between the baseline phase and the training phase	-0.29	-1	No clear trend between the phases

The visual inspection (shown in Figure 3.14 and Table 15) concludes that there were no differences in the mean mania score between the phases. The changes in levels within and between the phases were difficult to interpret due to the variance in mood. There was no clear trends observed in the mania measure during the baseline phase, training phase or between the phases.

In line with the visual inspection, the Simulation Modeling Analysis confirmed that there was no difference in level (R=0.11, p=0.72) or slope (R=0.21, p=0.49) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the ASRM score during the baseline phase, the results indicated that there was no correlation therefore the ASRM data is considered to be stable over the baseline period (tau=.314, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 3 did not show any clinically significant change in mania scores and was therefore classed as a *non-responder*.

3.4.3.3 Additional Bipolar Disorder symptomatology data

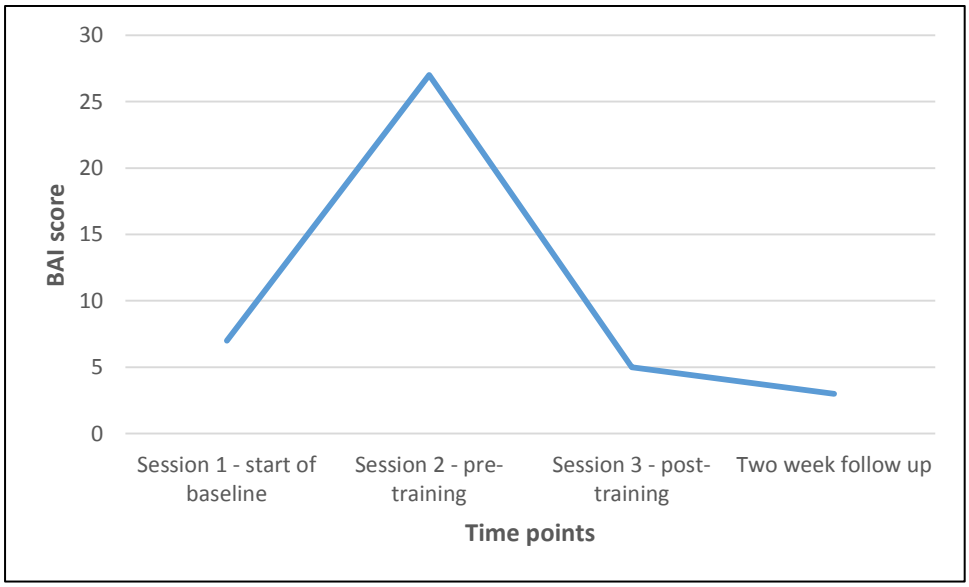


Figure 3.15. Scores on the BAI (anxiety symptomatology) at four time points for Participant 3

The results from the BAI scores indicate an increase in anxiety during the baseline phase. Once training commenced anxiety decreased, and then it continued to decrease to the two week follow up.

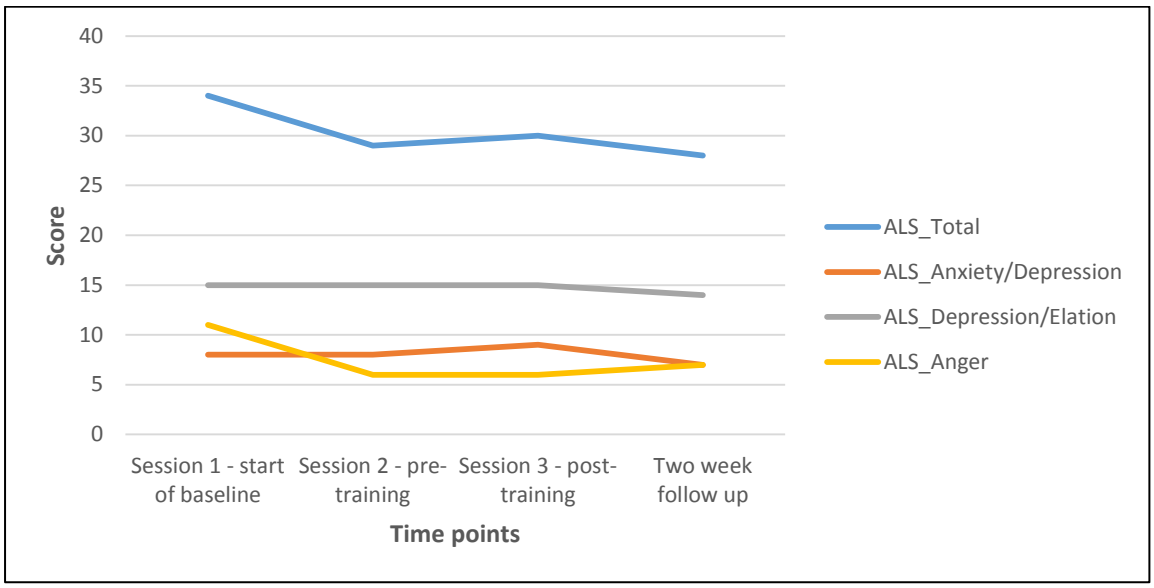


Figure 3.16. Scores on the ALS (affective lability) at four time points for Participant 3

The results from the ALS scores indicate a steady decrease in affective lability during the baseline phase and through to the two week follow up.

3.4.3.4 Decentering data

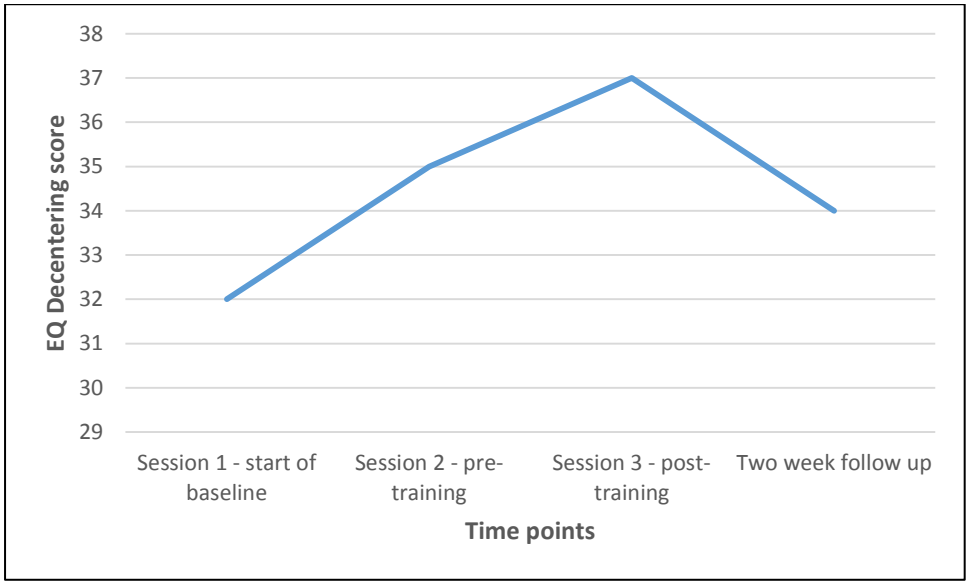


Figure 3.17. Scores on the EQ *Decentering* subscale at four time points for Participant 3

The results from the EQ *Decentering* subscale scores indicate an increase in the ability to *decenter* during the baseline phase, which continued into the training phase. However, by the two week follow up the ability to *decenter* appeared to have decreased.

3.4.3.5 Perspective taking data

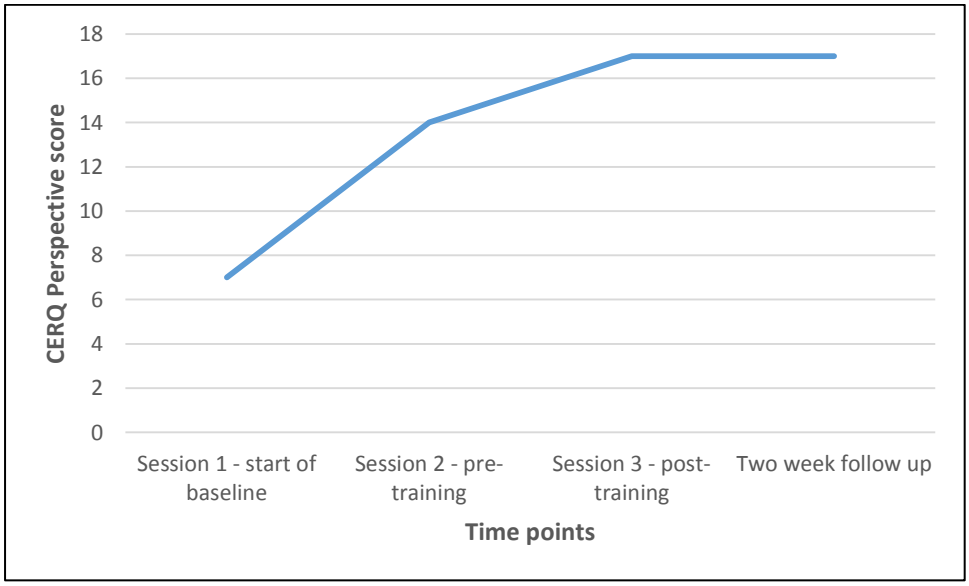


Figure 3.18. Scores on the CERQ Perspective taking subscale at four time points for Participant 3

The results from the CERQ perspective taking subscale scores indicate an increase in the ability to perspective-take during the baseline and training phases. This is maintained at the two week follow up.

3.4.3.6 Within-training idiographic STAGE data

Table 16

Participant 3's average ratings following each use of the STAGE technique.

	Session 2 scenarios	Homework	Session 3 scenarios	Session 3 memories	Overall average
Ease of SD	5.3	4.7	5	4.5	4.9
Ease of STAGE	4	4	4.3	4	4.1
Extent of use SD	6	4.3	4.3	4.5	4.8
Extent of use STAGE	3.5	3.8	4	4.5	4.0
Helpfulness of 'similar'	4	3.6	5	3	3.9
Helpfulness of 'time'	6	3.9	5.8	5	5.2
Helpfulness of 'areas'	4.5	2.9	2	4.5	3.5
Helpfulness of 'grey'	4.5	3.9	3.3	5	4.2
Helpfulness of 'else'	5	3.9	3.5	4.5	4.2
Helpfulness of imagery	4	3.3	3.5	3	3.5
Use of imagery	4.5	3.1	3.5	3	3.5
Change in distress	-1	-0.7	-1.5	-1.5	-1.2

Note: SD = Self-distancing, STAGE = STAGE strategies.

The results from idiographic ratings of the STAGE technique indicate that overall the technique was moderately easy to use and the strategies were helpful (with the 'time' strategy being the most helpful). Reductions in distress were reported throughout the training.

3.4.3.7 Exploratory pre-post data

Table 17

Participant 3's ratings of 'distress at the time' and 'distress at recall' for five emotional memories (on a 10cm line)

	Pre-training	Post-training	Used as training material?
M1 at time	8.6	7.6	No
M1 at recall	2.4	3.1	
M2 at time	7.2	8.1	Yes
M2 at recall	7	6.7	
M3 at time	7.7	8.2	No
M3 at recall	4.7	4.5	
M4 at time	8.1	6.6	Yes
M4 at recall	2.5	3.3	
M5 at time	8.8	8.7	Yes
M5 at recall	5.3	2.7	

Note: M1 = memory 1, M2 = memory 2, M3 = memory 3, M4 = memory 4, M5 = memory 5

The results from the distress ratings indicate that overall distress had reduced both for the reported distress at the time of the event taking place and for the distress at the time of recall in the sessions, although this was not the case for all of the memories. In addition to this, it appears that distress had partly reduced for memories (1 and 3) that had not been used in the training.

Table 18

Participant 3's average ratings of the extent and ease at which they were able to think of the positive and negative aspects of emotional scenarios/memories

	Pre-training	Post-training
Extent positive thinking	5	4.25
Ease positive thinking	5.25	4.5
Extent negative thinking	4.75	4.5
Ease negative thinking	5	5.75

The results from the positive and negative thinking ratings indicate positive thinking had decreased slightly and there had been few changes in negative thinking.

3.4.3.8 Summary of Participant 3

In summary, the analysis of the daily mood symptomatology data showed that participant 3 did not show a clinically significant change in depression scores or mania scores during the training, and therefore was a *non-responder*.

Participant 3's anxiety score rose considerably during the baseline phase; however, this did then decrease during the training phase. They also experienced a steady reduction in affective lability.

Participant 3 experienced steady increases in their *decentering* ability, although this was not maintained at the two-week follow up. They also experienced increases in their perspective taking ability which did maintain at the two-week follow up.

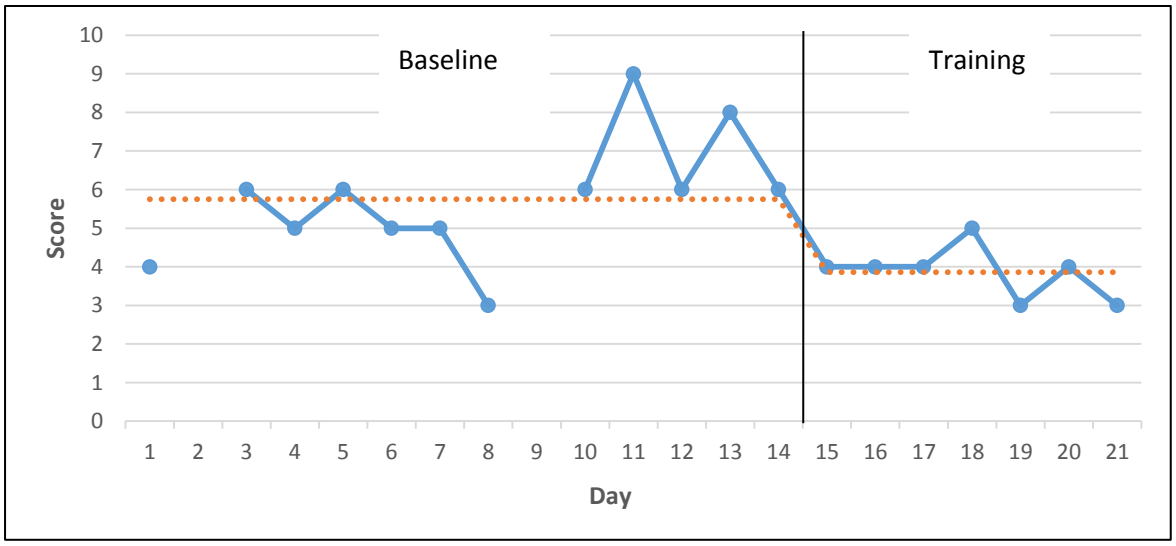
The within-training STAGE data showed that participant 3 appeared to get on relatively well with the training, and on average experienced reductions in distress. Exploratory pre-post data showed that participant 3 experienced reductions in distress related to their memories. However, reductions were experienced in the ease and extent of positive thinking from pre to post training.

Overall, participant 3 is a *non-responder*, but surprisingly they managed to greatly increase their *decentering* and perspective-taking abilities despite many other changes taking place.

3.4.4 Participant 4

Participant 4 is a 22-year-old white British female. She describes having experienced too many episodes of depression to count (code 99) and an unknown number of episodes of mania in her life. She has no previous experience of Cognitive Behavioural Therapy but has been attending a 45-minute Mindfulness class once a week for the past few months.

3.4.4.1 Daily depression symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.19. Scores on the QIDSm (depression symptomatology) measure for Participant 4

Table 19

Visual inspection of the daily QIDSm data displayed in Figure 3.19

Phase	Mean depression score	Change in level	Trend
During the baseline phase	5.75	+2	No clear trend within the phase
During the training phase	3.86	-1	No clear trend within the phase
The change between the baseline phase and the training phase	-1.89	-2	A slight decrease in trend between the phases

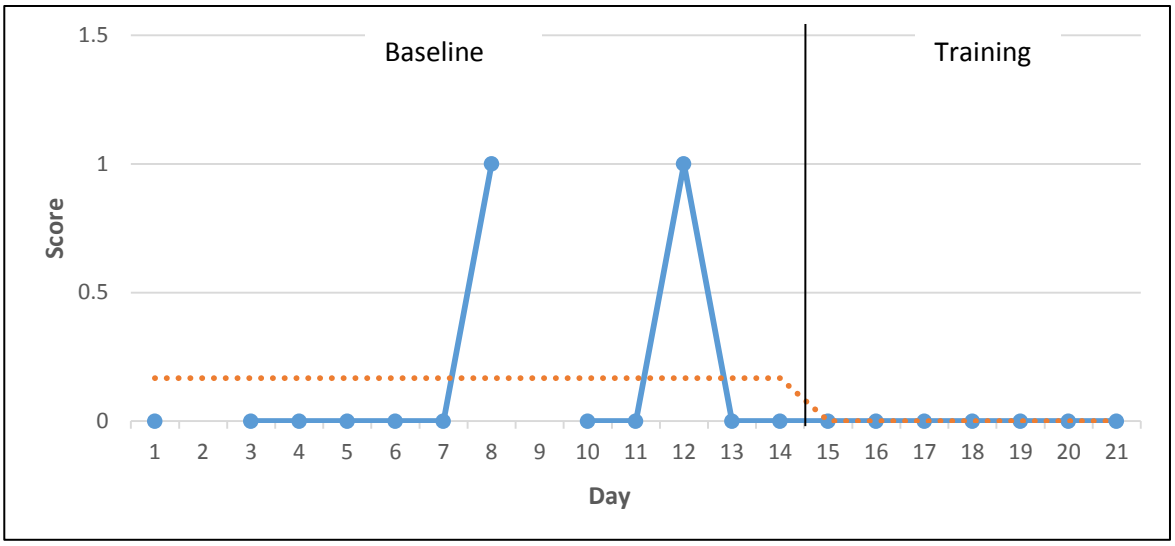
The visual inspection (shown in Figure 3.19 and Table 19) concludes that there was a reduction in the mean depression score (-1.89) between the phases. The changes in levels within and between the phases were small and difficult to interpret due to the variance in mood. No trends were observed in the depression measure in either the baseline or training phases and there was no change in trend between the phases.

In line with the visual inspection, Simulation Modeling Analysis showed that there was no difference in slope (R=0.15, p=0.67) between the two phases. However, the analysis did show a difference in level between the two phases was very close to signififant (R=0.58, p=0.058), therefore in line with the reduction in means that were observed above.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the QIDS score during the baseline phase, the results indicated that there was no correlation and that therefore the QIDSm data is considered to be stable over the baseline period (tau=.199, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 4 showed a clinically significant change (reduction) in depression scores as their mean depression during the training phase fell to 3.86 which is below the cut off score of 6 (mild depression) according to the unmodified version of the questionnaire (weekly version, not daily) (Rush, 2003), therefore fulfilling Kazdin's (2011) criteria. This is consistent with the significant difference in level results from the Simulation Modeling Analysis. Participant 4 can be classed as a *responder* in terms of depressive symptomatology.

3.4.4.2 Daily mania symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.20. Scores on the daily ARSM (mania symptomatology) measure for Participant 4

Table 20

Visual inspection of the daily ASRM data displayed in Figure 3.20

Phase	Mean mania score	Change in level	Trend
During the baseline phase	0.17	0	No clear trend within the phase
During the training phase	0	0	No clear trend within the phase
The change between the baseline phase and the training phase	-0.17	0	No clear trend between the phases

The visual inspection (shown in Figure 3.20 and Table 20) concludes that there were no differences in the mean mania score between the phases. There were no changes in levels within and between the phases. There was no clear trends observed in the mania measure during the baseline phase, training phase or between the phases. As can be seen from the graph, there was very little variance in mania symptoms with the participant only scoring a maximum of one on a given day.

In line with the visual inspection, the Simulation Modeling Analysis confirmed that there was no difference in level (R=0.23, p=0.26) or slope (R=0.01, p=0.96) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the ASRM score during the baseline phase, with the results indicating that there was no correlation and that therefore the ASRM data is considered to be stable over the baseline period (tau=.163, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 4 did not show any clinically significant change in mania scores and was therefore classed as a *non-responder*.

3.4.4.3 Additional Bipolar Disorder symptomatology data

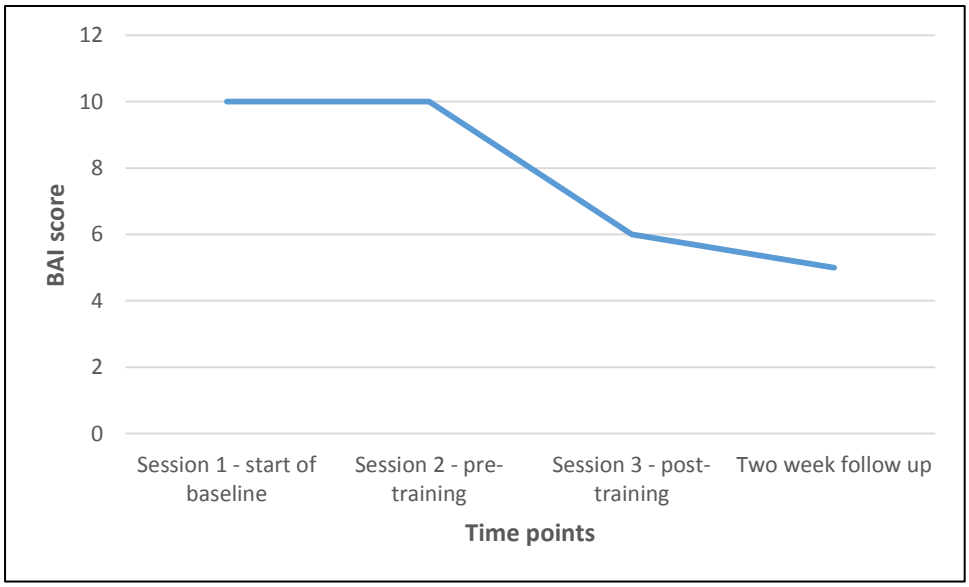


Figure 3.21. Scores on the BAI (anxiety symptomatology) at four time points for Participant 4

The results from the BAI scores indicate a gradual decrease in anxiety during the training phase and a continued decrease up to the two week follow up.

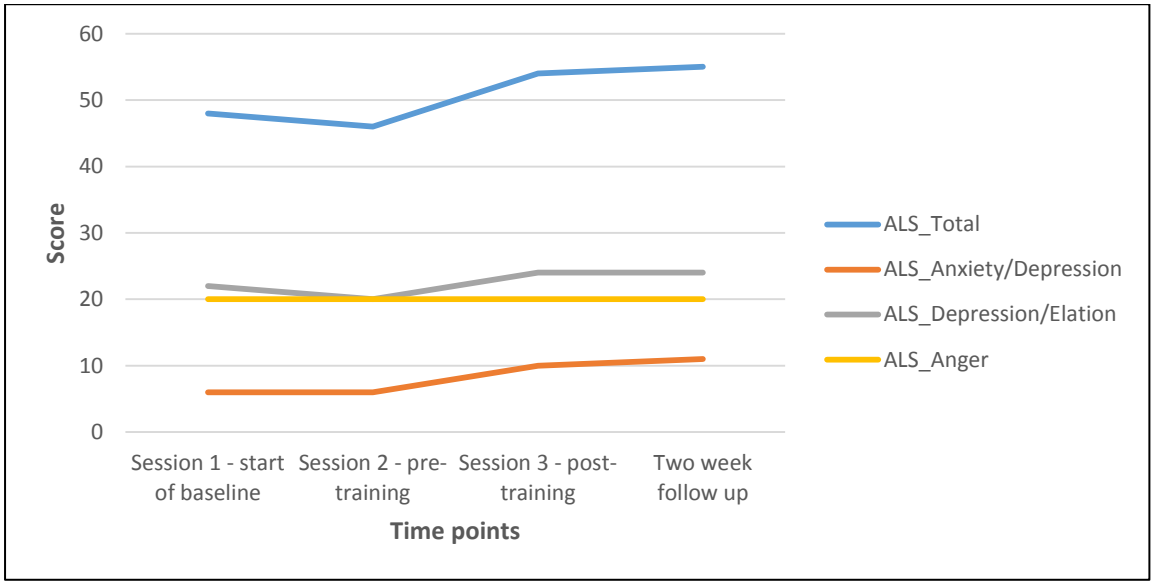


Figure 3.22. Scores on the ALS (affective lability) at four time points for Participant 4

The results from the ALS scores indicate an increase in affective lability during the training phase and through to the two week follow up.

3.4.4.4 Decentering data

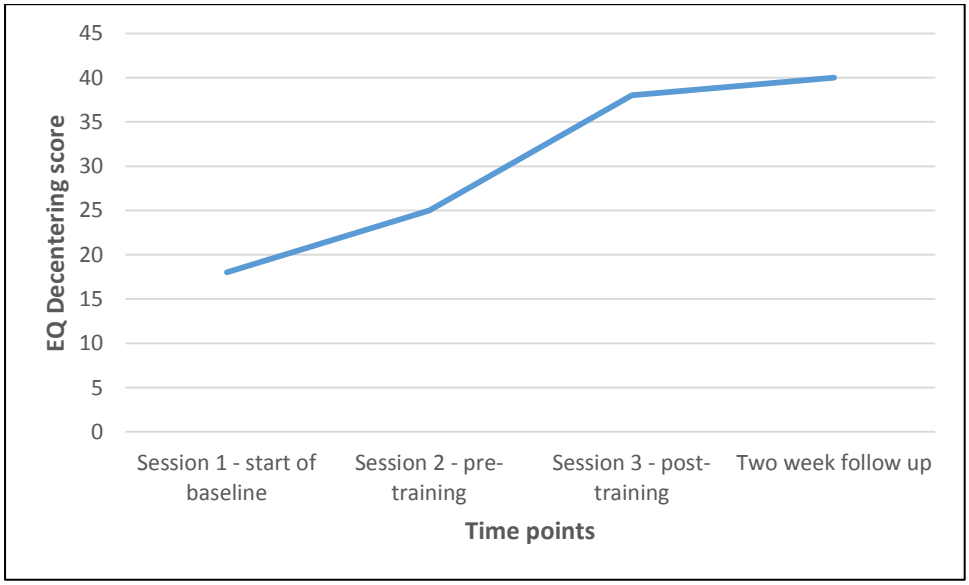


Figure 3.23. Scores on the EQ *Decentering* subscale at four time points for Participant 4

The results from the EQ *Decentering* subscale scores indicate an increase in the ability to *decenter* during the baseline phase, which continued into the training phase. This was maintained at the two week follow up.

3.4.4.5 Perspective taking data

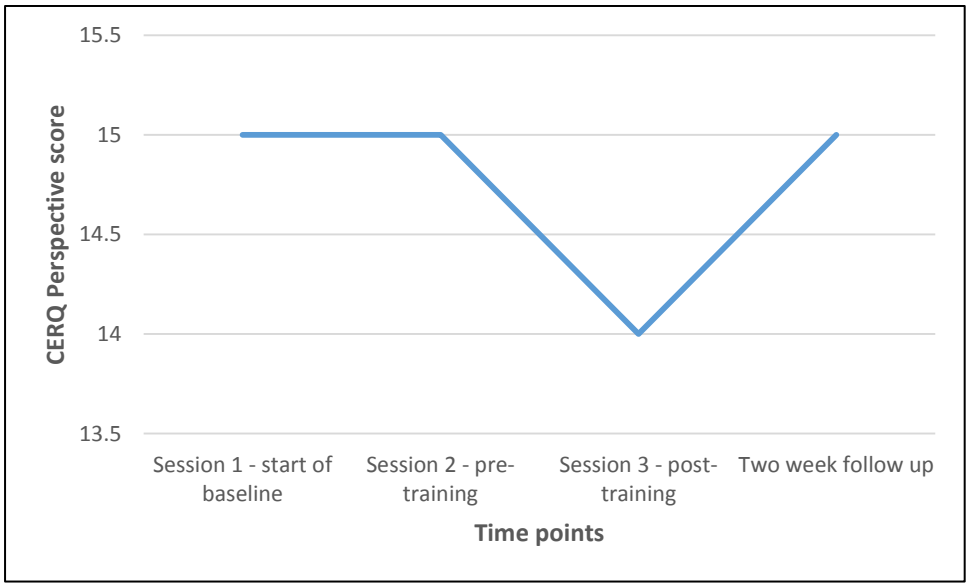


Figure 3.24. Scores on the CERQ Perspective taking subscale at four time points for Participant 4.

The results from the CERQ perspective taking subscale scores indicate only a one-point change in the ability over the study.

3.4.4.6 Within-training idiographic STAGE data

Table 21

Participant 4's average ratings following each use of the STAGE technique.

	Session 2 scenarios	Homework	Session 3 scenarios	Session 3 memories	Overall average
Ease of SD	5.3	5	5.8	6.5	5.7
Ease of STAGE	4.8	5.1	5.5	6.5	5.5
Extent of use SD	5.5	4.8	5.5	6	5.5
Extent of use STAGE	5.3	5	5.5	6	5.5
Helpfulness of 'similar'	4.8	5.2	6	1.5	4.4
Helpfulness of 'time'	5	4.7	3.8	6	4.9
Helpfulness of 'areas'	3.3	4.5	3.8	4	3.9
Helpfulness of 'grey'	6	5.9	4.5	4.5	5.2
Helpfulness of 'else'	6.5	6.5	6	7	6.5
Helpfulness of imagery	5.3	4.7	5.8	6	5.5
Use of imagery	7.3	6	7.8	8.5	7.4
Change in distress	-3.5	-3.1	-2.3	-4	-3.2

Note: SD = Self-distancing, STAGE = STAGE strategies.

The results from idiographic ratings of the STAGE technique indicate that overall the technique was easy to use and the strategies were helpful (with the 'else' strategy being the most helpful). Reductions in distress were reported throughout the training.

3.4.4.7 Exploratory pre-post data

Table 22

Participant 4's ratings of 'distress at the time' and 'distress at recall' for five emotional memories (on a 10cm line)

	Pre-training	Post-training	Used as training material?
M1 at time	10	7.8	Yes
M1 at recall	5.4	3.4	
M2 at time	8.4	7.2	No
M2 at recall	4.7	5.2	
M3 at time	6.8	6.4	Yes
M3 at recall	5.2	1.8	
M4 at time	8.8	7.5	Yes
M4 at recall	6.4	2.9	
M5 at time	9.2	6.7	No
M5 at recall	5	3.7	

Note: M1 = memory 1, M2 = memory 2, M3 = memory 3, M4 = memory 4, M5 = memory 5

The results from the distress ratings indicate that overall distress had reduced both for the reported distress at the time of the event taking place and for the distress at the time of recall in the sessions. In addition to this, it appears that distress had partly reduced for memories (2 and 5) that had not been used in the training.

Table 23

Participant 4's average ratings of the extent and ease at which they were able to think of the positive and negative aspects of emotional scenarios/memories

	Pre-training	Post-training
Extent positive thinking	3.75	4.75
Ease positive thinking	4.25	4.5
Extent negative thinking	5	4.25
Ease negative thinking	5.5	5

The results from the positive and negative thinking ratings indicate an increase in positive thinking and a decrease in negative thinking.

3.4.4.8 Summary of Participant 4

In summary, the analysis of the daily mood symptomatology data showed that participant 4 experienced a clinically significant reduction in depression scores but no clinically significant changes in mania scores during the training. Therefore, participant 4 is classed as a *responder* in terms of depression symptoms and a *non-responder* in terms of mania symptoms.

Participant 4's anxiety score decreased during training phase and this continued to the two week follow up. They also experienced an increase in affective lability.

Participant 4 experienced steady increases in their *decentering* ability, which continued to the two-week follow up, but no changes in their perspective taking ability.

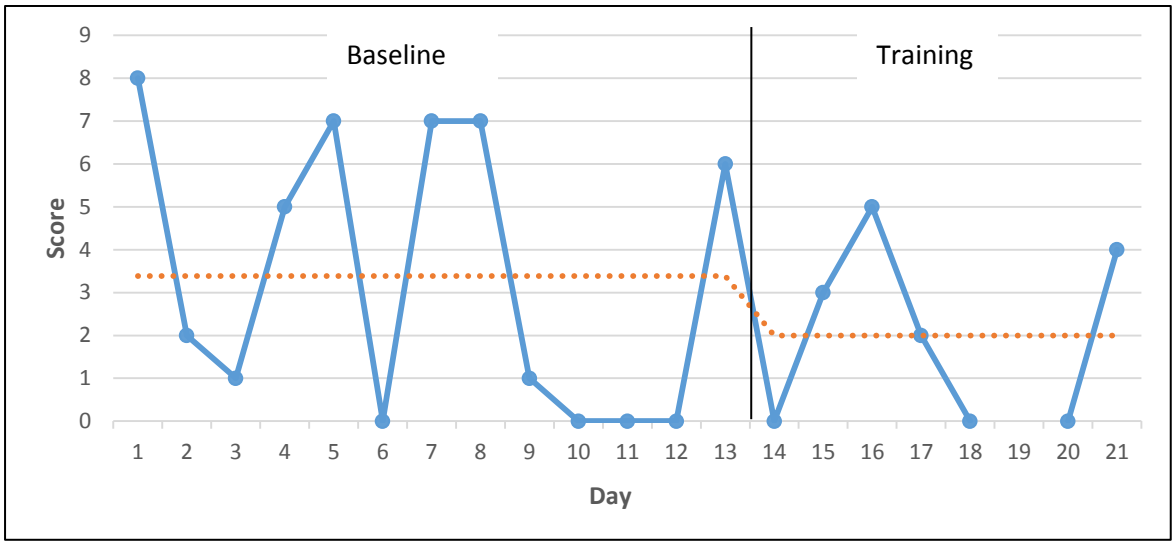
The within-training STAGE data showed that participant 4 appeared to get on well with the training, and on average experienced reductions in distress. Exploratory pre-post data showed that participant 4 experienced reductions in distress related to their memories. They also experienced increases in positive thinking and decreases in negative thinking from pre- to post-training.

Overall, participant 4 is a *responder* in terms of depression change and gained many other benefits from the training which included an increased ability to *decenter*.

3.4.5 Participant 5

Participant 5 is a 36-year-old North Africa female. She describes having experienced four episodes of depression and mania in her life. She has experience of Cognitive Behavioural Therapy (one group and a couple of individual sessions, said she did not get on well with it) and she uses Mindfulness when she needs it.

3.4.5.1 Daily depression symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.25. Scores on the QIDSm (depression symptomatology) measure for Participant 5

Table 24

Visual inspection of the daily QIDSm data displayed in Figure 3.25

Phase	Mean depression score	Change in level	Trend
During the baseline phase	3.38	-2	No clear trend within the phase
During the training phase	2	+4	No clear trend within the phase
The change between the baseline phase and the training phase	-1.38	-7	A slight decrease in trend between the phases

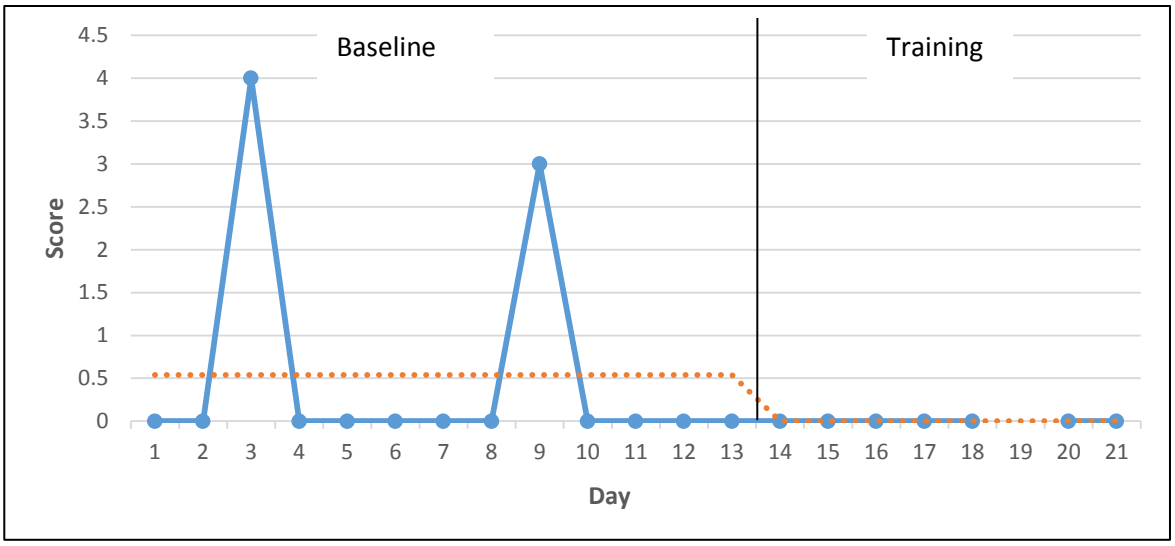
The visual inspection (shown in Figure 3.25 and Table 24) concludes that there was a reduction in the mean depression score (-1.38) between the phases. The changes in levels within and between the phases were difficult to interpret due to the large variance in mood. No trends were observed in the depression measure in either the baseline or training phases, however a slight decrease in trend was observed between the phases.

In line with the visual inspection, Simulation Modeling Analysis showed that there was no differences in level (R=0.21, p=0.37) or slope (R=0.33, p=0.15) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the QIDS score during the baseline phase, the results indicated that there was no correlation and that therefore the QIDSm data is considered to be stable over the baseline period (tau=.330, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 5 showed no clinically significant change in depression scores and is therefore classed as a *non-responder*.

3.4.5.2 Daily mania symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.26. Scores on the daily ARSM (mania symptomatology) measure for Participant 5

Table 25

Visual inspection of the daily ASRM data displayed in Figure 3.26

Phase	Mean mania score	Change in level	Trend
During the baseline phase	0.54	0	No clear trend within the phase
During the training phase	0	0	No clear trend within the phase
The change between the baseline phase and the training phase	-0.54	0	No clear trend between the phases

The visual inspection (shown in Figure 3.26 and Table 25) concludes that there were no differences in the mean mania score between the phases. There were no changes in levels within and between the phases. There was no clear trends observed in the mania measure during the baseline phase, training phase or between the phases. As can be seen from the graph, there was very little variance in mania symptoms with the participant only scoring higher than zero on two days.

In line with the visual inspection, the Simulation Modeling Analysis confirmed that there was no difference in level (R=0.25, p=0.22) or slope (R=0.22, p=0.30) between the two phases.

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the ASRM score during the baseline phase, the results indicated that there was no correlation and that therefore the ASRM data is considered to be stable over the baseline period (tau=.118, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 5 did not show any clinically significant change in mania scores and was therefore classed as a *non-responder*.

3.4.5.3 Additional Bipolar Disorder symptomatology data

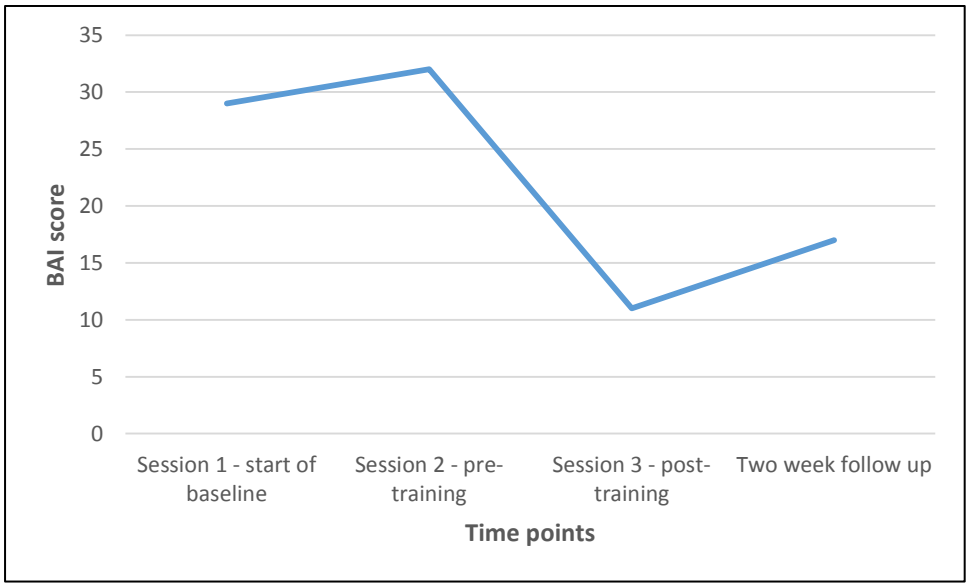


Figure 3.27. Scores on the BAI (anxiety symptomatology) at four time points for Participant 5

The results from the BAI scores indicate a decrease in anxiety during the training phase, however this rose again up to the two week follow up.

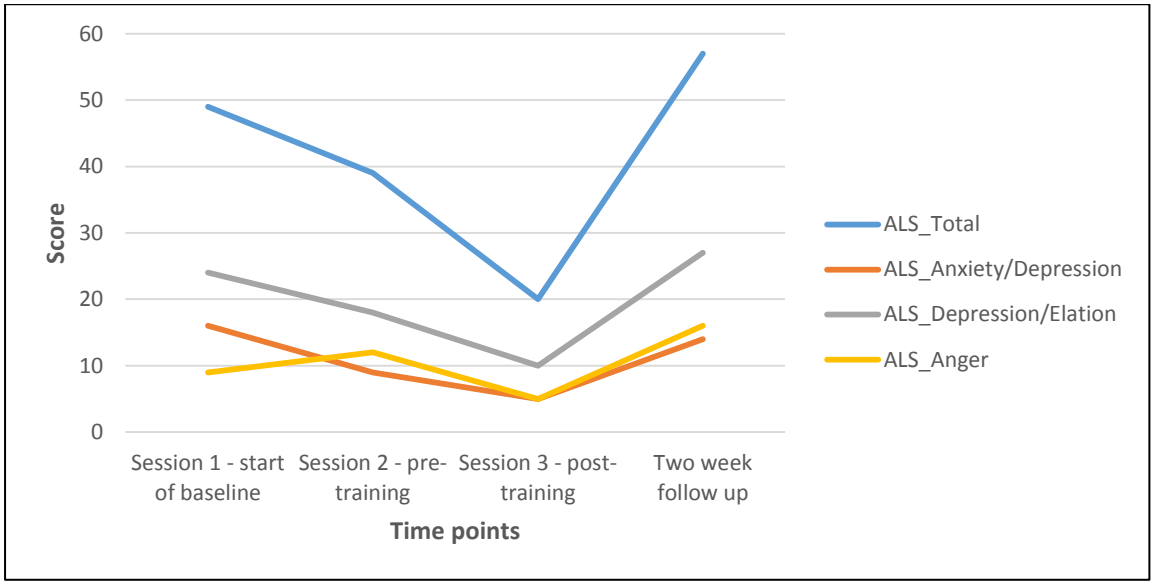


Figure 3.28. Scores on the ALS (affective lability) at four time points for Participant 5

The results from the ALS scores indicate a decrease in affective lability during the baseline and training phase. However, this rose high than baseline at the two week follow up.

3.4.5.4 Decentering data

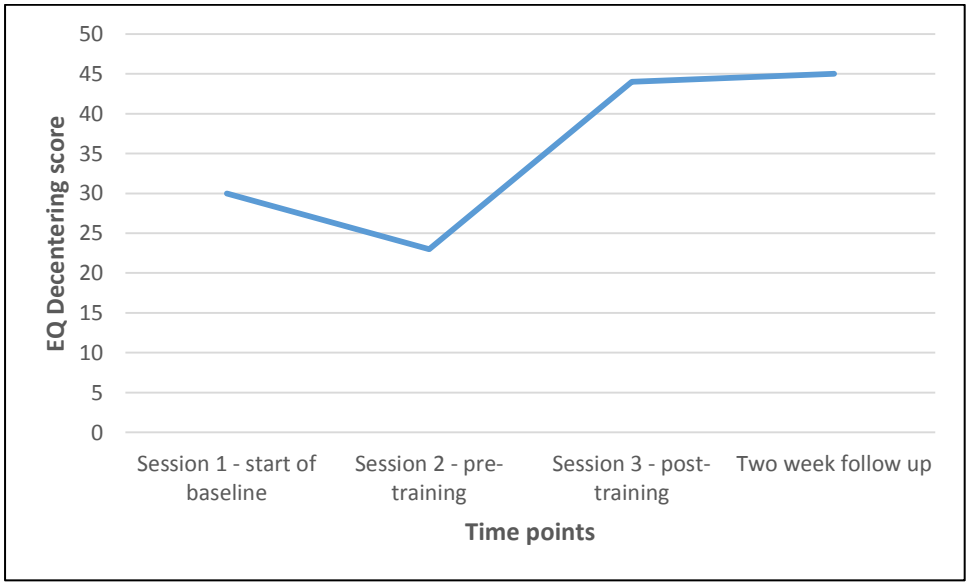


Figure 3.29. Scores on the EQ *Decentering* subscale at four time points for Participant 5

The results from the EQ *Decentering* subscale scores indicate an increase in the ability to *decenter* during the training phase. This was maintained at the two week follow up.

3.4.5.5 Perspective taking data

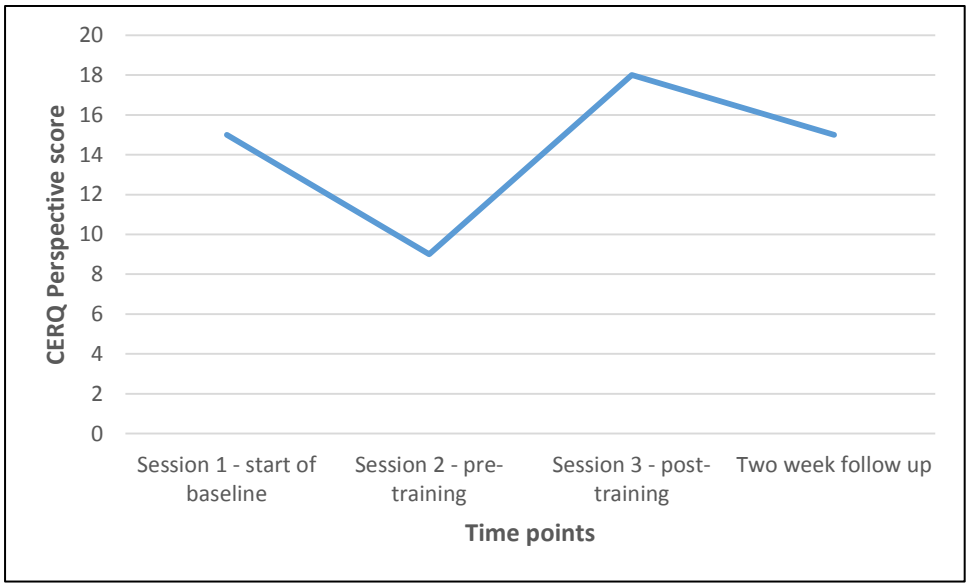


Figure 3.30. Scores on the CERQ Perspective taking subscale at four time points for Participant 5.

The results from the CERQ perspective taking subscale scores indicate a decrease in the ability to perspective-take during the baseline phase, an increase during the training phase, and then a decrease again at the two week follow up.

3.4.5.6 Within-training idiographic STAGE data

Table 26

Participant 5's average ratings following each use of the STAGE technique.

	Session 2 scenarios	Homework	Session 3 scenarios	Session 3 memories	Overall average
Ease of SD	6	3.9	5.5	6	5.4
Ease of STAGE	5.8	4.3	5	5.5	5.2
Extent of use SD	6.3	4.2	4.8	5.5	5.2
Extent of use STAGE	6	4.2	5	5.5	5.2
Helpfulness of 'similar'	5	3.8	5.8	5.5	5.0
Helpfulness of 'time'	6	4.7	5.5	5.5	5.4
Helpfulness of 'areas'	5.8	4.2	5	6	5.3
Helpfulness of 'grey'	5.5	4	5	5.5	5.0
Helpfulness of 'else'	6	4.5	5.5	5.5	5.4
Helpfulness of imagery	5.5	4	5.3	6	5.2
Use of imagery	7.8	5.2	7.3	8	7.1
Change in distress	-3	0.3	-2.1	-2.5	-1.8

Note: SD = Self-distancing, STAGE = STAGE strategies.

The results from idiographic ratings of the STAGE technique indicate that overall the technique was easy to use and the strategies were helpful (with the 'time' and 'else' strategies being the most helpful). Reductions in distress were reported throughout the training.

3.4.5.7 Exploratory pre-post data

Table 27

Participant 5's ratings of 'distress at the time' and 'distress at recall' for five emotional memories (on a 10cm line)

	Pre-training	Post-training	Used as training material?
M1 at time	10	7.5	Yes
M1 at recall	7.7	1.2	
M2 at time	9.9	7.7	No
M2 at recall	9.3	1.7	
M3 at time	8.6	8.5	Yes
M3 at recall	7.5	0.7	
M4 at time	8.5	9	Yes
M4 at recall	8.8	4.8	
M5 at time	8.1	9.1	No
M5 at recall	5.5	0.9	

Note: M1 = memory 1, M2 = memory 2, M3 = memory 3, M4 = memory 4, M5 = memory 5

The results from the distress ratings indicate that overall distress had reduced both for the reported distress at the time of the event taking place and for the distress at the time of recall in the sessions. In addition to this, it appears that distress had partly reduced for memories (2 and 5) that had not been used in the training.

Table 28

Participant 5's average ratings of the extent and ease at which they were able to think of the positive and negative aspects of emotional scenarios/memories

	Pre-training	Post-training
Extent positive thinking	1.5	4.75
Ease positive thinking	1.75	4.75
Extent negative thinking	5.5	2.5
Ease negative thinking	6	2.5

The results from the positive and negative thinking ratings indicate an increase in positive thinking and a decrease in negative thinking.

3.4.5.8 Summary of Participant 5

In summary, the analysis of the daily mood symptomatology data showed that participant 5 did not experience a clinically significant change in depression or mania scores, and therefore is classed as a *non-responder*.

Participant 5's anxiety and affective lability scores decreased during training phase but began to increase at the two week follow up.

Participant 5 experienced steady increases in their *decentering* ability and this was maintained at the two-week follow up. They also experienced increases in their perspective taking ability but this was not maintained at the two-week follow up.

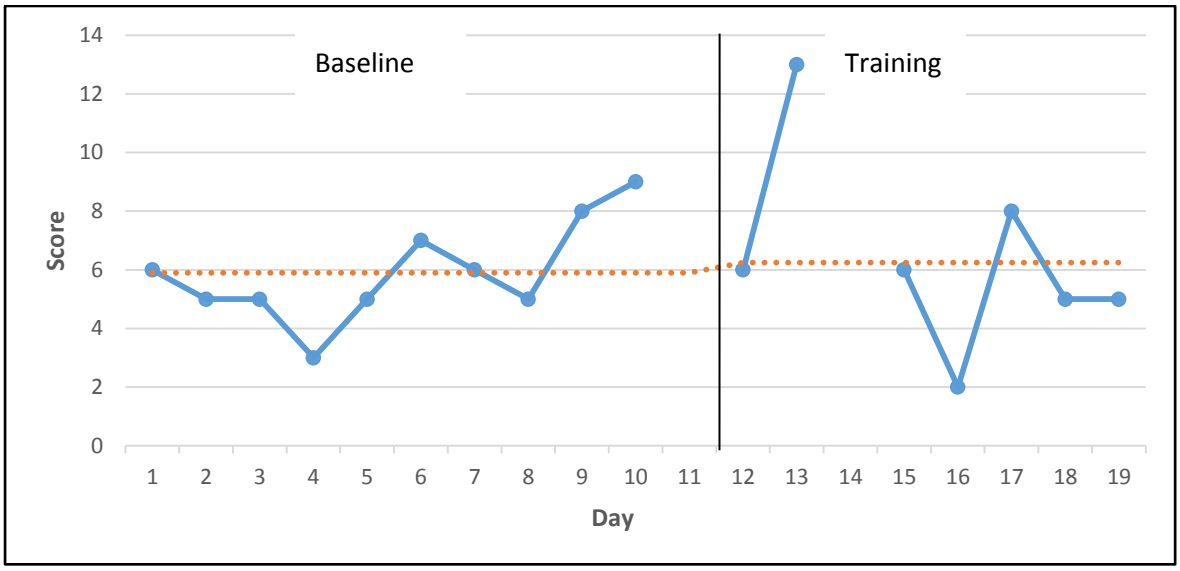
The within-training STAGE data showed that participant 5 appeared to get on well with the training, and on average experienced reductions in distress. Exploratory pre-post data showed that participant 5 experienced reductions in distress related to their memories. They also experienced increases in positive thinking and decreases in negative thinking from pre to post training.

Overall, participant 5 is a *non-responder* in terms of depression and mania change, however they gained many other benefits from the training which included a decrease in anxiety and an increased ability to *decenter*.

3.4.6 Participant 6

Participant 6 is a 28-year-old Middle Eastern male. He describes having experienced two episodes of depression and one episode of mania in his life. He has no experience of Cognitive Behavioural Therapy and does have experience of Mindfulness (he meditates daily but refers to it as meditation not mindfulness).

3.4.6.1 Daily depression symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.31. Scores on the QIDSm (depression symptomatology) measure for Participant 6

Table 29

Visual inspection of the daily QIDSm data displayed in Figure 3.31

Phase	Mean depression score	Change in level	Trend
During the baseline phase	5.90	+3	A slight increase in trend within the phase
During the training phase	6.25	-1	A slight decrease in trend within the phase
The change between the baseline phase and the training phase	+0.35	-3	No clear trend between the phases

The visual inspection (shown in Figure 3.31 and Table 29) concludes that there was a a slight increase in the mean depression score (+0.35) between the phases. The changes in levels within and between the phases were difficult to interpret due to the large variance in mood. A slight increase trend was observed in the baseline phase and a slight decrease trend was observed in the training phase in the depression measure. No trends were observed in the depression measure between the phases.

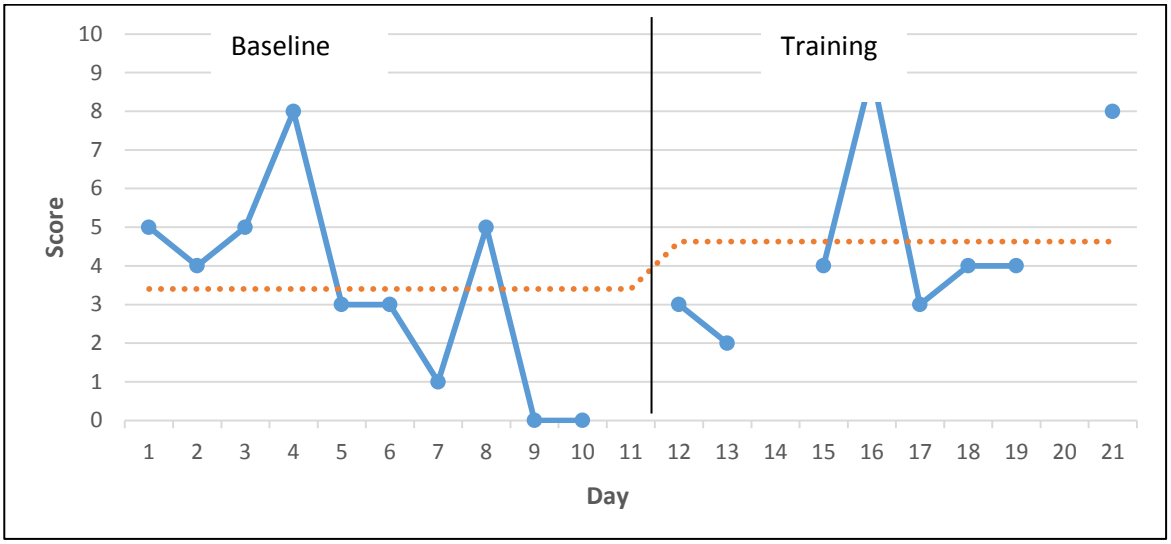
In line with the visual inspection, Simulation Modeling Analysis showed that there was no difference in level (R=0.07, p=0.79) between the two phases. The analysis also showed that the difference in slope between the two phases was very close to significance (R=0.47, p=0.0498).

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the QIDS score during the baseline phase, the results indicated

that there was no correlation therefore the QIDSm data is considered to be stable over the baseline period (tau=.435, p>.05). This confirmed the lack of trend observed in the visual inspection.

Overall, participant 6 showed no clinically significant change in depression scores and is therefore classed as a *non-responder*.

3.4.6.2 Daily mania symptomatology data



Note: The solid line represents the raw data and the dotted line represents the mean data.

Figure 3.32. Scores on the daily ARSM (mania symptomatology) measure for Participant 6

Table 30

Visual inspection of the daily ASRM data displayed in Figure 3.32

Phase	Mean mania score	Change in level	Trend
During the baseline phase	3.40	-5	A slight decrease trend within the phase
During the training phase	4.63	+5	A slight increase trend within the phase
The change between the baseline phase and the training phase	+1.23	+3	No clear trend between the phases

The visual inspection (shown in Figure 3.32 and Table 30) concludes that there was a slight increase in the mean mania scores between the phases. There was a slight decrease in level during the baseline phase and increase in the training phase. There was a slight decrease trend within the baseline phase and increase trend within the training phase observed in the mania measure. No trends were observed in the mania measure between the phases.

In line with the visual inspection, the Simulation Modeling Analysis confirmed that there was no difference in level (R=0.25, p=0.38) between the two phases. The analysis also showed that the difference in slope between the two phases was very close to significance (R=0.52, p=0.0462).

Kendall's tau correlation was run to determine whether there was a relationship between time (days) and the ASRM score during the baseline phase, the results indicated

that there was a significant negative correlation therefore the ASRM data is not considered to be stable over the baseline period (tau=.566, p=0.28).

Overall, participant 6 did not show any clinically significant change in mania scores and was therefore classed as a *non-responder*.

3.4.6.3 Additional Bipolar Disorder symptomatology data

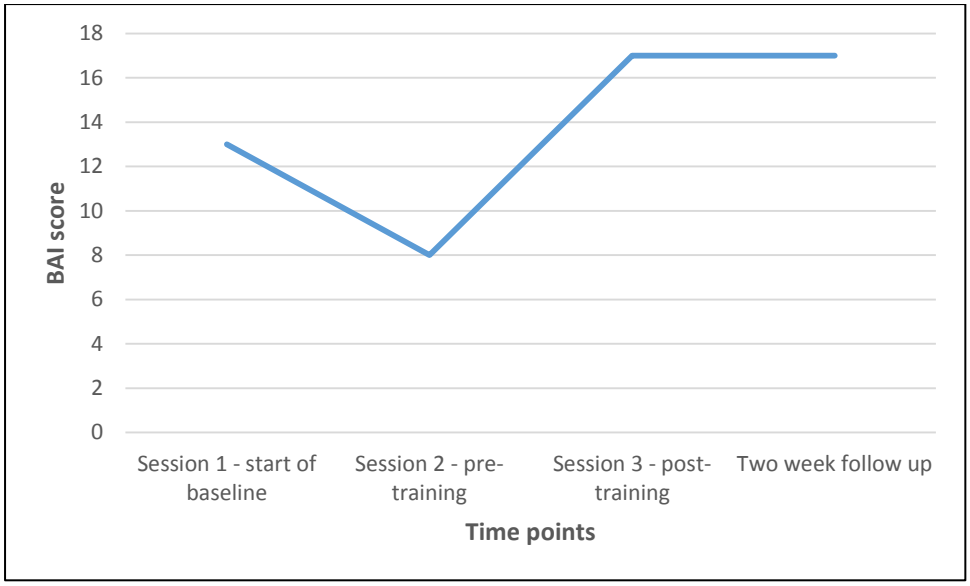


Figure 3.33. Scores on the BAI (anxiety symptomatology) at four time points for Participant 6

The results from the BAI scores indicate an increase in anxiety during the training phase, which maintained at the two-week follow up.

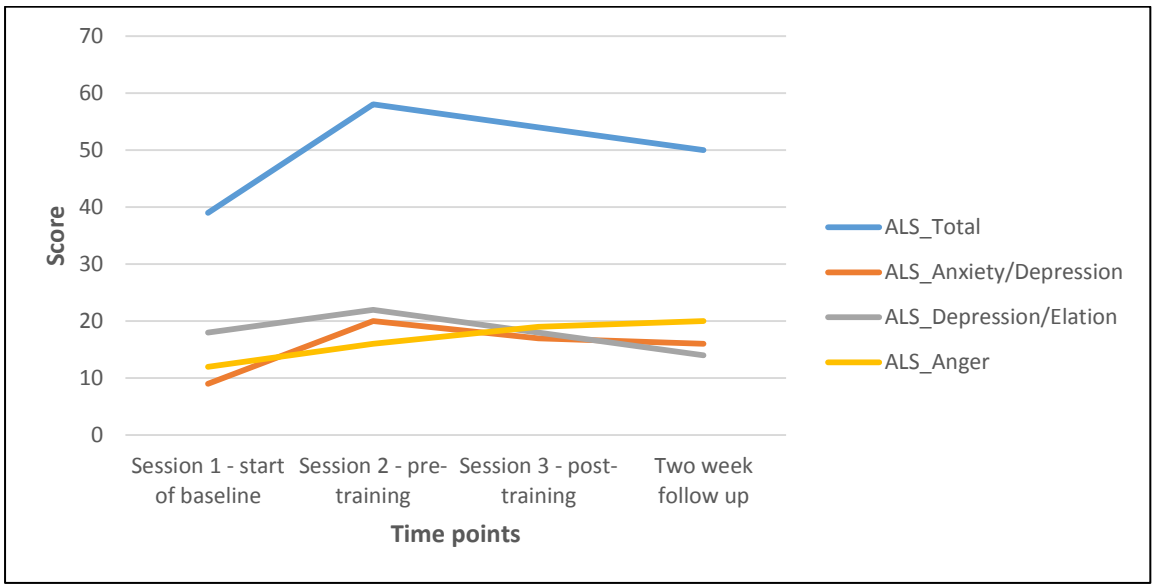


Figure 3.34. Scores on the ALS (affective lability) at four time points for Participant 6

The results from the ALS scores indicate a decrease in affective lability during the training phase, which continued to decrease to the two week follow up.

3.4.6.4 Decentering data

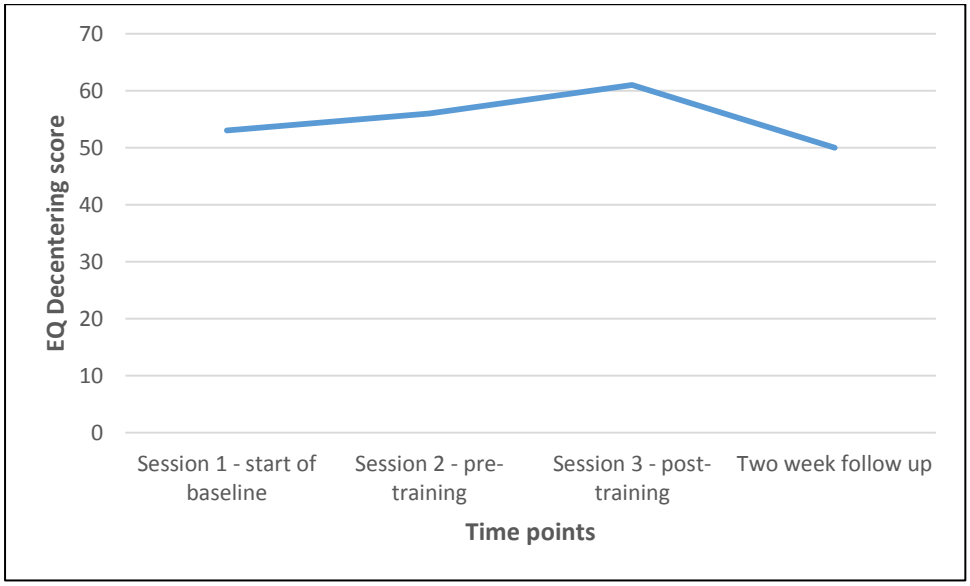


Figure 3.35. Scores on the EQ *Decentering* subscale at four time points for Participant 6

The results from the EQ *Decentering* subscale scores indicate an increase in the ability to *decenter* during the training phase. This was not maintained at the two week follow up.

3.4.6.5 Perspective taking data

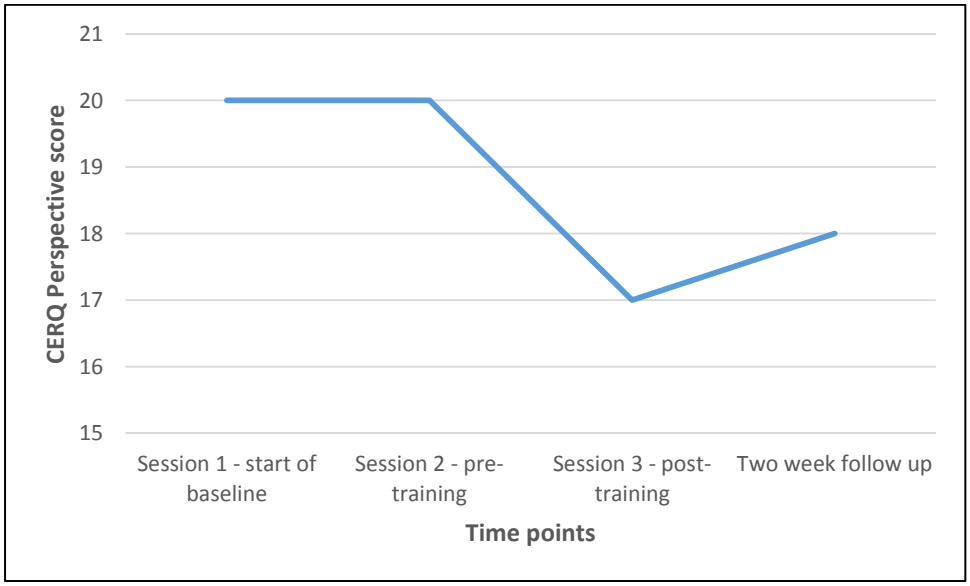


Figure 3.36. Scores on the CERQ Perspective taking subscale at four time points for Participant 6.

The results from the CERQ perspective taking subscale scores indicate a decrease in the ability to perspective-take during the training phase, which then increased slightly at the two week follow up.

3.4.6.6 Within-training idiographic STAGE data

Table 31

Participant 6's average ratings following each use of the STAGE technique.

	Session 2 scenarios	Homework	Session 3 scenarios	Session 3 memories	Overall average
Ease of SD	5.25	4.92	5.5	7	5.7
Ease of STAGE	5.5	5.83	5.75	6.5	5.9
Extent of use SD	4.75	5	5.5	7	5.6
Extent of use STAGE	5.5	5.92	6	6.5	6.0
Helpfulness of 'similar'	5.5	5.58	6	7	6.0
Helpfulness of 'time'	4.5	4.92	5.5	6	5.2
Helpfulness of 'areas'	5.25	5.83	7	6.5	6.1
Helpfulness of 'grey'	5.25	5.42	5	7	5.7
Helpfulness of 'else'	5.5	6.08	6.5	6.5	6.1
Helpfulness of imagery	6	5.5	5.75	6.5	5.9
Use of imagery	8.25	7.83	7.75	9	8.2
Change in distress	-2.5	0.83	-2.75	-2.5	-1.7

Note: SD = Self-distancing, STAGE = STAGE strategies.

The results from idiographic ratings of the STAGE technique indicate that overall the technique was easy to use and the strategies were helpful (with the 'areas' and 'else' strategies being the most helpful). Reductions in distress were reported throughout the training, except during the homework tasks.

3.4.6.7 Exploratory pre-post data

Table 32

Participant 6's ratings of 'distress at the time' and 'distress at recall' for five emotional memories (on a 10cm line)

	Pre-training	Post-training	Used as training material?
M1 at time	0	3.1	Yes
M1 at recall	2.7	6.3	
M2 at time	6.1	8.1	No
M2 at recall	0.8	0.2	
M3 at time	3.8	5.3	Yes
M3 at recall	3.9	2.4	
M4 at time	8.8	9	Yes
M4 at recall	4.5	7	
M5 at time	0.4	1.8	No
M5 at recall	5.3	1.3	

Note: M1 = memory 1, M2 = memory 2, M3 = memory 3, M4 = memory 4, M5 = memory 5

The results from the distress ratings indicate that distress had both reduced and increased for the reported distress at the time of the event taking place and for the distress at the time of recall in the sessions. This was irrespective of whether the memory had been used as training material.

Table 33

Participant 6's average ratings of the extent and ease at which they were able to think of the positive and negative aspects of emotional scenarios/memories

	Pre-training	Post-training
Extent positive thinking	3.75	4.75
Ease positive thinking	5	5
Extent negative thinking	4.5	4
Ease negative thinking	4.5	4

The results from the positive and negative thinking ratings indicate an increase in positive thinking and a decrease in negative thinking.

3.4.6.8 Summary of Participant 6

In summary, the analysis of the daily mood symptomatology data showed that participant 6 did not experience a clinically significant change in depression or mania scores, therefore is classed as a *non-responder*.

Participant 6's anxiety scores increased during the training phase, and his affective lability scores decreased during the training phase.

Participant 6 experienced steady increases in their *decentering* ability but this was not maintained at the two-week follow up. They experienced decreases in their perspective taking ability during the training phase but this increased at the two-week follow up.

The within-training STAGE data showed that participant 6 appeared to get on well with the training, and on average experienced reductions in distress. Exploratory pre-post data showed that participant 6 experienced reductions and increases in distress related to their memories. They experienced increases in positive thinking and decreases in negative thinking from pre to post training.

Overall, participant 6 is a *non-responder* in terms of depression and mania change, however they gained some other benefits from the training which included a decrease in affective lability, increases in positive thinking and decreases in negative thinking.

3.5 Reliable and clinical change

3.5.1 Reliable and clinical change in anxiety

The RCI and CSC were calculated for the BAI using clinical norms data from Williams et al. (2008)(based on nine participants in the pre-MBCT group) and healthy norms data from Creamer, Foran and Bell (1995)(based on 326 participants). The RCI was calculated to be 9.49 and the CSC was calculated to be 12.92. Based on the RCI criteria, participants 3 and 5 reached reliable change pre-post, and participants 2, 3 and 5 reached reliable change pre-follow up. Based on the CSC criteria, participants 3 and 5 reached clinical change pre-post, and participant 3 reached clinical change pre-follow up.

Table 34

Reliable and clinical change for anxiety

Participant	BAI Pre-training	BAI Post-training	BAI Follow-up	Reliable change pre-post?	Reliable change pre-FU?	Clinical change pre-post?	Clinical change pre-FU?
1	19	14	13	no	no	no	no
2	33	29	19	no	yes	no	no
3	27	5	3	yes	yes	yes	yes
4	10	6	5	no	no	n/a	n/a
5	32	11	17	yes	yes	yes	no
6	8	17	17	no	no	n/a	n/a

Note: The raw scores presented above were compared with the BAI RCI score of 9.49 and the CSC score of 12.92. If the participants change score between pre-post or pre-follow up was greater than the RCI score, then they were marked with a 'yes'. If the participants post or follow up score was less than the CSC score, then they were marked with a 'yes'. Participants will be marked with a 'no' if they do not fulfil criteria or if the change is not in the beneficial direction (as to not confuse the results). FU = follow up, n/a = not applicable as the participant's pre-training score was already lower than CSC value.

3.5.2 Reliable and clinical change in affective lability

The RCI and CSC were calculated for the ALS using clinical norms data and healthy norms data from Kitsune et al. (2015) (based on 75 female participants with BD and 120 healthy control female participants). The RCI was calculated to be 20.47 and the CSC was calculated to be 28.28. Based on these criteria, there were no participants that reached reliable or clinical change pre-post or pre-follow up, except participant 5 reached clinical change pre-post.

Table 35

Reliable and clinical change for affective lability

Participant	ALS Pre-training	ALS Post-training	ALS Follow-up	Reliable change pre-post?	Reliable change pre-FU?	Clinical change pre-post?	Clinical change pre-FU?
1	40	43	42	no	no	no	no
2	39	31	31	no	no	no	no
3	29	30	28	no	no	no	no
4	46	54	55	no	no	no	no
5	39	20	57	no	no	yes	no
6	58	54	50	no	no	no	no

Note: The raw scores presented above were compared with the ALS RCI score of 20.47 and the CSC score of 28.28. If the participants change score between pre-post or pre-follow up was greater than the RCI score, then they were marked with a 'yes'. If the participants post or follow up score was less than the CSC score, then they were marked with a 'yes'. (FU = follow up). Participants will be marked with a 'no' if they do not fulfil criteria or if the change is not in the beneficial direction (as to not confuse the results). FU = follow up.

3.5.3 Reliable and clinical change in *decentering*

The RCI and CSC were calculated for the EQ *decentering* subscale using healthy norms data only as there were no clinical norms data available in the literature. The healthy norms data was from Study one of Hill (2013) and was based on 35 participants. The RCI was calculated to be 9.97 and the CSC was calculated to be 60.50. Based on the RCI criteria, participants 4 and 5 reached reliable change pre-post and pre-follow up. Based on the CSC criteria, participant 1 reached clinical change pre-post.

Table 36

Reliable and clinical change for decentering

Participant	EQ decentering Pre-training	EQ decentering Post-training	EQ decentering Follow-up	Reliable change pre-post?	Reliable change pre-FU?	Clinical change pre-post?	Clinical change pre-FU?
1	37	43	33	no	no	no	no
2	43	44	40	no	no	no	no
3	35	37	34	no	no	no	no
4	25	38	40	yes	yes	no	no
5	23	44	45	yes	yes	no	no
6	56	61	50	no	no	yes	no

Note: The raw scores presented above were compared with the EQ decentering RCI score of 9.97 and the CSC score of 60.50. If the participants change score between pre-post or pre-follow up was greater than the RCI score, then they were marked with a 'yes'. If the participants post or follow up score was more than the CSC score, then they were marked with a 'yes'. (FU = follow up). Participants will be marked with a 'no' if they do not fulfil criteria or if the change is not in the beneficial direction (as to not confuse the results). FU = follow up.

3.5.4 Reliable and clinical change in perspective-taking

The RCI and CSC were calculated for the CERQ perspective-taking subscale using clinical norms data and healthy norms data from Rowland et al. (2013)(based on 97 participants with BD and 81 healthy control participants). The RCI was calculated to be 6.05 and the CSC was calculated to be 13.65. Based on these criteria, participant 5 reached reliable and clinical change pre-post and pre-follow up.

Table 37

Reliable and clinical change for perspective-taking

Participant	CERQ perspective-taking Pre-training	CERQ perspective-taking Post-training	CERQ perspective-taking Follow-up	Reliable change pre-post?	Reliable change pre-FU?	Clinical change pre-post?	Clinical change pre-FU?
1	13	11	12	no	no	no	no
2	17	19	14	no	no	n/a	n/a
3	14	17	17	no	no	n/a	n/a
4	15	14	15	no	no	n/a	n/a
5	9	18	15	yes	yes	yes	yes
6	20	17	18	no	no	n/a	n/a

Note: The raw scores presented above were compared with the CERQ perspective-taking subscale RCI score of 6.05 and the CSC score of 13.65. If the participants change score between pre-post or pre-follow up was greater than the RCI score, then they were marked with a 'yes'. If the participants post or follow up score was more than the CSC score, then they were marked with a 'yes'. (FU = follow up). Participants will be marked with a 'no' if they do not fulfil criteria or if the change is not in the beneficial direction (as to not confuse the results). FU = follow up, n/a = not applicable as the participant's pre-training score was already higher than CSC value.

3.6 Overall summary of the results

Daily mood symptomatology measures

Out of the six participants which took part in the study only one participant (P4) experienced a clinically significant reduction in depression symptomatology between the baseline and training phase according to Kazdin's criteria (Kazdin, 2011). However, three out of six participants (P2, P4, and P5) did experience a lower mean depression rating in the training phase compared to the baseline phase. The overall effect size on depressive symptomatology was small (Cohen's *d*=0.12).

Out of the six participants which took part in the study only one participant (P1) experienced a clinically significant reduction in mania symptomatology between the baseline and training phase according to Kazdin's criteria (Kazdin, 2011). However, four out of six participants (P1, P3, P4 and P5) did experience a lower mean mania rating in the training phase compared to the baseline phase. The overall effect size on mania symptomatology was small (Cohen's *d* =0.15).

Additional symptomatology measures

Five out of six participants (P1, P2, P3, P4 and P5) experienced a reduction in anxiety scores whilst in the training phase, with four of these participants (P1, P2, P3 and P4) maintaining that reduction at the two week follow-up. Based on the RCI criteria, two out of six participants experienced a reliable change pre-post (P3 and P5), and three out of six participants experienced a reliable change pre-follow up (P2, P3 and P5). Based on the CSC criteria, two out of six participants experienced a clinical change pre-post (P3 and P5), and one out of six participants experienced a clinical change pre-follow up (P3). The reductions in anxiety ranged from -4 to -22 points between the start of session two (pre-training) and the end of session three (post-training). The overall effect size on anxiety from pre-training to post-training was large (Cohen's *d* =0.87).

Four out of six participants (P2, P3, P5 and P6) experienced a reduction in affective lability whilst in the training phase, with three of these (P2, P3 and P6) maintaining that reduction at the two week follow-up. One out of six participants experienced a clinical

change pre-post (P5). No participants experienced reliable change. The changes in affective lability across participants ranged from +8 to -18 points between the start of session two (pre-training) and the end of session three (post-training). The overall effect size on affective lability from pre-training to post-training was small (Cohen's *d* =0.29).

Cognitive ability measures

Five out of six participants (P1, P2, P3, P4 and P5) experienced an increase in the ability to *decenter* whilst in the training phase, with two of these (P4 and P5) maintaining that increase at the two week follow up. Based on the RCI criteria, two out of six participants achieved reliable change pre-post and pre-follow up (P4 and P5). Based on the CSC criteria, one out of six participants achieved clinical change pre-post (P1). The increases in the ability to *decenter* ranged from +1 to +21 points between the start of session two (pre-training) and the end of session three (post-training). The overall effect size on decentering from pre-training to post-training was large (Cohen's *d* =0.83).

Three out of six participants (P2, P3 and P5) experienced an increase in the ability to perspective-take whilst in the training phase, with one of these (P3) maintaining that increase at the two week follow up. Based on the RCI and CSC criteria, one out of six participants experienced reliable and clinical change pre-post and pre-follow up (P5). The changes in the ability to perspective-take ranged from -2 to +9 points between the start of session two (pre-training) and the end of session three (post-training). The overall effect size on perspective-taking from pre-training to post-training was medium (Cohen's *d* =0.43).

Idiographic within-training and pre-post training measures

The within training measures showed that all participants on average experienced reductions in their levels of distress to the stimuli that they used the STAGE technique on, whether that be a scenario or a personal memory.

The pre-post measures showed that five out of six (P1, P2, P4, P5 and P6) participants experienced an increase in the ease and extent of their positive thinking and a decrease in the ease and extent of their negative thinking. The other participant (P3) only experienced a decrease in the ease of negative thinking. The pre-post measures also

showed that all participants rated their distress levels (distress at the time of the event taking place or distress at the time of recall) in relation to their five memories as lower post-training compared to pre-training for at least three of their memories. These reductions in distress were observed across memories used as training stimuli and memories that had not been used.

Feasibility and acceptability

It is important to note that all of the participants that started the study completed the study; there were no drop outs. In addition to this, participants appeared to engage well with the tasks in the study both in the sessions and at home, for example there was very little missing data from the daily measures. There were no reported adverse events during the study and the idiographic data was positive, therefore this suggests that it did not cause negative consequences for the individuals. The positive qualitative data (see Appendix U) suggests that the training package was acceptable.

Chapter 4: Discussion

4.1 Summary of findings in relation to the research questions

The aim of this pilot study was to replicate the SD-PB training package with BD, in order to explore its effectiveness with this population. The 'effectiveness' was based on the effects the training had on symptomatology, the ability to *decenter* and the ability to perspective-take. The research questions were then formed around these themes.

4.1.1 Research question one: Does the training reduce mood symptomatology?

The primary research question was 'does the SD-PB training reduce depressive or mania mood symptomatology in individuals diagnosed with BD?'.

Firstly, depressive symptomatology was measured daily using the QIDDSR (Rush et al., 2003). The results showed that only one out of the six participants (P4) was classed as a *responder*. However, three out of six participants (P2, P4 and P5) did experience a lower mean depression rating in the training phase (B) compared to the baseline (A) phase. One might conclude from these results that, in general, the SD-PB training did not reduce depressive symptomatology in individuals with BD.

Secondly, mania symptomatology was measured daily using the ASRM (Altman, Hedeker, Peterson, & Davis, 1997). Again, the results showed that only one out of six participants (P1) was classed as a *responder*. Similarly, to the depressive results above, four out of six participants (P1, P3, P4 and P5) did, however, experience a lower mean mania rating in the training phase compared to the baseline phase. One might conclude from these results that, in general, the SD-PB training did not reduce mania symptomatology in individuals with BD.

Looking at the results as a whole, two out of six participants (P1 and P4) were classed as *responder*s in terms of a reduction in symptoms (whether that be depressive or manic symptoms). A very important factor should be taken into account when interpreting

the daily symptomatology data (and the conclusions drawn from it), which is that the mania and depression ratings were too varied (over both of the phases) across all of the participants to reliably interpret the findings. Therefore, the overall conclusion from the first research question is that the SD-PB training may have reduced depressive or manic mood symptomatology in *some* individuals with BD. In summary, hypothesis one which stated 'there will be a change in depressive or manic mood symptomatology between the baseline phase and the training phase' cannot be fully accepted.

4.1.2 Research question two: Does the training reduce symptomatology related to BD?

The second research question was 'does the SD-PB training reduce symptomatology related to BD in individuals diagnosed with BD?'.

Anxiety symptomatology was measured at four time points using the BAI (Beck & Steer, 1990). The results showed five out of six participants (P1, P2, P3, P4 and P5) experienced a reduction in anxiety scores whilst in the training phase, and for two of these participants this was a reliable and clinical change (P3 and P5). These results appear to suggest that the majority of participants experienced a reduction in anxiety, and for two participants this meant that they moved from clinical to sub-clinical anxiety.

In terms of the two-week follow-up, four of the five participants that experienced a reduction in anxiety in the training phase (P1, P2, P3 and P4) maintained the reduction in anxiety scores. Between pre-training and follow-up, three out of six participants experienced a reliable change (P2, P3 and P5) and one out of six participants experienced a clinical change (P3). These results appear to suggest that for the majority of participants their reduction in anxiety was maintained two weeks after the training had finished, and for one individual the change between pre-training and follow-up meant that they moved from clinical to sub-clinical anxiety.

One might conclude from these results that the SD-PB training may reduce anxiety symptomatology in some individuals with BD.

Affective lability was measured at four time points using the ALS (Oliver & Simons, 2004). The results showed that four out of six participants (P2, P3, P5 and P6) experienced a reduction in affective lability whilst in the training phase, and for one of these participants this was a clinical change (P5). These results appear to suggest that the majority of participants experienced a reduction in affective lability, and for one participant this meant that they moved from clinical to sub-clinical affective lability. This suggests that some participants experienced their mood as more stable during the training phase.

In terms of the two-week follow-up, three of the four participants that experienced a reduction in affective lability in the training phase (P2, P3 and P6) maintained the reduction in affective lability scores. These results appear to suggest that for the majority of participants their reduction in affective lability was maintained two weeks after the training had finished.

One might conclude from these results that the SD-PB training may reduce affective lability in some individuals with BD.

The overall conclusion from the second research question was that the SD-PB training may reduce symptomatology related to BD in some individuals diagnosed with BD, particularly anxiety symptomatology. In summary, hypothesis two which stated 'there will be a change in measures of anxiety and affective lability between pre-training and post-training and/or follow-up' cannot be fully accepted.

4.1.3 Research question three: Does the training change the ability to *decenter*?

The third research question was 'does the SD-PB training change the ability to *decenter* in individuals diagnosed with BD?'.

This was measured at four time points by the *decentering* subscale of the EQ (Fresco et al., 2007). The results showed that five out of six participants (P1, P2, P3, P4 and P5) experienced an increase in the ability to *decenter* whilst in the training phase. For one of the participants this was a clinical change (P1) and for two of the participants this was a reliable change (P4 and P5). This suggests that the SD-PB training was able to deliver what it was designed to deliver – an increase in an individual's ability to *decenter* – in individuals

with BD, and for one participant this meant that they moved from clinical to sub-clinical *decentering* abilities.

In terms of the two-week follow-up, two of the five participants that experienced an increase in their ability to *decenter* in the training phase (P4 and P5) maintained the improvement in *decentering,* and in both cases this was a reliable change. These results appear to suggest that for some participants their increase in their ability to *decenter* was maintained two weeks after the training had finished.

One might conclude from these results that the SD-PB training may change the ability to *decenter* in individuals with BD as all but one participant experienced a change. In summary, hypothesis three which stated 'there will be a change in the ability to decenter between pre-training and post-training and/or follow-up' can be accepted.

4.1.4 Research question four: Does the training change the ability to perspective-take?

The fourth research question was 'does the SD-PB training change the ability to perspective-take in individuals diagnosed with BD?'.

This was measured at four time points by the perspective-taking subscale of the CERQ (Garnefski, Kraaij, & Spinhoven, 2001). The results showed that three out of six participants (P2, P3 and P5) experienced an increase in the ability to perspective-take whilst in the training phase, and for one of the participants this was a reliable and clinical change (P5). These results appear to suggest that the majority of participants experienced an improvement in the ability to perspective-take, and for one participant this meant that they moved from clinical to sub-clinical perspective-taking abilities.

In terms of the two-week follow-up, one of the three participants that experienced an increase in their ability to perspective-take in the training phase (P3) maintained the improvement in perspective-taking. Between pre-training and follow-up, one out of six participants experienced a reliable and clinical change in perspective-taking (P5). These results appear to suggest that for one participant their increase in their ability to perspective-take was maintained two weeks after the training had finished.

One might conclude from these results that the SD-PB training may change the ability to perspective-take in some individuals with BD. In summary, hypothesis four which stated 'there will be a change in the ability to perspective-take between pre-training and post-training and/or follow-up' cannot be fully accepted.

4.1.5 Exploratory findings

The within-training measures were idiographic measures designed to evaluate the effectiveness of the STAGE technique, the participants would answer questions on the technique immediately after using it. The within training measures showed that the participants, on average, found the individual components of the stage technique helpful, and they each varied on which components they found most helpful. On average participants experienced reductions in their levels of distress to the stimuli that they used the STAGE technique on, whether that be a scenario, a personal memory or an emotional event that had happened in their day. These results were all in-line with what has been found across a series of SD-PB studies in unipolar depression (Hill, 2013).

The pre-post measures showed that four out of four participants experienced an increase in the ease and extent of their positive thinking and a decrease in the ease and extent of their negative thinking. The pre-post measures also showed that, on average, participants were rating their original five memories as less distressing (both 'at the time' and 'to think about now') at post-training. Again, these results were in-line with what has been found across a series of SD-PB studies in unipolar depression (Hill, 2013), however in the latter studies this improvement was only observed significantly in positive thinking, not in negative thinking.

4.1.6 Exploring the overall picture of the data

Another way to explore the data is to look at the overall picture of the data, and hypothesize which participants may have benefitted the most from the SD-PB training and why that may have been.

One could argue that the participants who benefitted the most from the study were the two participants (P1 and P4) that were classed as 'responders' as they experienced a

clinically significant reduction in mood symptomatology. Looking at these two participants, they also both experienced reductions in anxiety and improvements in the ability to *decenter*. In terms of their demographic data, they were both on medication for their BD symptoms (only three participants in total were on medication). Others factors to consider are that P4 was the youngest of the sample and had recently participated in an imagery-based study at the MRC-CBU, these factors may have played a role in her mood improvements. This brings to question whether *decentering*, anxiety reduction and medication played a role in explaining why they benefitted in mood symptomatology.

Another argument is that the participants who benefitted the most from the study were the participants who experienced any clinical change in symptomatology related to BD (anxiety and affective lability) (P3 and P5). Looking at these two participants, they also both experienced reductions in mania symptomatology, increases in the ability to *decenter,* and increases in the ability to perspective-take. In terms of their demographic data, no factors stood out as commonalities among the two that differed from other participants. This brings to question whether mania reduction, *decentering* and perspective-taking played a role in explaining why they benefitted in symptomatology related to BD.

Finally, it could be argued that the participants that experienced benefits across the most amount of measures benefitted the most from the study. If this was the case, then P5 would be thought to have most benefitted from the study as they benefited in both mood symptomatology measures, both BD related symptomatology measures, and both cognitive ability measures. They would be followed closely by P2 and P3 whom benefited in five out of the six measures. In terms of their demographic data, P5 was the only participant to score in the severe anxiety range at baseline, therefore one may hypothesize that the SD-PB package works well for individuals who are highly anxious.

Having explored several ways of determining who may have benefitted the most from the SD-PB package, and hypothesising what factors may have been key in determining who may benefit, it appears that there are no clear answers. Each participant benefitted in different ways and reasons for this were difficult to establish.

4.2 Critique of the study

The largest limitation of the study was the small sample size, as it made the results difficult to generalise to the BD population and moderators of change to be identified. These were anticipated limitations due to the use of the single-case series methodology. However, a single-case series design is recommended for early-stage clinical interventions, such as this (Kazdin, 2011). An advantage of using the single case series methodology and analysis (Kazdin, 2011) with the SD-PB intervention has been that the intervention and the individuals responses to it have been able to be studied in more depth, i.e. *where* change takes place.

Another limitation is that the daily mood symptomatology measures were only administered over a short time period; the baseline phase was two weeks and the training phase was one week. This time frame was chosen because this study was conducted as part of a qualification and due to funding restraints. However, other single case series papers with BD had used much larger time scales. For example, a recent study of an imagery focused intervention used four, five and six week baseline periods for BD participants (Holmes et al., 2016). It should be taken into account though that the SD-PB intervention was a brief intervention in itself therefore a much larger time frame may not have been warranted. Despite this, BD is a mood disorder and is characterised by changes in mood (American Psychiatric Association, 2013), therefore longer testing periods may be required in BD research in general in order to establish a stable baseline. On the other hand, it is worth considering that a stable baseline may be difficult to achieve in BD regardless of the time scale, and that in fact research should aim to capture a representative picture of the presentation. In the case of this study, the time scale could not have been extended due to restraints, but in future research it would be interesting to have slightly longer time scales to capture mood symptomatology.

A further limitation is that some of the wording in the SD-PB package may not have 'fitted' well with the mania experience. For example, the 'grey' reappraisal strategy was described in the script and subsequent training material as 'try to think about the aspects of this situation which may not be all bad. What do you think could be the silver lining to this grey cloud? If this is too difficult then think about how the situation may be less awful than

it first seems'. This wording lends itself to the reappraisal of negative events more than positive events, and in BD research has found that individuals have difficulties in particular with positive emotion regulation (Johnson, Gruber, & Eisner, 2007). The 'grey' strategy may have been more effective if it had of been reworded as 'try to think about all of the aspects of this situation, the positive, the negative and the neutral'. The reason why these changes were not made to the original SD-PB package (Hill, 2013) was to keep the package as similar as possible so that the studies could be comparable, however in the future these changes should be made to make the package more effective with BD.

A further limitation is that the perspective-taking measure is more geared towards negative events. The CERQ (Garnefski, Kraaij, & Spinhoven, 2001) measures cognitive responses to only negative hypothetical events, therefore the measure may not have captured what an individual does cognitively when faced with a positive hypothetical event. Therefore, the perspective-taking measure may not be measuring the full emotional and cognitive profile of an individual with BD. However, to date there are no other 'perspective-taking' measures available for use. In the future it may be helpful to consider adapting some emotion regulation questionnaires to be applicable to the experiences of mania and depression.

A further limitation is that there are no measures of functional outcomes. Within the NICE (2014) guidelines it is highlighted that there is a lack of research on more functional and recovery outcomes. In addition to this, there is a move in the field towards more recovery focused approaches, for example Jones et al. (2012) developed a recovery-focused Cognitive Behaviour Therapy for BD. It may have been useful to have included, for example, the Bipolar Functional Status Questionnaire (BFSQ; Goldberg et al., 2010). Despite this limitation, this could not have been addressed in the current study as there were already many measures and it would run the risk of making a type 1 error in terms of hypothesis testing.

Lastly, there are some limitations that were highlighted in Gruber's work (Gruber et al., 2009a, 2014) which this study has not addressed and are too limitations. These include that it is difficult for a researcher to access what strategies a participant is employing when asking them to do a cognitive task, comorbidities may have played a role in the study, and

the sample tested may have indeed been at a higher level of functioning than is representative for BD. However, these limitations would have been difficult to address in this study as it may have caused interference should the participant have been asked what they were cognitively doing in a task, comorbidities could not have been addressed properly in a single case series analysis and recruitment was difficult due to the time restraints of the study.

It is important to consider in the critique of the study how the researcher may have influenced the study in ways that were both strengths to the study and limitations to the study. In terms of philosophy, the researcher was a Trainee Clinical Psychologist who adopted a biopsychosocial model (Engel, 1977) to their work, therefore they were motivated to pilot novel psychological approaches to a population who historically had been treated from a largely biological perspective (Holmes et al., 2016). The researcher also developed this intervention and had conducted studies into it previously. These issues could be strengths to the study (the study was conducted thoroughly, professionally and smoothly) and limitations to the study (the researcher could have been overly motivated and demand effects may have been present). In terms of methodology, the researcher was undertaking an educational programme and was therefore restricted by time and budget, therefore this effected what design was feasible to implement. In terms of ethics, the researcher had prior experience of designing and running research studies and clinical experience with the population which was a strength to the study.

On a broader note, another limitation of this study is that adopting a single case series approach made it difficult to make theoretical conclusions about the mechanisms involved, leaving questions such as: What *was* causing the positive changes that the participants were experiencing? Were there other mediating factors? Were improvements in decentering due to step one of the technique as hypothesised from previous studies? Were improvements in perspective-taking due to step two of the technique, both steps or some other part of the study? Questions such as these are important to be able to answer when piloting a new intervention in order to understand *how* this package is working and what might be the activate ingredients in related interventions, such as CBT and MBCT. This

brings to question whether they may be limitations to Kazdin's (2011) recommendation to use single case series designs for early stage clinical interventions.

4.3 Contributions the study has made to the literature

4.3.1 The SD-PB package and its effects on symptomatology in BD

The SD-PB package had never been utilised with this population before, therefore it is the first study to measure the effects of the package on BD symptomatology.

The study showed that the SD-PB package, as it stands in this study, may not be effective for reducing depressive symptoms in BD. The depression findings from this study were not in-line with the findings from Hill (2013) which found that the SD-PB package led to significant reductions in depression symptomatology in individuals remitted from MDD. However, one would not have necessarily have expected to have found reliable reductions in depression in this study, as research has found that unipolar depression and bipolar depression are not experienced in the same way (see Smith & Craddock, 2011). For example, individuals with BD (compared to unipolar depression) experience higher rates of psychotic features, pathological guilt, lability of mood, more likely to have earlier age onset of depression, more episodes, shorter episodes, earlier morning awakening and greater difficulty in thinking (Mitchell, Goodwin, Johnson, & Hirschfeld, 2008). This research and the current study therefore bring to question whether the two disorders may in fact be qualitatively different from one another. Taking all of the differences into account it is not surprising that the two disorders may vary in their response rates to treatments. It should also be noted that there are differences between this study and Hill (2013), as the latter measured depressive symptomatology pre and post training (not daily) and used the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Although the two measures are comparable (Rush, Gullion, Basco, Jarrett, & Trivedi, 1996), one could hypothesise that the difference in administration intervals may effect a person's response.

The study also showed that the SD-PB package may not be effective for the reduction in mania symptoms. This may have been due to the participants having mean baseline mania scores that largely fell below the cut of score of 5 which indicates that their

symptoms were less likely to be associated with mania (Altman et al., 1997), therefore there was limited scope for change. Contradictory to this, one participant (P1) was classed as a *responder.* As a whole, the daily mood symptomatology data was difficult to interpret due to the variability which may explain contradictory ideas. However, by measuring mood on a daily basis, the study has demonstrated how variable mood is for the individuals with BD even when they are in a euthymic state. This is in-line with previous research that has shown greater variability in self-reported daily affect in individuals with BD (compared to healthy controls), even when euthymic (Lovejoy & Steuerwald, 1995).

The study showed that the SD-PB package may be effective for reducing anxiety symptoms in BD. Simon et al. (2004) stressed that over half of individuals with BD suffer from anxiety, and that treatments should prioritise targeting anxiety in this population. Therefore, the results from this study may provide some insight into how to reduce anxiety in this population. One might hypothesize that the imagery element of the STAGE technique may have played a role in the reduction of anxiety due to the relationship between imagery and anxiety disorders (Hirsch & Holmes, 2007). The anxiety results in this study are in line with previous research as MBCT has been shown to reduce anxiety in individuals with BD (Williams et al., 2008), and the SD-PB intervention uses *decentering* which is a component of MBCT. Interestingly, Williams et al. (2008) measured anxiety in BD using the BAI (Beck & Steer, 1990) too, their pre-treatment (MBCT) mean score was 12.7 and their post-treatment mean score was 6.8. These figures are comparable to the current study, as the pre-training score was 21.50 and the post-training score was 13.66, therefore the change in means in similar. This does bring to question whether one of the active components in MBCT in relation to anxiety reduction is *decentering*.

The study showed that the SD-PB package may be effective for some people in reducing affective lability in BD. Affective lability has been shown in the literature to be associated with greater impairment in functioning in BD (Gershon & Eidelman, 2015). Interestingly there appears to be no published studies which explicitly use the ALS (Oliver & Simons, 2004) as an effectiveness measure. Therefore, not only is this study the first to show that SD-PB training may help individuals with BD to stable their mood, but it is also the

first study, to date, to show that affective lability may be able to be reduced through psychological intervention.

To understand these findings on mood symptomatology (depression and mania), it is important to look further at the two techniques that make up the SD-PB package, which are reappraising and *decentering,* and the link that they have with BD mood symptomatology. Past research on reappraising in BD has found that it can be beneficial as participants have experienced reductions in emotional reactivity (Gruber et al., 2014). Past research on *decentering* in BD has found that it can be beneficial as participants have experienced reductions in positive emotion experience (Gruber et al., 2009a). Taking these two studies into account, it seems fair to propose that the SD-PB package (which contains reappraising and *decentering*) may have had positive effects on mood symptomatology. However, to date, there is no research to suggest that reappraising or *decentering does* lead to reductions in mood symptomatology in BD, only in unipolar depression (e.g,. reappraisals: Schartau, Dalgleish, & Dunn, 2009). Therefore, this study is the first of its kind to show that there may be limited evidence to suggest that these two techniques can bring about changes in mood symptomatology. It is also the first of its kind to suggest that some individuals with BD may experience reductions in mood symptomatology by using these techniques, as the results were not conclusive.

4.3.2 The ability to *decenter* in BD

The findings from the study support the study by Gruber, Harvey and Johnson (2009) as they also showed that it was possible for individuals with BD to *decenter.* This study also extended the findings by Gruber, Harvey and Johnson (2009), as by administering the EQ (Fresco et al., 2007) it provided evidence that the *decentering* technique used in this study did improve the ability to *decenter.* Although it should be noted that the reappraisal technique may have also played a role in this too, as it could be possible that the reappraisal strategies have the capability to increase decentering (e.g. the strategy 'else' may help someone to distance themselves from their own emotions as they are having to think about someone else being in that situation rather than themselves). The current study also addressed some of the limitations of the study by Gruber, Harvey and Johnson (2009), as

the STAGE paradigm took at least a few minutes to use and was used by the participants at least twice a day for one week, the stimuli used were past and present events, and there was more information about what the participant was doing when using the strategies due to the within-training measures. It has been helpful to address these limitations as the current study has provided evidence that *decentering* can be improved through a different technique, it can be trained over time, it can be used on personally-relevant stimuli and the technique has been studied more closely. The findings from the study also support the findings by Hill (2013) as they both show that the SD-PB package does indeed improve the ability to *decenter*, whether that be in unipolar or bipolar depression.

As the study showed that it was possible for individuals with BD to *decenter*, this may have implications for how we understand the use of mindfulness and MBCT with BD. Firstly, as many of the individuals were able to improve their ability to decenter one may hypothesise that MBCT is an accessible approach for BD. Secondly, this study may provide some support for *decentering* as a key mechanism of change in MBCT (Bieling et al., 2012) as many individuals in the study also experienced improvements in anxiety scores as in the MBCT trail (Williams et al., 2008). One of the recommendations from this study may be that MBCT trials include a measure of decentering routinely.

4.3.3 The ability to perspective-take in BD

This is the first study to show that the SD-PB package, as it stands, may be effective for some people in increasing the ability to perspective-take in BD. This supports Hill (2013) who also found that the SD-PB package led to significant improvements in the ability to perspective-take (in unipolar depression). The ability to perspective-take in the SD-PB package is thought to be induced by the perspective-broadening reappraisals. Therefore these findings, to some extent, provide support to the study by Gruber, Hay and Gross (2014), which showed that individuals with BD, when instructed to, can reappraise emotional events in adaptive ways.

This study also provided some insight into the nature of perspective broadening in individuals with BD, as the pre-post measures showed that participants experienced an

increase in the ease and extent of their positive thinking and a decrease in the ease and extent of their negative thinking. These results were in-line with what has been found across a series of SD-PB studies in unipolar depression (Hill, 2013), however in the latter studies this improvement was only observed significantly in positive thinking, not in negative thinking.

4.3.4 Cognitive models of BD

Considering some of the participants in this study experienced changes in symptomatology (depression, mania, anxiety, affective lability) and also experienced increases in the ability to *decenter* and perspective-take, one might hypothesise that there may be a link between symptomatology and cognitive change in this study (although this could not be concluded with a correlational study or mediation analyses which are beyond the realms of this design). This is one of the key principles of Beck's cognitive model of unipolar depression (Beck, 1967), that cognitions play a role in the development and maintenance of the disorder.

Cognitive models of BD have developed from Beck's cognitive model of unipolar depression (Beck, 1967) and with each model it is possible to hypothesise how the SD-PB package may fit into the model. Lam's (1999) model of BD explains how stressors lead onto poor social routine and sleep deprivation which in turn lead onto other factors which lead to symptoms of BD. One might hypothesise that the SD-PB package intervenes at the point between the stressors impacting on poor social routine and sleep deprivation, due to the SD-PB package aiming to change the way in which a person thinks about an emotional event. Jones's (2001) model includes a schematic model level which includes the way in which a person thinks about an event and they hypothesised that this is where reappraisals of the positive appraisals needs to take place to prevent mania. One might hypothesise that the SD-PB package intervenes at this schematic model level due to the use of reappraisals. Barnard and Teasdale's (1991) model hypothesises that it is the ability to switch between the 'doing mode' and the 'being mode' which is what keeps an individual healthy. One might hypothesise that the SD-PB package allows an individual to move between those

modes by the use of *decentering.* Mansell et al.'s (2007) model hypothesises how appraisals play a key part in the development of mood swings and BD, they are involved in the behaviours of the disorder and changes in internal states. One might hypothesise that the SD-PB package intervenes directly into the appraisal box in the model, due to the reappraisal training.

This study supports the cognitive model for an additional reason. The package focuses on teaching and training cognitive skills to cope with adverse experiences, and the exploratory data would suggest that this works well in reducing the distress that adverse experiences cause individuals. There were reductions in distress scores across all participants in relation to their memories in the last year, both memories they had worked on during the study and memories they had not. This shows the importance of improving cognitive abilities, and considering some of the participants also gained improvements in anxiety scores it suggests that this may have had an impact on mood.

Despite this, for some individuals (P2, P3 and P5) in the study the SD-PB may have led to an increase their ability to *decenter* (and/or perspective-take) and show pre-post changes in positive and negative thinking, yet they did not experience any clinically significant changes in their depressive or manic mood symptomatology. This highlights a few theoretical questions for BD: Does cognitive change need to reach a certain level before it impacts on mood symptomatology? Is there a mediating factor that needs to change before cognitive change can impact on mood symptomatology? What might make some individuals be able to reach *greater* cognitive change than others? Do the biases in decentering and perspective-taking underpin the mood symptomatology in BD? Beck, Rush, Shaw and Emery (1979) proposed that, according to his model of depression, recovery would be most likely if underlying schemas were addressed rather than surface level automatic thoughts, therefore it brings to question whether the SD-PB package is powerful enough to bring about mood symptomatology changes (i.e. is it enough to improve *decentering*, improve perspective-taking, improve positive thinking and reduce negative thinking?).

4.3.5 The union of the mechanisms of *decentering* and reappraising in BD

This study has contributed to these fields of CBT and MBCT research as it has shown that by using the mechanisms of reappraisal and *decentering*, together, may bring about positive effects for some individuals in terms of symptomatology. This supports Ingram and Hollon's (1986) hypothesis when they suggested that the "long term effectiveness of cognitive therapy may lie in teaching patients to initiate this process (*decentering*) in the face of future stress" (p.272). It also adds support to Beck (1970), when he described *decentering* as an important process which enables patients to implement cognitive techniques.

It should be noted however that informal qualitative feedback received during the course of the study (see appendix U) revealed that some participants found it difficult to apply the STAGE technique 'in the moment', although this did not appear to effect whether they gained any benefits from the technique. This could be explained by Lazarus' (1991) theory of cognitive appraisals, as the second stage of the theory involves the individual assessing their coping resources are and their accessibility. Therefore, the qualitative feedback may indicate that more training in required in the SD-PB package in order for the individual to be able to access the STAGE technique more easily. The study, in turn, may provide some evidence for Lazarus' (1991) theory of cognitive appraisals.

An important contribution to this field is that the results from this study support the union of reappraisal and *decentering* in the SD-PB package, especially as a way to reduce distress in individuals with BD. The within training measures revealed that, on average, individuals were rating the techniques as helpful (on average rating mid-high on the Likert scales) and consequently this led to reductions in their levels of distress to scenarios, personal memories and emotional events that had happened in their day. Remarkably, in all participants their distress was reduced in relation to personal memories that had not even been used as stimuli in the study. These results were all in-line with what has been found across a series of SD-PB studies in unipolar depression (Hill, 2013) and therefore support the efficacy of the package.

It is unclear whether *decentering* and/or reappraising, or something else entirely different, are responsible for the positive effects that participants experienced during the study (whether that be in depression, mania, anxiety or affective lability scores). It is also unclear whether the *decentering* part of the STAGE technique brought about the changes in *decentering*, and whether the reappraisal part of the STAGE technique brought about the changes in perspective-taking. It is most likely that it is the combination of the two mechanisms that brought about the changes in *decentering* and perspective-taking as the two abilities are not mutually exclusive to one another. However, the study can contribute to the reappraisal and *decentering* literature fields in their own right too (as mentioned earlier in the chapter).

Overall, this study tentatively contributes to the literature in general in that individuals with BD *can* improve their ability to *decenter* and perspective-take, and secondly, that this may happen through the SD-PB training package.

4.4 Suggestions for future research

This study is the first time that the SD-PB package has been piloted with BD. Similarly, it is the first study to demonstrate that the ability to *decenter* and to perspective-take has been improved in some individuals with BD. Therefore, a larger trial is needed to explore these mechanisms further. However, this study is very promising in terms of the future of the research in this area and for clinical practice.

For example, future research should take the SD-PB package to a larger sample size of individuals with BD so that enough power can be established to be able to perform pre and post statistical tests. It should also be considered that the SD-PB package is compared against a treatment-as-usual condition in order for further analyses to be conducted, for example, to test whether filling out the measures alone is responsible for any of the changes observed in the current study. The package was reduced down in this study from two weeks to one week due to time-restraints, therefore future research should restore this back to two weeks and consider adding in additional 'booster' sessions. In addition to this, considering the individuals are euthymic, it would be helpful to have several follow-up time

points that stretch over a longer period of time, both to measure whether the effects maintain, but also to investigate whether the training can reduce relapse rates.

Considering the SD-PB package led to improvements in the ability to *decenter* and perspective-take, this should fuel more research into these areas. One could propose that as these abilities are able to be improved then more research is needed into the mechanisms that have been used in this study to change them: the process of reappraisal and *decentering*. However, to begin with, a study is needed to compare individuals with BD to healthy controls in order to verify that these abilities *are,* according to a standardized measure, problematic in BD. It would also be helpful if more studies in general used standardised measures of these abilities. For example, much of the work on *decentering* uses a bespoke Likert scale to measure the extent to which someone has adopted an observer perspective as an 'in the moment' manipulation check (Gruber et al., 2009b; Kross et al., 2005), instead of the EQ.

Considering the positive effects the package had on anxiety, a future direction for the package may be to trial it generalised anxiety disorder or indeed any other anxiety disorder.

4.5 Implications for clinical practice

Due to the small sample size and variability in the daily mood data, the implications for clinical practice are suggested with caution as the SD-PB package is in the early piloting stage. In addition to this, there is no evidence to show that the positive changes some of the participants experienced in this study were due to the SD-PB package.

The results from this study should give clinicians confidence that the ability to *decenter* and perspective-take *can* be improved in individuals with BD. In this study the improvements may have been made in two one-to-one sessions, and daily practicing of the STAGE technique, which infers that these improvements may take place in a relatively short amount of time.

The study highlights how potentially helpful it may be to spend some time focusing in treatment on two mechanisms that are already in most clinician's repertoires. For example, taking the time to focus on reappraisals, even providing some set ways to reappraise in order to help individuals to do this more easily, may lead to improvements in positive thinking and reductions in negative thinking. Helping individuals to find ways to *decenter* from their emotions may too lead to these changes in cognitions.

The qualitative feedback (see appendix U) suggests that individuals like having a tool on a cue card and would get it out and use it spontaneously. One clinical implication from this research may be the consideration of giving individuals more techniques that they can practically fit in their pocket.

On a much wider scale, a clinical implication of this study is that the SD-PB package could be developed into a short intervention for individuals with BD whilst euthymic. The intervention could be delivered by any clinical staff member for a brief piece of one-to-one work, or it could even be adapted for groups or online administration. Another possibility is that the STAGE technique is used as a waitlist strategy or an adjunct to therapy. However, due to the early stages of this research this clinical implication would not be appropriate without further research into the SD-PB intervention.

4.6 Concluding comments

The aim of this pilot study was to replicate the SD-PB training package with a new clinical group, BD, in order to explore the effectiveness of this training programme with this population. The study fulfilled the aim as it has provided some preliminary evidence on the potential effectiveness of the package, however, with such a small sample size the results cannot be generalised and should therefore be interpreted with caution. In addition to this, further research is required in order to understand whether the SD-PB training package was responsible for any of the positive effects some participants gained during the timeframe in which the study took place.

The daily mood symptomatology monitoring data showed that two participants (P1 and P4) were categorised as *responder*s in terms of their reductions in mood

symptomatology. The measures collected at four time points showed that (out of six participants) five participants showed reductions in anxiety and improvements in the ability to *decenter* (P1, P2, P3, P4 and P5), four participants showed reductions in affective lability (P2, P3, P5 and P6), and three participants showed improvements in the ability to perspective-take (P2, P3 and P5). For all participants, at least one of the improvements that they had experienced was maintained two weeks later. For five out of six participants (P1, P2, P3, P4 and P5), a reliable or clinical change was observed from pre-post or pre-follow up on at least one of the measures administered at the four time points. The within-training measures showed that the participants rated the 'STAGE' technique helpful and reported reductions in distress to the stimuli used in the training. The pre-post measures showed all participants experienced some improvements in positive thinking and/or reductions in negative thinking, and reductions in their distress to their original five memories (regardless of whether these memories were used as part of training).

Holmes et al. (2016) suggest that BD is in urgent need of a rapid development of novel treatments, and the SD-PB package is indeed a novel treatment. In addition to this, the results from this study indicate that the SD-PB package may have potential for reducing a range of symptomatology in BD and bring about cognitive change. This is an exciting advancement to the literature on the SD-PB package, the literature on reappraising in BD (e.g. Gruber et al., 2014) and the literature on decentering in BD (e.g. Gruber et al., 2009a). Providing the results can be replicated in larger studies, this study also provides an exciting advancement in psychological treatments for BD, as it may have uncovered a technique that can reduce BD symptomatology.

This thesis began with a quote from Abraham Lincoln that highlighted how taking different perspectives on a situation (i.e. a rose bush) can effect one's mood and actions. It could be argued that the STAGE technique may be one way to help individuals with BD to take new perspectives on their own 'rose bush'.

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Appendices

Appendix A

The Structured Clinical Interview for the DSM-IV Axis I Disorders (SCID)

A. MOOD EPISODES

A1 – A15: MAJOR DEPRESSIVE EPISODE CRITERIA

"Now I am going to ask you some more questions about your mood ..."

NOTE: Criterion B (i.e., does not meet criteria for a Mixed Episode) has been omitted from the SCID.

A._Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) or (2)
In the past month...

A1

...has there been a period of time when you were feeling depressed or down most of the day, nearly every day? (What was that like?) IF YES: How long did it last? (As long as 2 weeks?)

(1) Depressed mood most of the day, nearly every day, as indicated by either subjective report (e.g., feels sad or empty) or observation made by others (e.g., appears tearful). **Note**: In children and adolescents, can be irritable mood.

? - +

A2

... What about losing interest or pleasure in things you usually enjoyed? IF YES: Was it nearly every day? How long did it last? (As long as 2 weeks?)

(2) Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day (as indicated by either subjective account or observation made by others)

? - +

If neither **A1** nor **A2** is "+" during the current month, check for past Major Depressive Episodes by asking questions **A1** and **A2** again looking for lifetime episodes, beginning with "Has there EVER..."

IF AT LEAST ONE PAST DEPRESSED PERIOD: Have you had more than one time like that? Which one was the worst?

If neither **A1** nor **A2** has ever been "+", go to **A16** (*Manic Episode*).

FOR THE FOLLOWING QUESTIONS, FOCUS ON THE WROST 2-WEEK PERIOD:

A3 (3) How was your appetite? (Weight loss/gain, increased/decreased appetite?)

Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day. **Note**: In children, consider failure to make expected weight gains.

? - +

A4 (3) How were you sleeping? (insomnia/hypersomnia, trouble falling asleep, waking frequently, waking too early) How many hours a night compared to usual? Was that nearly every night?

Insomnia or hypersomnia nearly every day.

? - +

A5 Were you so fidgety or restless that you were unable to sit still? (was it so bad that other people noticed? What did they notice? Was it nearly every day?) *IF NO* what about the opposite?

(5)psychomotor agitation or retardation nearly every day (observable by others, not merely subjective feelings of restlessness or being slowed down)

? - +

A6 What was your energy like? Fatigue/loss of energy, nearly every day (6). Fatigue or loss of energy nearly every day

? - +

A7 How did you feel about yourself? (Worthless, guilty), nearly every day. (7). Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick).

NOTE: CODE "-" IF ONLY LOW SELF ESTEEM

? - +

A8 Did you have trouble thinking or concentrating? (Indecisiveness) what kind of things did it interfere with? IF NO: Was it hard to make decisions about every day things?

(8). Diminished ability to think or concentrate, or indecisiveness, nearly every day (either by objective account or as observed by others).

? - +

Were things so bad that you were thinking a lot about death or that you would be better off dead?

A9 What about thinking of hurting yourself? IF YES: Did you do anything to hurt yourself?

(9). Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan or committing suicide.

? - +

A10 **AT LEAST FIVE OF A(1) – A(9) ARE "+" AND AT LEAST ONE OF THESE IS ITEM A(1) OR A(2).**

? - +

If **A10** is "-" (i.e., fewer than give are "+"), ask the following if unknown:

Have there been any other times when you've been depressed and had even more of the symptoms that we've just talked about?
If "yes", go back to **A1** and ask about that episode.
If "no", go to **A16** (*Manic Episode*).

A11 IF UNCLEAR: has [the depression/OWN WORDS] made it hard for you to do your work, take care of things at time or get along with other people?

C._ The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

? - +

If **A11** is "-" (i.e. not clinically significant), ask the following if unknown:

Have there been any other times when you've been depressed and it had more of an effect on your life?
If "yes", go back to **A1**, and ask about that episode
If "no", go to **A16** (*Manic episode*)

A12

Just before this began, were you physically ill? Taking any medications/change in amount of medications? Just before this began, were you drinking or using any street drugs?

D._The symptoms are not due to the direct physiological effects of a substance (e.g., a drug abuse, medication) or a general medical condition.

Etiological general medical conditions include degenerative neurological illnesses (e.g., Parkinson's disease)(, cerebrovascular disease (e.g., stroke), metabolic conditions (e.g., vitamin B12 deficiency), endocrine conditions (e.g., hyper- and hypothyroidism, hyper- and hypoadrenocorticism), viral or other infections (e.g., hepatitis, mononucleosis, HIV), and certain cancers (e.g., carcinoma of the pancreas).

Etiological substances include alcohol, amphetamines, cocaine, hallucinogens, inhalants, opiods, phencyclidine, sedatives, hypnotics, anxiolytics. Medications include antihypertensives, oral contraceptives, corticosteroids, anabolic steroids, anticancer agents, analgesics, anticholinergics, cardiac medication.

? - +

If there is any indication that the depression may be secondary (i.e., a direct physiological consequence of a general medical condition or substance), go to **A61** and return here to make a rating of "+" or "-".

If **A12** is "-" (i.e. mood is due to a substance or general medical condition), ask the following:

Have there been any other times when you've been depressed and it was not because of [GENERAL MEDICAL CONDITION/SUBSTANCE USE]?
If "yes", go back to **A1**, and ask about that episode
If "no", go to **A16** (*Manic episode*)

A13

IF UNKOWN: did this begin soon after someone close to you died? Have there been any other times when you've been depressed and it was not because of the loss of a loved one? **E**._The symptoms are not better accounted for by Bereavement, i.e., after the loss [death] of a loved one, the symptoms persist for longer than 2 months or are characterised by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

? - +

If **A13** is "-" (i.e., the depressed mood is better accounted for by Bereavement), ask the following:

Have there been any other times when you've been depressed and it was not because of the loss of a loved one?
If "yes", go back to **A1**, and ask about that episode
If "no", go to **A16** (*Manic episode*)

A14 IF UNKOWN: have you had (SYMOTOMS RATED "+" ABOVE) in the past month?

? - +

CRITERIA A, C, D AND E ARE "+" (MAKE A DIAGNOSIS OF MAJOR DEPRESSIVE EPISODE)

A15 How many separate times have you been [depressed/OWN WORDS] nearly every day for at least 2 weeks and had several of the symptoms you just descried, such as [SYMPTOMS OF THE WORST EPISODE] _____ Total number of Major Depressive Episodes, including current (CODE 99 if too numerous or indistinct to count)

A16 – A29 MANIC EPISODE CRITERIA

NOTE: Criterion C (i.e., does not meet criteria for a Mixed Episode) has been omitted from the SCID.

A16 Have you ever had a period of time when you were feeling so good, high, excited or hyper that other people thought you were not your normal self or you got in trouble? (Did anyone say you were manic? Was it more than just feeling good?) What was that like? IF NO: What about a period of time when you were so irritable that you found yourself shouting at people or stating fights or arguments? (Did you find yourself yelling at people you didn't really know?)

A._A distinct period of abnormally and persistently elevated, expansive or irritable mood...

? - +

If **A16** is "-" (i.e., never any periods of elevated or irritable mood), go to **A45** (*Dysthymic Disorder*).

A17 How long did that last? (As long as 1 week? Did you have to go into hospital?)

Have you had more than one time such as this? Which time were you most [high irritable/OWN WORDS]

? - +

If **A17** is "-" (i.e., duration is less than 1 week), go to **A30** (*Hypomanic Episode*).

IF UNKNOWN: During this time, when were you the most [OWN WORDS for euphoria or irritability]?

FOR ITEMS A18 – A27 FOCUS ON THE MOST EXTREME EPISODE

B._During the period of mood disturbance, three (or more) of the following symptoms have persisted (four if the mood is only irritable) and have been present to a significant degree:

A18 How did you feel about yourself? (more self-confident than usual? Any special powers or abilities?)
(1). Inflated self esteem or grandiosity

? - +

A19 Did you need less sleep than usual? IF YES: did you feel rested?

? - +

A20 Were you much more talkative than usual? (Did people have trouble stopping you or understanding you? Did people have trouble getting a word in edgeways?)
(3). More talkative than usual or under pressure to keep talking

? - +

A21 Were your thoughts racing through your head? (4). Flights of ideas or subjective experience that thoughts are racing.

? - +

A22 Were you so easily distracted by things around you that you had trouble concentrating or staying on one track?
(5). Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli)

? - +

A23 How did you spend your time? Were you so active that your friends/family was concerned? IF NO INCREASED ACTIVITY: were you physically restless? How bad was it?

(6). Increase in goal-directed activity (socially, at work or school, or sexually) or psychomotor agitation.

? - +

A24 Did you do anything that could have caused trouble for you or your family? (Buying things not needed? reckless driving? Anything sexual that was unusual for you?)

(7). Excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

? - +

A25 **AT LEAST THREE OF B(1)-B(7) ARE "+" (OR FOUR IF MOOD IS IRRITABLE AND NOT ELEVATED)** ? - +

If **A25** is "-" (i.e. fewer than three are "+"), ask the following if unknown:

Have there been any other times when you were [high/irritable/OWN WORDS] and had even more of the symptoms that we've just been talking about?
If "yes", go back to **A16**, and ask about that episode
If "no", go to **A45** *(Dysthymic episode*)

A26 IF NOT KNOWN: At the time, did you have serious problems at home or at work (school) because you were [SYMPTOMS] or did you have to go into hospital?

D._The mood disturbance is sufficiently severe to cause marked impairment in occupational functioning or in usual social activities or relationships with others, or to necessitate hospitalisation to prevent harm to self or others, or there are psychotic features.

? - +

If **A26** is "-" (i.e. not sufficiently severe), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and you got into trouble with people or were hospitalised?
If "yes", go back to **A16**, and ask about that episode
If "no", go to **A39** *(Criterion C for Hypomanic Episode*)

A27 Just before this began, were you physically ill/were you taking any medication (change in amount)/ just before this began were you drinking or taking any street drugs?

E._The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition.

Note: Manic-like episodes that are clearly caused by somatic antidepressant treatment (e.g., medication, electroconvulsive therapy, light therapy) should not count toward a diagnosis of Bipolar I Disorder but are considered Substance-Induced Mood Disorders.

Etiological general medical conditions include degenerative neurological illnesses (e.g., Huntington's disease, multiple sclerosis), cerebrovascular disease (e.g., stroke), metabolic conditions (e.g., vitamin B12 deficiency, Wilson's disease), endocrine conditions (e.g., hyperthyroidism), viral or other infections and certain cancers (e.g., cerebral neoplasms). Etiological substances include alcohol, amphetamines, cocaine, hallucinogens, inhalants, opiods, phencyclidine, sedatives, hypnotics, and anxiolytics. Medications include psychotropic medications (e.g., antidepressants), corticosteroids, anabolic steroids, isoniazid, antiparkinson medication (e.g., levodopa), and sympathomimetics/decongestants.

? - +

If there is any indication that the mania may be secondary (i.e., a direct physiological consequence of a general medical condition or substance), go to **A57** and return here to make a rating of "+" or "-".

If **A27** is "-" (i.e. the mania is due to a substance or general medical condition), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and you were not [physically ill/taking medication/using SUBSTANCE]?
If "yes", go back to **A16**, and ask about that episode
If "no", go to **A39** *(Criterion C for Hypomanic Episode*)

A28 IF UNKNOWN: have you ever had [SYMPTOMS RATED "+" ABOVE] in the past month?

? - +

CRITERIA A, C, D AND E ARE "+" (MAKE A DIAGNOSIS OF MANIC EPISODE)

A29 How many separate times were you [HIGH/OWN WORDS] and had [ACKNOWLEDGED MANIC SYMTOMS] _____ for at least a week (or were hospitalised)?

Total number of Manic Episodes, including current (CODE 99 if too indistinct or numerous to count)

YOU ARE NOW FINISHED EVALUATING MOOD EPISODES. GO TO MODULE B (PSYCHOTIC AND ASSOCIATED SYMPTOMS), **B1**.

A30 – A44: HYPOMANIC EPISODE CRITERIA

A30 IF UNKNOWN: when you were [high/irritable/OWN WORDS], did it last for at least 4 days? had more than one time like that? (which time were you the most [high/irritable/OWN WORDS]

A._A distinct period of persistently elevated, expansive, or irritable mood, lasting throughout at least 4 days, that is clearly different from the usual nondepressed mood.

? - +

If **A30** is "-" (i.e., never any periods of elevated or irritable mood lasting at least 4 days), go to **A45** *(Dysthymic Disorder).*

FOR ITEMS A31 – A37, FOCUS ON THE MOST EXTREME EPISODE

B._ During the period of mood disturbance, three (or more) of the following symptoms have persisted (four if the mood is only irritable) and have been present to a significant degree:

A31 How did you feel about yourself? (more self-confident than usual? Any special powers or abilities?)

? - +

A32 Did you need less sleep than usual? IF YES: did you feel rested?

(2). Decreased need for sleep (e.g., feels rested after only 3 hours of sleep)

? - +

A33 Were you much more talkative than usual? (did people have trouble stopping or understanding you? Did people have trouble getting a word in edgeways?

(3). More talkative than usual or under pressure to keep talking

? - +

A34 Were your thoughts racing through your head?

(4). Flights of ideas or subjective experience that thoughts are racing

? - +

A35 Were you so easily distracted by things around you that you had trouble concentrating on one thing? (5). Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli)

? - +

A36 How did you spend your time? Were you so active that your family/friends were concerned? IF NO INCREASED ACTIVITY: Were you physically restless? (how bad was it?)

(6). Increase in goal-directed activity (socially, at work or school, or sexually) or psychomotor agitation.

? - +

A37 Did you do anything that could have caused trouble for you or your family? Excessive involvement in pleasurable activities that have a high potential for painful consequences.

(7). Excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments).

? - +

A38 **AT LEAST THREE OF B(1)-B(7) ARE "+" (OR FOUR IF MOOD IS IRRITABLE AND NOT ELEVATED)**

? - +

If **A38** is "-" (i.e. fewer than three are "+"), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and had even more of the symptoms we've just talked about?
If "yes", go back to **A30**, and ask about that episode.
If "no", go to **A45**, *(Dysthymic Disorder).*

A39 IF UNKNOWN: is this very different from the way you usually are? (How are you different? at work? With friends?).

C._The episode is associated with an unequivocal change in functioning that is uncharacteristic of the person when not symptomatic.

? - +

If **A39** is "-" (i.e. characteristically "hypomanic"), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and you were really different from the way you usually are?
If "yes", go back to **A30**, and ask about that episode.
If "no", go to **A45**, *(Dysthymic Disorder).*

A40 IF UNKOWN: did other people notice the change in you? (what did they say?) ?

D._The disturbance in mood and the change in functioning are observable by others.

? - +

If **A40** is "-" (i.e., not observable by others), ask the following:

Have there been any other times when you were [high/irritable/OWN WORDS] and other people did notice the change in the way you were acting?
If "yes", go to **A30,** and ask about that episode.
If "no", go to **A45** (*Dysthymic Disorder*)

A41 IF UNKNOWN: at that time, did you have serious problems at home or at work (school) because you were [SYMPTOMS] or did you have to go to hospital?

E._The episode is not severe enough to cause marked impairment in social or occupational functioning, or to necessitate hospitalisation, and there are no psychotic features.

? - +

If **A41** is "-" (i.e., severe enough to cause marked impairment, etc), AND either hospitalisation was required or duration was 1 week long or longer, go back to **A17** and recode "+" for that item, then continue with the rest of the ratings for Manic Episode. Otherwise, if there was marked impairment in functioning but duration was less than 1 week, skip to **A45** and eventually code "2" for item **D12**.

A42 Just before this began, were you physically ill?taking any medication? IF YES: any change in the amount? Just before this began, were you drinking or using any street drugs?

F._The symptoms are not due to the direct physiological effects of a substance (i.e., a drug of abuse, a medication) or a general medical condition.

Note: Hypomanic-like episodes that are clearly caused by somatic antidepressant treatment (e.g., medication, electroconvulsive therapy, light therapy) should not count toward a diagnosis of Bipolar II Disorder but are considered Substance-Induced Mood Episodes.

*Refer to list of possibly etiological general medical conditions and substances included with item **A27***

? - +

If there is any indication that the hypomania may be secondary (i.e., a direct physiological consequence of a general medical condition or substance), go to **A61** and return here to make a rating of "-" or "+".

If A42 is "-" (i.e., the hypomania is due to a substance or general medical condition), ask the following:

Have there been any other times when you were {high/irritable/OWN WORDS] and you were not [physically ill/taking medication/using SUBTANCE]?
If "yes", go back to A30, and ask about that episode.
If "no", go to A45, (Dysthymic Disorder).

A43 IF UNKNOWN: have you had [SYMPTOMS RATED "+" ABOVE] in the past month?

CRITERIA A, B, C, D, E AND F ARE "+" (MAKE A DIAGNOSIS OF HYPOAMIC EPISODE)

? - +

A44 How many times were you [high/irritable/OWN WORDS] and had [ACKNOWLEDGED HYPOMANIC SYMPTOMS] for a period of time?

Total number of hypomanic Episodes (CODE 99 if too indistinct or numerous to count)

? - +

Appendix B

Participant Information Sheet

Version date: 17.08.15

Participant Information Sheet

A pilot study of a brief self-distancing and perspective-broadening training package for Bipolar Disorder.

We would like to invite you to take part in a study looking at different ways in which we process events that happen in our lives. The study is being conducted by Dr Emma Hill who is a Trainee Clinical Psychologist studying at the University of East Anglia. The study will form part of the clinical doctorate training course and will be written up as a thesis, it will then be written as a scientific paper and submitted to a journal for publication.

Before you decide whether you would like to take part, we would like you to read the following information sheet. Once you have read this information sheet you will be able to speak to the researcher, Dr Emma Hill, and ask any questions you may have.

What is the aim of the study?

The aim of the study is to explore different ways in which we can process emotional events. This will contribute to a field of research that is being worked on all over the world which is focused on how we can develop ways to manage emotions more effectively. Understanding how we process emotions has already helped develop better therapy for depression and this study aims to test out if the same can be applied to Bipolar Disorder. This is an especially important field of research as it is from these early pilot studies into emotions and how to manage them that we can devise better treatment interventions that are urgently needed for Bipolar Disorder.

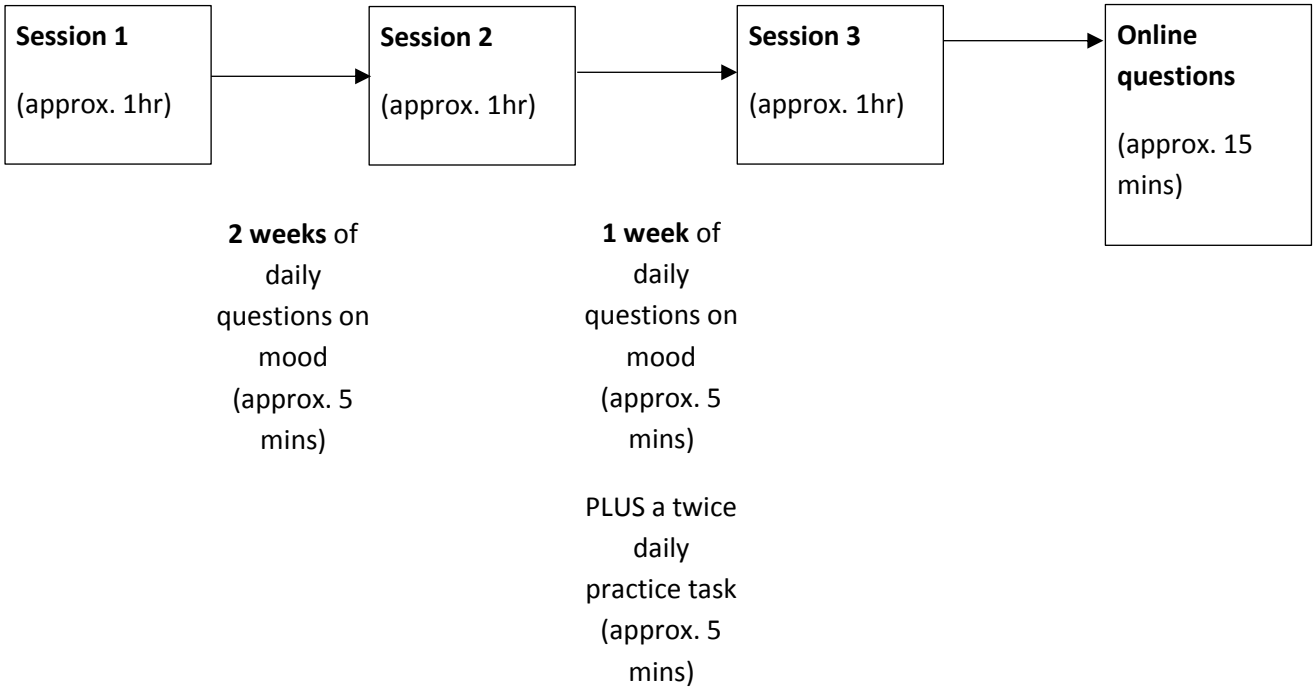
Why have I been asked to take part?

You have been invited to take part in the study, if you wish to do so, because you have a diagnosis of Bipolar Disorder but are currently not experiencing an episode of depression or mania.

What will the study involve?

Before agreeing to take part it is important that you understand what it is that you will be asked to do.

The study will take place across three separate sessions which will take place at the MRC-CBSU. Please see the diagram below which explains the timeframe if you choose to take part in the study.



Overview of the sessions:

Session One (1 hour)

There will be time at the beginning of this session to ask any questions and sign the consent form. You will be asked to fill out some questionnaires on mood and emotion management (approximately 20 minutes).

In-between sessions (2 weeks apart)

You will be asked to fill out a questionnaire on your mood every day.

Session Two (1 hour)

You will be asked to fill out the same questionnaires again and think about two emotional memories of your own, read an informative sheet on a new way to process emotional events, and then practice that new way of processing with some memories.

In-between sessions (1 week apart)

You will be asked to practice the new way of processing with things that happen in your everyday lives or with memories, and continue to fill out a questionnaire on your mood every day.

Session Three (1 hour)

You will be asked to continue to practice the new way of processing with some memories. Then you will be asked to repeat the questionnaires.

Online questionnaires

You will be asked to fill out the same questionnaires online two weeks after session three.

If you would like to see any of the questionnaires before you consent to taking part in the study you can ask the research for some examples.

Will I get paid for taking part?

Yes, you will be paid in accordance with the Medical Research Council payment structure for behavioural research participation. This is £6 per hour for the time spent taking part in the study. In total you will receive £25 in total for your time. A contribution will also be made towards your travel to the three sessions, at £3 each trip if you live outside of Cambridge and £2.50 each trip if you live inside of Cambridge.

What are the disadvantages to taking part?

As mentioned above, the study will involve you thinking about emotional events that have taken place in your life recently. We ask you to choose mildly emotional events to think

about but this may cause upset. If you were to become upset during the study you will be offered a break and chance to talk to a member of the clinical team at the Medical Research Council Cognition and Brain Sciences Unit (MRC CBSU). You will also be provided with information of other ways you can seek support. If you become unwell during the study we will discuss with you whether it is best to withdraw from the study and will ask for you to provide contact details of your GP so that we can, with your consent, inform them if you are unwell.

What happens to the information that is collected during the study?

Your data record will not be associated with your name directly, only with an identification number. All data will be kept in a locked file and will be kept for 10 years in accordance with UEA research data management policy. Video or audio tapes will not be used in the study. All data collected in the course of this study will be treated with confidentiality in compliance with the Data Protection Act (1998). The data collected for this study may be written up as reports or publications in professional journals and may be presented at scientific conferences. Any data presented in this way will be completely anonymous and you will not be personally identifiable.

Who is involved in the organization of the study?

Dr Emma Hill (Trainee Clinical Psychologist) is the researcher of whom you will have the most contact with. This project forms a part of Dr Hill's clinical training at the University of East Anglia. Dr Hill will be supervised by Dr Margo Ononaiye (Deputy Programme Director (Clinical)) and Professor Ken Laidlaw (Programme Director) on the Doctorate in Clinical Psychology at the University of East Anglia. In addition to this, Dr Hill will get supervision from Dr Martina Di Simplicio (Career Development Fellow) and Dr Emily Holmes (Programme Leader) at the Medical Research Council Cognition and Brain Sciences Unit (MRC CBSU) in Cambridge.

What happens if I decide to take part?

If you decide to take part then you should contact the researcher, Emma Hill, to arrange a phone call. During this phone call you can ask any questions you may have and also arrange what three dates would suit you best to take part in the study.

It is important if you do take part that in the first session you share with the researcher your GP and care coordinator's (if applicable) contact details so that the researcher can send a standard letter to them informing them that you are taking part in the study. This is important to make sure that if you were to feel you needed more support your GP and care coordinator (if applicable) are aware of the details of the study.

What happens if I change my mind and decide I don't want to take part anymore?

It is very important that you know that you can stop and withdraw from the study at any point in time, and you will not be asked why you wish to stop. You will be paid for the time you have spent taking part in the study up to that point. This decision will not influence your participation in future studies.

What if I have a problem whilst taking part in the study?

If you have problem with the study and wish to make a complaint please contact Professor Ken Laidlaw, Director of the Doctorate of Clinical Psychology course at UEA. His contact details are: K.Laidlaw@uea.ac.uk or 01603 59 3600.

Approval

The project would have had to have received ethical approval from a UK Research Ethics Committee.

Contact details

Dr Emma Hill: emma.l.hill@uea.ac.uk

Appendix C

Standard letter sent to GP and care coordinator

MRC Cognition and Brain Sciences Unit

University of East Anglia

STRICTLY PRIVATE AND CONFIDENTIAL

[Date]

RE: [name] participation in research study 'STAGE'

Full Title of Study: *A pilot study of a brief self-distancing and perspective-broadening training package for Bipolar Disorder.*

Chief Investigator and researchers: *Emma Hill, Martina Di Simplicio, Margo Ononaiye, Ken Laidlaw and Emily Holmes*

Ethics reference: *NRES Committee Wales REC 4, REC reference 15/WA/0271*

Dear [Dr] [name],

This is to inform you that your patient [name] is taking part in the above study '*STAGE'* (REC reference: 15/WA/0271, CI: Dr Emma Hill).

The study is a pilot behavioural study investigating the ability to *decenter* or 'step back' from one's emotions in individuals with Bipolar Disorder. A previously investigated *decentering* training package called Self-distancing and Perspective-Broadening [SD-PB] training uses a technique which is referred to as STAGE in order to aid individuals with Major Depressive Disorder in the ability to *decenter*. The current study adapts the same STAGE technique to investigate whether the ability to *decenter* can be improved in individuals with both depression and mania (Bipolar Disorder), and whether this reduces symptomatology.

The study involves completing daily mood measures of symptomatology for two weeks. Following this, the SD-PB training will commence, which comprises of two face-to-face sessions and one week of daily homework, during this time participants will be asked to

continue to fill out daily mood measures of symptomatology. An online follow-up will take place two weeks later.

Participation in the study is suitable for individuals with a diagnosis of Bipolar Disorder who are currently euthymic and happy to take part in clinical research. [name] was found eligible and consented to take part in the study and will complete the testing sessions over the next two weeks.

Please do not hesitate to get in touch if you have any queries.

Yours sincerely,

Dr Emma Hill (emma.hill@mrc-CBSU.cam.ac.uk)

Trainee Clinical Psychologist, University of East Anglia.

Supervised by Dr Martina Di Simplicio (martina.disimplicio@mrc-CBSU.cam.ac.uk)

Hon Consultant Psychiatrist, Career Development Fellow, MRC Cognition and Brain Sciences Unit.

Cc: [clinical team – if appropriate]

Appendix D
Recruitment timeline

02/12/14	UEA concluded the research proposal was a fail
24/02/15	UEA confirmed the failure of the research proposal
30/03/15	Re-submitted a revised version of the research proposal to UEA
30/04/15	UEA returned the re-submission as a pass but with amendments to be made
04/06/15	Submitted the research proposal to Sue Steel, Contracts Manager at UEA
10/07/15	Received confirmation of sponsorship from Sue Steel
13/07/15	Ethics application submitted for a REC review
05/08/15	Wales 4 REC committee met to review application
18/09/15	Response letter received from Wales 4 REC, with amendments
19/09/15	Submitted the amendments and response letter to Wales 4 REC
08/10/15	Received Ethics approval letter
09/10/15	Recruitment emails sent out to nine identified participants
10/10/15-22/01/16	Emailed potential participants when I received new names and helped recruitment for MRC-CBU studies in general to aid my recruitment. A break was required in testing during part of December due to Christmas holidays, it was decided that it would not be representative to do daily mood monitoring at this time (over the Christmas week)
21/12/15	Amendment submitted to Ethics to recruit from the general public through the use of posters in public places
22/01/16	The last date that a participant could start the study and be finished in time for the UEA thesis deadline date. Recruitment ended at 6 participants.

Appendix E

Quick Inventory of Depressive Symptomatology Self-Report (modified)

Please select the response to each item that best describes how you felt and behaved TODAY *since you went to sleep last night*.

1. Falling Asleep:

0. It took me no longer than 30 minutes to fall asleep.
1. It took me at least 30 minutes to fall asleep.
2. It took me at least 60 minutes to fall asleep.
3. It took me more than 60 minutes to fall asleep.

2. Sleep During the Night:

0. I did not wake up at night.
1. I had a restless, light sleep waking up briefly a few times.
2. I woke up at least once, but I went back to sleep easily.
3. I woke up more than once and stayed awake for 20 minutes or more.

3. Waking Up Too Early:

0. I woke up no more than 30 minutes before I needed to get up.
1. I woke up more than 30 minutes before I needed to get up.
2. I woke up at least one hour or so before I needed to get up, but I went back to sleep eventually.
3. I woke up at least one hour before I needed to get up, and could not go back to sleep.

4. Sleeping Too Much:

0. I slept no more than 7-8 hours, without napping during the day.
1. I slept no more than 10 hours in the last 24-hour period including naps.

2. I slept no more than 12 hours in the last 24-hour period including naps.

3. I slept more than 12 hours in the last 24-hour period including naps.

5. Feeling Sad:

0. I do not feel sad.

1. I feel sad less than half the time.

2. I feel sad more than half the time.

3. I feel sad nearly all of the time

6. Decreased Appetite:

0. There is no change in my usual appetite.

1. I eat somewhat less often or lesser amounts of food than usual.

2. I eat much less than usual and only with personal effort.

3. I have rarely eaten within the last 24-hour period, and only with extreme personal effort or when others persuade me to eat.

Or 7. Increased Appetite:

0. There is no change from my usual appetite.

1. I feel a need to eat more frequently than usual.

2. I regularly eat more often and/or larger amounts of food than usual.

3. I feel driven to overeat both at mealtimes and between meals.

8. Concentration/Decision Making:

0. There is no change in my usual capacity to concentrate or make decisions.

1. I occasionally feel indecisive or find that my attention wanders.

2. Most of the time I struggle to focus my attention or to make decisions.

3. I cannot concentrate well enough to read or cannot make even minor decisions.

9. View of Myself:

0. I see myself as equally worthwhile and deserving as other people.

1. I am more self-blaming than usual.
2. I largely believe that I cause problems for others.
3. I think almost constantly about major and minor defects in myself.

11. General Interest:

0. There is no change from usual in how interested I am in other people or activities.
1. I notice that I am less interested in people or activities.
2. I find I have interest in only one or two of my formerly pursued activities.
3. I have virtually no interest in formerly pursued activities.

12. Energy Level:

0. There is no change in my usual level of energy.
1. I get tired more easily than usual.
2. I have to make a big effort to start or finish my usual daily activities (for example, shopping, homework, cooking or going to work).
3. I really cannot carry out most of my usual daily activities because I just don't have the energy.

13. Feeling More Sluggish Than Usual:

0. I think, speak, and move at my usual rate of speed.
1. I find that my thinking is more sluggish than usual or that my voice sounds dull or flat.
2. It takes me several seconds to respond to most questions and I am sure my thinking is more sluggish than usual.
3. I am often unable to respond to questions without extreme effort.

14. Feeling Restless:

0. I do not feel restless.
1. I'm often fidgety, wringing my hands, or need to shift around when I am sitting.
2. I have impulses to move about and am quite restless.
3. At times, I am unable to stay seated and need to pace around.

15. Feeling Anxious and Fearful:

(such as being afraid of dying, of losing control, afraid of the worst happening, terrified, nervous, scared, unable to relax)

0. I do not feel at all anxious and fearful.

1. I feel mildly anxious and fearful, it does not bother me much.

2. I feel moderately anxious and fearful, it is very unpleasant but I can stand it.

3. I feel severely anxious and fearful I can barely stand it.

16. Physical Anxiety Sensations:

(such as feeling hot, numbness or tingling wobbliness in my legs, flushing, sweating not due to heat, shaking, heart racing, choking, dizzy or lightheaded, unsteady, hands trembling, difficulty breathing, fainting, indigestion or discomfort in abdomen)

0. I do not experience physical signs of anxiety at all.

1. I experience mild physical signs of anxiety, it does not bother me much.

2. I experience moderate physical signs of anxiety, it is very unpleasant but I can stand it.

3. I experience moderate severe signs of anxiety, I can barely stand it

Appendix F

Altman Self Rating Mania Scale

On this questionnaire are five groups of statements; read each group of statements carefully. Choose the one statement in each group that best describes the way you have been feeling TODAY and circle the number next to the statement you picked. Please note that the word 'occasionally' when used here means once or twice; 'often' means several times or more; 'frequently' means most of the time.

1) 0 – I do not feel happier or more cheerful than usual.
   1 – I occasionally feel happier or more cheerful than usual
   2 – I often feel happier or more cheerful than usual
   3 – I feel happier or more cheerful than usual most of the time
   4 – I feel happier or more cheerful than usual all of the time

2) 0 – I do not feel more self-confident than usual
   1 – I occasionally feel more self-confident than usual
   2 – I often feel more self-confident than usual
   3 – I feel more self-confident than usual most of the time
   4 – I feel extremely self-confident all of the time

3) 0 – I do not need less sleep than usual
   1 – I occasionally need less sleep than usual
   2 – I often need less sleep than usual
   3 – I frequently need less sleep than usual
   4 – I can go all day and night without any sleep and still not feel tired

4) 0 – I do not talk more than usual

   1 – I occasionally talk more than usual

   2 – I often talk more than usual

   3 – I frequently talk more than usual

   4 – I talk constantly and cannot be interrupted

5) 0 – I have not been more active (either socially, sexually, at work, home or school) than usual

   1 – I have occasionally been more active than usual

   2 – I have often been more active than usual

   3 – I have frequently been more active than usual

   4 – I am constantly active or on the go all the time

Appendix G

Beck Anxiety Inventory

Below is a list of common symptoms of anxiety. Please read each item in the list carefully. Indicate how much you have been bothered by each symptom during the PAST WEEK, INCLUDING TODAY, by placing an X in the corresponding space in the column next to each symptom.

		Not at all	Mildly It did not bother me much	Moderately It was very unpleasant but I could stand it	Severely I could barely stand it.
1.	Numbness or tingling				
2.	Feeling hot				
3.	Wobbliness in legs				
4.	Unable to relax				
5.	Fear of the worst happening				
6.	Dizzy or lightheaded				
7.	Heart pounding or racing				
8.	Unsteady				
9.	Terrified				
10.	Nervous				
11.	Feelings of choking				

12.	Hands trembling				
13.	Shaky				
14.	Fear of losing control				
15.	Difficulty breathing				
16.	Fear of dying				
17.	Scared				
18.	Indigestion/discomfort in abdomen				
19.	Faint				
20.	Face flushed				
21.	Sweating (not due to heat)				

Appendix H

Affective Lability Scale-short form

Participant Number: _____Date: _____

Directions: This questionnaire is designed to find out about people's moods. Using the scale below, select the letter that best describes how descriptive each item is of you.

Very characteristic of me, extremely descriptive	**Rather characteristic of me, quite descriptive**	**Rather uncharacteristic of me, quite undescriptive**	**Very uncharacteristic of me, extremely undescriptive**
A	**B**	**C**	**D**

For each item, circle only one answer.

1. At times I feel just as relaxed as everyone else and then within minutes I become so nervous that I feel light-headed and dizzy.

A **B** **C** **D**

2. There are times when I have very little energy and then just afterwards I have about the same energy level as most people.

A **B** **C** **D**

3. One minute I can be feeling OK and then the next minute I'm tense, jittery, and nervous.

A **B** **C** **D**

4. I frequently switch from being able to control my temper very well to not being able to control it very well at all.

A **B** **C** **D**

5. Many times I feel nervous and tense and then I suddenly feel very sad and down.

A **B** **C** **D**

6. Sometimes I go from feeling extremely anxious about something to feeling very down about it.

A **B** **C** **D**

Very characteristic of me, extremely descriptive	**Rather characteristic of me, quite descriptive**	**Rather uncharacteristic of me, quite undescriptive**	**Very uncharacteristic of me, extremely undescriptive**
A	**B**	**C**	**D**

7. I shift back and forth from feeling perfectly calm to feeling uptight and nervous.

A **B** **C** **D**

8. There are times when I feel perfectly calm one minute and then the next minute the least little thing makes me furious.

A **B** **C** **D**

9. Frequently, I will be feeling OK but then I suddenly get so mad that I could hit something.

A **B** **C** **D**

10. Sometimes I can think clearly and concentrate well one minute and then the next minute I have a great deal of difficulty concentrating and thinking clearly.

A **B** **C** **D**

11. There are times when I am so mad that I can barely stop yelling and other times shortly afterwards when I wouldn't think of yelling at all.

A **B** **C** **D**

12. I switch back and forth between being extremely energetic and having so little energy that it's a huge effort just to get where I am going.

A **B** **C** **D**

13. There are times when I feel absolutely wonderful about myself but soon afterwards I often feel that I am just about the same as everyone else.

A **B** **C** **D**

14. There are times when I'm so mad that my heart starts pounding and/or I start shaking and then shortly afterwards I feel quite relaxed.

A **B** **C** **D**

Very characteristic of me, extremely descriptive	**Rather characteristic of me, quite descriptive**	**Rather uncharacteristic of me, quite undescriptive**	**Very uncharacteristic of me, extremely undescriptive**
A	**B**	**C**	**D**

15. I shift back and forth between being very unproductive and being just as productive as everyone else.

A **B** **C** **D**

16. Sometimes I feel extremely energetic one minute and then the next minute I might have so little energy that I can barely do a thing.

A **B** **C** **D**

17. There are times when I have more energy than usual and more than most people and then soon afterwards I have about the same energy level as everyone else.

A **B** **C** **D**

18. At times I feel that I'm doing everything at a very slow pace but then soon afterwards I feel that I'm no more slowed down than anyone else.

A **B** **C** **D**

Appendix I

Experiences Questionnaire (EQ)

To what extent do you agree with the following statements? For each statement, please circle one of the points on the scales from 1 = *never* to 5 = *all the time*

I think about what will happen in the future.	1 2 3 4 5
I remind myself that thoughts aren't facts.	1 2 3 4 5
I am better able to accept myself as I am.	1 2 3 4 5
I notice all sorts of little things and details in the world around me.	1 2 3 4 5
I am kinder to myself when things go wrong.	1 2 3 4 5
I can slow my thinking at times of stress.	1 2 3 4 5
I wonder what kind of person I really am.	1 2 3 4 5
I am not so easily carried away by my thoughts and feelings.	1 2 3 4 5
I notice that I don't take difficulties so personally.	1 2 3 4 5
I can separate myself from my thoughts and feelings.	1 2 3 4 5
I analyze why things turn out the way they do.	1 2 3 4 5
I can take time to respond to difficulties.	1 2 3 4 5

I think over and over again about what others have said to me.	1 2 3 4 5
I can treat myself kindly.	1 2 3 4 5
I can observe unpleasant feelings without being drawn into them.	1 2 3 4 5
I have the sense that I am fully aware of what is going on around me and inside me.	1 2 3 4 5
I can actually see that I am not my thoughts.	1 2 3 4 5
I am consciously aware of a sense of my body as a whole.	1 2 3 4 5
I think about the ways in which I am different from other people.	1 2 3 4 5
I view things from a wider perspective.	1 2 3 4 5

Appendix J

Cognitive Emotion Regulation Questionnaire (CERQ)

Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her own way. By the following questions you are asked to indicate what you generally think, when you experience negative or unpleasant events.

For each statement, please circle the number that represents how often you feel a certain way. The scales are from 1 = *almost never* to 5 = *almost always*.

1. I feel that I am the one to blame for it. 1 2 3 4 5
2. I feel that I am the one who is responsible for what has happened. 1 2 3 4 5
3. I think about the mistakes I have made in this matter. 1 2 3 4 5
4. I think that basically the cause must lie within myself. 1 2 3 4 5
5. I think that I have to accept that this has happened. 1 2 3 4 5
6. I think that I have to accept the situation. 1 2 3 4 5
7. I think that I cannot change anything about it. 1 2 3 4 5
8. I think that I must learn to live with it. 1 2 3 4 5
9. I often think about how I feel about what I have experienced. 1 2 3 4 5
10. I am preoccupied with what I think and feel about what I have experienced. 1 2 3 4 5
11. I want to understand why I feel the way I do about what I have experienced. 1 2 3 4 5
12. I dwell upon the feelings the situation has evoked in me. 1 2 3 4 5
13. I think of nicer things than what I have experienced. 1 2 3 4 5
14. I think of pleasant things that have nothing to do with it. 1 2 3 4 5
15. I think of something nice instead of what has happened. 1 2 3 4 5
16. I think about pleasant experiences. 1 2 3 4 5

17. I think of what I can do best. 1 2 3 4 5

18. I think about how I can best cope with the situation. 1 2 3 4 5

19. I think about how to change the situation. 1 2 3 4 5

20. I think about a plan of what I can do best. 1 2 3 4 5

21. I think I can learn something from the situation. 1 2 3 4 5

22. I think that I can become a stronger person as a result of what has happened. 1 2 3 4 5

23. I think that the situation also has its positive sides. 1 2 3 4 5

24. I look for the positive sides to the matter. 1 2 3 4 5

25. I think that it all could have been much worse. 1 2 3 4 5

26. I think that other people go through much worse experiences. 1 2 3 4 5

27. I think that it hasn't been too bad compared to other things. 1 2 3 4 5

28. I tell myself that there are worse things in life. 1 2 3 4 5

29. I often think what I have experienced is much worse than what others have experienced. 1 2 3 4 5

30. I keep thinking about how terrible it is what I have experienced. 1 2 3 4 5

31. I often think that what I have experienced is the worst that can happen to a person. 1 2 3 4 5

32. I continually think how horrible the situation has been. 1 2 3 4 5

33. I feel that others are to blame for it. 1 2 3 4 5

34. I feel that others are responsible for what has happened. 1 2 3 4 5

35. I think about the mistakes others have made in this matter. 1 2 3 4 5

36. I feel that basically the cause lies with others. 1 2 3 4 5

Appendix K

Full set of scenarios used in the study

24 scenarios in total (4 for session 2 part 1, 4 for session 2 part 2, 12 for homework, 4 for session 3 part 1)

Scenarios which tap into ways of processing situations in depression:

1. You are in work one day and have an idea which you think would make a difference to the way things run. You think long and hard about it, checking it over in your mind that you haven't missed something silly out. In the afternoon you pluck up the courage to go to your manager and tell them about your idea. The manager is quite busy at the time and acknowledges your idea but then says he is far too busy to talk.

2. You are in town on a Saturday, it is very busy but you decide you want to have a look round the sales. You are in a shop queuing at the till when you see an old school friend. They are browsing in an isle not far from you and then looks straight at you. You smile and raise your hand slightly to say hello, but they do not respond at all. It is like they haven't seen you but they did seem to be looking straight at you.

3. You overhear some work colleagues laughing one day. Suddenly you realise that they are mimicking something someone has said. You start to believe that it must be you because you don't know who else could have possibly said those things. You don't want them to see you so quickly walk in the opposite direction feeling embarrassed and annoyed. You had thought that you got on all right with these people, but now you're not at all sure.

4. You arranged weeks ago that you would go out for a meal with all of the family. Usually you think this is nice and look forward to it, but over the last few days there have been tensions between some family members. You especially have noticed being caught up in the middle of it all and just really hope that it doesn't all explode out over dinner. The day comes round that you are due to meet them but you have an overwhelming feeling of not wanting to go.

5. It is reaching the end of the month and money is getting really tight. You know you have

loads of bills that are about to come out of your account and just hope you get paid before they do. You are just waiting for pay day to come round. You just about make it to payday and check your account. It turns out that the day before pay day you went into your overdraft and the bank and now charging you a silly amount because of it. This is the last thing you need.

6. You are out doing your weekly shop when you hear your name being called. You turn around to see a very old friend from school coming towards you. You put on a smile and make the effort to ask how they are and what they are up to now. You talk for a little while, mainly about them, they seem to have done so well in life. You begin comparing yourself to them and feel embarrassed to talk about yourself, so you try to keep the subject on them as much as possible. You leave the conversation feeling very reflective.

7. You are walking to an important meeting when it suddenly starts raining. Luckily you have your umbrella so you think you shouldn't get too wet. Then it starts hailing and the umbrella gets blown all over the place. You can feel the bottoms of your trousers getting wet from the puddles on the floor and now your whole trousers are looking wet from the wind blowing the hail stones under your umbrella. You arrive at the meeting soggy, wind-swept and flustered.

8. It is time to go to bed but you can't sleep. You keep tossing and turning thinking about things. You eventually fall asleep only to have a horrible nightmare and you wake up really quite upset from it. Then again you struggle to get back to sleep again. You end up waking up in the morning before your alarm clock has gone off, you have hardly had any sleep. You keep thinking about those nightmares and just really want to sleep some more but know you can't as you need to be in top form for an important meeting in an hour.

9. You find out that a group of friends of yours from school had a big get together last weekend. You had not heard a think about it until now. You wonder whether to ask one of them about it, but you know that would just make this difficult. You can't help but think about how this happened and how you got left out of this event. You then begin to wonder what kind of friendship you now have with them.

10. You are with a group of friends from work who you know fairly well and get on with ok. They are all talking about people at work and picking up on funny things that people do. They move on to behaviours that they find a bit weird, and someone makes a jokey comment about something you do. This is something that you have never realised but now you feel quite conscious of it and embarrassed. The others start laughing along with the person who made the comment.

11. You wake up one day startled as you realise that you have overslept. This is the worst day for this to happen as you have booked things in all day almost back to back. As the day goes on you are late for each thing that you had planned and need to keep apologising for it. You get home and you are exhausted and emotionally drained from rushing around all day.

12. You are invited to a wedding of a very old school friend of yours. You don't really see this friend much anymore and have lost touch with other people from school too. You are a bit worried about going but nevertheless you attend the wedding. Come the evening you have had enough so you head over to the bride and groom to say goodbye, they don't seem happy that you are leaving so early, make you feel guilty and ask you to stay.

13. It is your appraisal at work and your manager sits you down to talk about your areas of strength and areas that need work. They say you have many areas of strength such as your creativeness and ability to keep to deadlines. Then they begin on the areas that need work and that could be set as goals for the future, it is mentioned that you are not always careful with double-checking things which means that sometimes mistakes are made. You agree at the time that this could be a goal or yours but you begin to feel a bit disheartened when you leave their office.

14. You have been organising a get together with a group of friends of yours. You have found a date that everyone can do and have booked a table at a restaurant. It is the week before you are due to go out for this meal and one of your friends says that they don't feel well and think it is unlikely they will be able to come. Then a couple of days later you get another message from another friend saying that they have double-booked. You now need to either change the booking or cancel.

Scenarios which tap into ways of processing situations in mania:

1. It is your birthday and you have received a few cards in the post. You open one of the cards from a friend of yours and as you open it a scratch card falls out. It says on the front of the scratch card that you win different amounts of money according to what type of symbols you match up. You need three symbols to match up to win a prize. The top prize is £10,000 and the bottom prize in £5. You decide that you cannot wait and you start scratching the card with a coin. You get two symbols matching and you stop for a moment and start thinking 'what if' I win £10,000.

2. You wake up on a workday, just like any other work day. You get yourself sorted and make your way into work. You pull up in the car park at work and you notice that there are very few cars in the car park compared to normal. You think this is a bit strange but you head in anyway. As you open the door and head in you struggle to see many people around. Then your manager comes up to you and says "oh, did you not get the message. The heating is not working today so everyone has a paid day off work". You head back to your car and wonder what you will do with your day.

3. You get a bill through the post. You know it is a bill as it has the energy company's logo on the front as usual. You start worrying how much money you owe the energy company. You gingerly open the envelope to find it looks a bit different to usual. It says that the balance on your account is £80, and that the amount you have to pay is zero. This is a bit confusing at first, but surely enough the letter explains that you overpaid before and that you now have nothing to pay for the last few months' energy.

4. It is New Year and your partner tells you that they have something very special planned for you. Your partner will not tell you what it is, just that you should wear clothes that you would wear for a party. They tell you that you deserve a treat. The more time that goes past the more you start to wonder what this might involve. You wonder whether they have something big to announce or whether they are planning a big party.

5. It is time for appraisals at work. Other people have gone in to have theirs that you work with and they have all come out to say that it has gone ok. You get called in to your appraisal and your manager tells you that they have never witnessed such dedication from any of their employees before. They tell you that they are expecting big things from you in the future and that you should think about applying for the managerial position.

6. You are watching the TV at home one night and the apprentice comes on. You always watch this programme and you find it really entertaining. On the programme the people are asked to design a new high-end product. You watch this programme and you start thinking that the people on the programme are not doing a very good job. You start thinking that maybe you could do a better job.

7. You have arranged an evening with some of your friends. You have not seen them for such a long time and have been looking forward to this. You have planned to go out to a local restaurant for dinner and then on to a pub for some drinks. As the day gets closer you start to worry about whether you will still have as much to talk about now. On the day you cannot stop thinking about it.

The evening draws in and you get yourself ready. You stop at the door and wonder whether you should go after all.

8. It is a friend's birthday and they have organised a small trip to the pub after work. You arrive and some people only stay for a short amount of time and leave. You are enjoying yourself so you stay longer and have a few more drinks. Despite having a very early start the next day you manage to persuade a couple of people to head out into a club in town. It gets to midnight and you want to stay out but the others head home together.

9. You are on the bus on the way home from work. The bus stops and very attractive person comes to sit next to you. The bus gets stuck in traffic and you know this is going to be a long ride home tonight. The person next to you starts talking to you and you seem to have lots in common. You are enjoying yourself and they seem to be interested in you. The bus reaches both of your stops and they ask you whether you would like to go back to their house for a drink.

10. You stay up late one night researching on the internet for a trip you have planned. You have been searching for hours and it is now about 1am in the morning. You know you should sleep but you have found some great deals that you want to keep pursuing. A little time goes past and you try to get to sleep. You struggle to sleep as all you can think about is the holiday and new ideas keep popping into your mind.

11. You are invited to a fancy dress party and usually you put lots of time into your outfits. However, this time you have been so busy that you haven't even thought about it. It is a few days before the party and you know you need to get something sorted so you decide the best option is to make something. You dash from shop to shop getting fabric, glue, pens, and novelty accessories and end up spending hours each night working on your outfit. You are exhausted by the time the party arrives.

12. You wake up one day feeling really energized. You get your to-do list out and decide to blitz it. You are ticking each thing off as you go and the more you do the better you feel about yourself. You actually reach the end of your to-do list which you haven't done in ages so you decide to see if anyone in your family needs any help with anything as you have elderly relatives and an afternoon free. It seems that you can achieve anything today and don't feel like you are getting tired at all.

13. You can an email through to say that one of your favourite websites is having a 24 hour online sale. You get the email straight away as you happen to be on your email and you think to yourself that if you are quick you might be able to get things before other people see the email. You search through the site putting things in your basket that you need and don't so much need as well.

You then start to see items go out of stock so you decide to just buy everything in your basket in case any other things start going out of stock. After you have paid you realise the order totals to more than you expected.

14. You are tidying up at home when you come across £20 in cash tucked into a book of yours. You can't even remember leaving it there but you are overjoyed as money has been really tight lately. You think over what to do, do you put it in a safe place as you could do with a 'rainy day' fund this month or do you go and buy a takeaway as you are really craving one. You decide that it was such good luck that you should just treat yourself and have a nice takeaway.

Appendix: L

Participant Consent Form

Version date: 17.08.15

Participant Consent Form

Participant ID: _____ (to be completed by researcher)

Study Title: A pilot study of a brief self-distancing and perspective-broadening training package for Bipolar Disorder.

Chief Investigator: Dr Emma Hill Please initial box

I confirm that I have been given a copy of the participant information sheet (version dated 04.06.15) for the above study, which I have read. ☐

I was given the opportunity to ask questions and discuss any concerns with the chief investigator. ☐

I understand that my participation is voluntary and I can withdraw at any time without giving a reason. ☐

I understand that all information collected as part of the study will be treated as completely confidential and that relevant sections of data collected during the study may be looked at by individuals from the University of East Anglia. I give permission to these individuals to have access to my data which will be anonymised. ☐

I understand that any records will be kept in a password-protected computer and in a locked cabinet and will only be accessible to relevant research staff. ☐

I understand that the study will involve attending three sessions and completing tasks in-between those sessions. ☐

I agree to share the contact details of my GP and care coordinator (if applicable) with the researcher so that they can inform them via a standardized letter that I am taking part in the study. ☐

I agree to take part in the above study ☐

Name of participant Date Signature

_____ _____ _____

Name of researcher Date Signature

_____ _____ _____

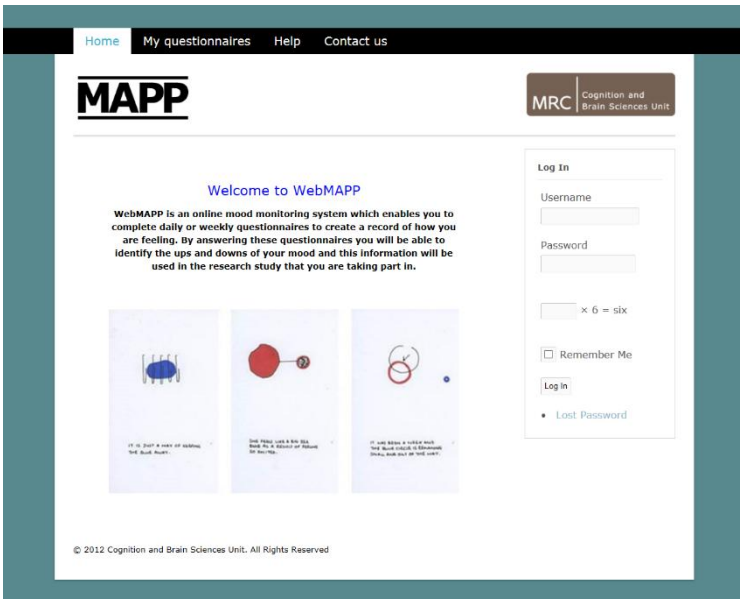
Once the consent form is signed by both the participant & the researcher, 1 copy will be posted back to participant and 1 (the original) will be kept in a confidential research fie.

Appendix: M

WebMAPP instruction sheet

How to use WebMAPP

WebMAPP is a secure website developed by the MRC-CBSU to allow participants to fill in questionnaires on a daily basis.



These are the step-by-step instructions of how to use the website and complete the questionnaires:

1. Log in using your unique username and password given to you in Session one.
2. You will be asked to fill out two questionnaires, called the QIDS-M and the Altman, every day. Complete these by clicking in the selection box next to the appropriate response. If you miss an item you will be unable to submit your questionnaire responses and the missing item will appear in red. When you have gone back to this item and completed it you will be able to submit your responses.
3. Click the 'next' button to take you to the second page of questions.
4. Do the same with the second page of questions and then press the 'submit' button. Completing these should take around 5 mins.

FAQs:

What if I need help? The 'contact us' form can be used to let us know if you are having any problems with the website or with completing the questionnaires. You do not have to be logged in to the website to access this form so if you forget your password you can also use this to let us know and we will be able to give you a new password.

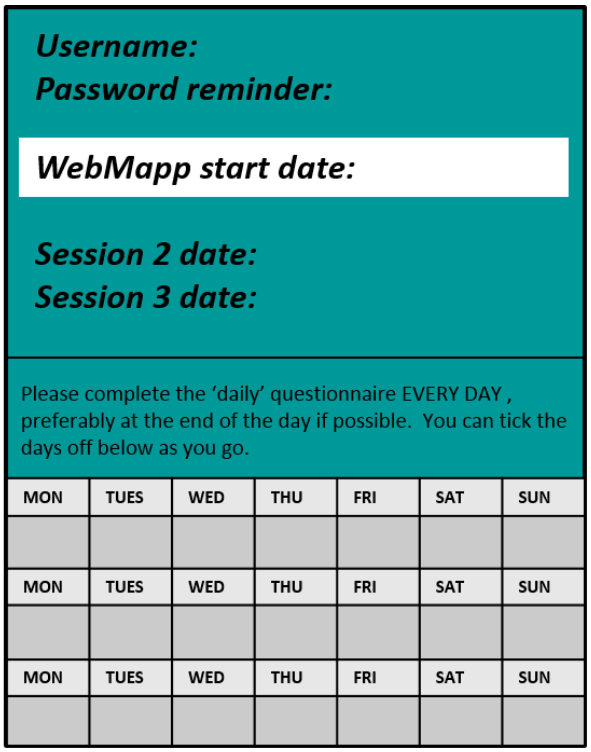
When do I fill the questionnaires out? We are going to ask you to start tomorrow with your daily mood monitoring. The daily mood monitoring stage will last for 3 weeks. Please complete the daily monitoring after midday, ideally around 6pm or in the evening so that you can assess how your day was.

Will I be reminded? During the daily mood monitoring stage we will send you email reminders to help you to remember to complete the questionnaires. You will receive 1 reminder at 6pm. There will also be a final reminder at 9pm which will only be sent out if you have not already completed your questionnaire.

What if I miss one? If you miss a daily questionnaire you will receive another email the following morning. We may also give you a call to try and problem-solve any difficulties and discuss how we can try to help you complete the questionnaires on time.

Appendix: N

WebMAPP card



Appendix O

Psycho-education sheet about the SD-PB training

We are doing research into how people handle every day upsetting events that happen to us. The types of events we are referring to are things such as, a difficult day at work or someone saying something that upset you. They are things that can happen quite regularly, and the feelings they produce can sometimes linger around for hours or put you in a bad mood for the rest of the day.

We are doing research using different psychological techniques into ways to help reduce the impact of such events. The research we do is especially applicable to those who suffer from emotional disorders, such as depression and bipolar disorder.

As I'm sure you know, sometimes we can get caught up in the details of situations that we find upsetting. What is more, these thoughts are almost always about the negative or bad aspects of the situation.

We think that two different but related things are happening when people think in this way. Firstly, they lose sight of the 'bigger picture', and get sucked into the specific details of something without any sense of perspective on it. Secondly, people tend to indulge in what we call 'black and white thinking'. This is where they are only able to see things in extreme ways – as either all good or all bad. An easy way to detect signs of 'black and white thinking' is through the words people use, such as 'always, never, disastrous'. When put into sentences, a typical black and white sentence would be 'I can't do anything right'.

What we want to do in our research is look at ways of challenging these two aspects of thinking. First, by helping people to learn to step back from situations in order to see the bigger picture – what we call **Self -distancing**. And, second, by helping people to use that wider perspective to see situations in terms of shades of grey so that everything isn't simply all good or all bad – what we call **Perspective-broadening.**

The **Self-distancing** training involves learning to step back from the emotions in an event using a mental imagery (imagination) task.

How it works is that you will be asked to think about one of the events in your list. Although it often feels more natural to avoid thinking about upsetting things in the long run it is usually better to focus on things that have upset you and process them in your mind and so please bear with us and try this approach. .

Once you have brought the event to mind in detail, we will practice mentally stepping back from that event to create a wider perspective. We are very aware that it is sometimes hard to come up with mental images of things that have happened in the past so all we ask you to do it have a go at this.

After we have done the self-distancing exercises, we will practice different techniques that can be applied from this broader perspective. This will focus on the second part of training; **Perspective-broadening**. This involves thinking in shades of grey instead of simply in black and white terms. Thinking in shades of grey is when someone thinks about an emotional event or situation in terms of all its different elements, not just thinking about an event in wholly negative terms. It is the kind of thinking that produces phrases like 'looking back, that wasn't as awful as it seemed at the time' or 'well actually something good did come out of that'.

There are different 'tricks' you can use to help you think in less black and white ways and we will provide you with five such strategies which we will take you through today These five strategies will cover five different dimensions in which to think about an event. We have found that trying to use 'perspective-broadening' thinking in these different ways very often changes your perspective on an upsetting experience in a way that reduces your distress and helps put the experiences in context.

How it works is that you will be asked to work through each one of these strategies and see how they can be applied to one of the events on your list.

Now that we have explained the two mind training techniques we will now give you the chance to try each of them out on real events in your life. The experimenter will now take you through the practice session.

Appendix P

Standardised semi-structured script to introduce the SD-PB training

In this exercise we will put into practice the ideas about self-distancing

Firstly, remind yourself of the event from your list.

{PAUSE}

May I ask for a very brief description of what it is?

{DISCUSS}

It is easy for your mind to wonder to other memories when doing this, if this happens then just try to bring it back to the original emotional memory.

We are now going to spend some time practicing creating a perspective space as described in the video. It is very important that you know that there is no right or wrong way to do this, and that it can sometimes be a bit difficult at first, so don't worry if you struggle with it to start with. Try as much as you can to not place too much pressure on yourself or be too critical, stick with it and we are here to guide you through at your pace.

The exercise works better if you feel physically relaxed, are you feeling comfortable?

Now I am going to ask you to bring to mind the memory we spoke about a few moments ago. Most people find this easier if they close their eyes, but it is up to you.

What I want you to do now is to think of the memory in a bit more detail and build a mental picture of it playing out again, seeing the events unfold. Try as much as you can to think about the details, it might be that you can remember what and who was around you, what you said, what you were thinking. You may find this difficult first time round, and that is completely normal and expected. I'll give you some time to do this, just give me a nod or say ok when you are ready for the next instruction.

{PAUSE}

You may find the memory is a mix of fleeting images, recollections of what was said, thoughts and feelings. That's fine. If possible, I would now like you to mentally 'replay' the event in your mind. You don't have to do this from the start to finish. You may first find it easier to focus on particularly vivid bits of the memory – have a go at this.

{PAUSE}

What emotions, if any are you feeling right now?

{DISCUSS}

Rate1-10 how vivid your imagined scene is in your mind

1= I cannot imagine this at all, 5 = I have a vague picture in my mind but its blurry, 10 = I can picture the scene and all the details

{DISCUSS}

Okay. What I want to do now is try out the perspective-broadening exercise. First I want to ask you to imagine that the memory you have in mind is actually taking place on a stage, like a theatre stage, and that you are playing yourself as one of the actors. You are in the midst of what is happening and you can look around the stage and see the other people involved. You can be as inventive as you like with this, it may help to think that the actual room where the event took place is on your stage. Note that there is no audience watching this - it is just you and the characters that were in your event. Watch the events as they unfold around you on the stage as best you can and try to visualise what was around you at the time and where everyone was situated. Try to do this and then act out the scene in your mind over again.

{PAUSE}

You have created the scene on the stage, Now think about how you are feeling on this stage. Again don't worry if the images and feelings are a bit jumbled up. I am going to give you a few moments to keep imagining that you are on the stage going through that time again. Try to get into the scene and your feelings about it as much as you can.

{PAUSE}

Rate1-10 how vivid your imagined scene is in your mind

1= I cannot imagine this at all, 5 = I have a vague picture in my mind but its blurry, 10 = I can picture the scene and all the details

{DISCUSS}

Now so that we can create a perspective space I am now going to ask you to imagine walking off of that stage, just leaving this scene from your life behind for a minute. Note that you are only leaving briefly and will come back again later. Imagine that you are walking off stage and making your way up a winding staircase backstage. Picture yourself doing this.

{PAUSE}

You reach the top of the staircase and you find yourself up in a balcony box overlooking the stage. Imagine taking a seat in the balcony box, take this moment to actually change the way you are sitting now, readjust yourself so you are sitting confidently yet comfortably.

{PAUSE}

Now as you look down on the stage, you can see the scene from a different angle, an angle you could never have achieved if you stayed on the stage. You can see yourself down there and any others involved in this event. Take a few moments to imagine sitting in the balcony box and looking down on the stage. Have a think about what you can see from this bird's eye view. When you feel you have a clear picture in your mind of the stage let me know.

Ok, You have managed to create a broader perspective; I will give you a few moments to picture the memory again from this new vantage point. When watching the memory play out, if you feel yourself being 'transported' in your imagination back onto the stage, give yourself a moment to put yourself back into the balcony box.

{PAUSE}

Rate1-10 how vivid your imagined scene is in your mind

1= I cannot imagine this at all, 5 = I have a vague picture in my mind but its blurry, 10 = I can picture the scene and all the details

{DISCUSS}

Do you notice any changes in your thoughts or feelings envisaging the scene from this different perspective?

{DISCUSS}

OK when you're ready, please clear your mind of the memory slowly and come back to the present.

Practice of Perspective-broadening:

In this session we will put into practice the ideas about Perspective-broadening

We have put together a list of FIVE strategies aimed to help you think about the shades of grey in your life, and to avoid thinking about things in wholly positive or negative terms. Grey thinking would be to think about an emotional event in a new way, a way that helps you to break down all the aspects of the event. By using these strategies on emotional events you will find new ways to think about things, and are likely to find you feel more positive and less stressed by such events.

The five strategies OF PERSPECTIVE BROADENING ARE:

SIMILAR: Thinking about other times you have experienced similar events to this that turned out ok.

TIME: Imagining how you will feel less distressed about it in the future.

AREAS: Thinking about the event in the context of your wider life and especially to concentrate on the more positive things that are going on in other areas of your life.

GREY: Focusing on aspects of this situation which may not be all bad

ELSE: Imagine that this event is happening to someone else you care about, you would say to them to make them see things in a less negative way.

It is important to remember that not every strategy will be helpful for every event/situation that you find yourselves in. For example it may be that if something really upsetting happened you may find that there is nothing much that will make you feel better. For situations such as these it may be really tough to think about them and it's ok to feel this way, we just hope to try to take the edge off of them.

However, there may be some events/situations where many strategies would help you to think about it differently.

I would like for you to think about the event that we JUST worked with. We will then take each OF THE strategies and see if it can be applied to your event. I will draw a diagram with you to help us keep track of the strategies we are using.

{DRAW SPIDER DIAGRAM}

Now please take a few moments to go over in your mind what we just practiced with the idea of the stage. I will take you through the steps.

Firstly bring to mind as much detail as you can about the event.

Now imagine that this event is being played out on the stage and you are playing yourself in the scene.

It is now time to picture yourself walking off the stage, and walking up the staircase to your balcony box; your thinking space.

Spend a few moments getting used to being in the balcony box, take some time to watch the scene from the balcony box.

Let us now take the first strategy:

SIMILAR… Think about a time in your life when you have experienced a similar event happen, but where the event was not distressing. For example, when you had a positive experience with that person, or enjoyed yourself at a similar event, or had something positive said to you recently.

{PAUSE}

OK, have you thought of a similar event that is not distressing? May I ask for a very brief description of what it is?

Prompting question IF NEEDED: Can you think of a non-distressing memory with the person involved? Or if this memory makes you feel bad do you have a memory of an event that made you feel the opposite (positive about yourself)?

{PAUSE}

What did the strategy 'SIMILAR' make you think of and how did it make you feel? Have a think about this and then we will talk about it briefly.

{PAUSE AND DISCUSS}

If response is negative: *'Sometimes our natural thinking pattern may shift you to broaden your perspective in a negative way. This is very common and it is this tendency that the exercises are designed to help with. Do you notice however that it doesn't make you feel any better?'*

How do you feel about working a bit more with this strategy? If you think you might find it helpful then we can bring the idea of the stage to mind.

If they want to go on with the idea of the stage:

Now we are going to bring the idea of the stage to mind that we worked through earlier and incorporate this new thinking strategy to the scene.

First I want to ask you to imagine that the memory you have of a similar event/situation is actually taking place on the stage. Imagine that you are sitting in your balcony box watching the scene play out; you can see yourself as one of the actors and any other people that were involved in this similar event.

Try to do this and watch this similar event play out all the way to the end.

{PAUSE}

Now imagine closing the curtains on this similar event.

{PAUSE}

Take some time now to imagine sitting in your balcony box looking down on the stage where you as an actor are standing alone now. What would you say as guidance and reassurance to yourself as the actor on the stage from what you just experienced? Concentrate your thoughts on how you would help your actor to see the shades of grey in the emotional event.

{PAUSE}

Now take some time to think about whether playing out the similar event made you feel any

You may have found that the strategy was really helpful for you; on the other hand it may be the case that the strategy did not really quite fit the scene and it did not really help with your ideas. Either way the strategies are designed to help provide ideas in different ways, therefore it is always worth seeing what the other strategies can do for you.

{PAUSE}

Let us now think about the next strategy:

TIME…Think about the event in terms of placing it on a timeline. Try to imagine what it is going to feel like when you feel less emotional about the event. It may be that you already feel less emotional about the event now than when it happened; it is this ability of time to mellow our emotions that we want to try and use. Think about how you might feel next week, and even how you might feel a year on from now.

{PAUSE}

Prompting question: How might you feel in a few weeks from now about the memory? How might your feelings change?

What did the strategy 'TIME' make you think of and how did it make you feel? Have a think about this and then we will talk about it briefly.

{PAUSE AND DISCUSS}

If they want to go on with the idea of the stage:

Now we are going to bring the idea of the stage to mind that we worked through earlier and incorporate this new thinking strategy to the scene.

First I want to ask you to take a moment to think of what you have planned for the next couple of months. Think about what events you have planned, any breaks away, any birthdays or special occasions. I would like you to imagine these events in as much detail as possible, even think about what might have changed by the time this event comes round. Will the weather be different? Maybe even a new season would have started.

{PAUSE}

Now i would like you to imagine yourself sitting in your balcony box looking down on the stage. Imagine you can see your character going through these plans you have for the next couple of months, imagine the weather changing on the stage. Take some time to do this.

{PAUSE}

Take some time now to imagine sitting in your balcony box looking down on the stage where you as an actor are now standing alone at the end of it all. What would you say as guidance and reassurance to yourself as the actor on the stage from what you just experienced? Concentrate your thoughts on how you would help your actor to see the shades of grey in the emotional event.

{PAUSE}

Now take some time to think about whether playing out your future plans made you feel any differently about the event that was originally causing you distress.

Now let us explore another strategy, this time we will be thinking about the strategy:

AREAS … Try to think about putting the event in context of your life at the moment. Think about all the areas of your life, and concentrate your thoughts on the areas of your life that are ok.

{PAUSE}

Prompting question: What are your different areas in your life? (remember to only think of the ones that are ok)

What did the strategy 'AREAS' make you think of and how did it make you feel? Have a think about this and then we will talk about it briefly.

{PAUSE AND DISCUSS}

If they want to go on with the idea of the stage:

Now we are going to bring the idea of the stage to mind that we worked through earlier and incorporate this new thinking strategy to the scene.

First I want to ask you to take a moment to think of all the different areas of your life. The areas of your life may be determined by different groups of people, such as friends, family, work colleagues, sports team. Or you may choose to organise the areas of your life by activity, such as work, sport, relaxing. Or it may be that you think of the areas of your life in terms of your roles, for example child, parent, employer, friend, lover.

I will give you a few moments to think about this.

{PAUSE}

Now i would like you to imagine yourself sitting in your balcony box looking down on the stage. Imagine those areas of your life all on a stage together, so you can see them all clearly, particularly focusing your attention on the positive areas. It may be easier to do this by picking a person that is related to each area of your life and imagining that person, along with the people from other areas of your life on the stage. Therefore, one person per life area.

{PAUSE}

Take some time now to imagine sitting in your balcony box looking down on the stage where you as an actor are now standing alone at the end of it all. What would you say as guidance and reassurance to yourself as the actor on the stage from what you just experienced? Concentrate your thoughts on how you would help your actor to see the shades of grey in the emotional event.

{PAUSE}

Now take some time to think about whether seeing all the positive areas of your life made you

Now let us explore another strategy, this time we will be thinking about the strategy:

GREY ... Try to think about the aspects of this situation which may not be all bad. What do you think could be the silver lining to this grey cloud? If this is too difficult then think about how the situation may be less awful than it first seems.

{PAUSE}

Prompting question: Is there anything positive that has come from what happened? Are there things that you have learnt or taken away from this? (challenge yourself to find 3 things)

What did the strategy 'GREY' make you think of and how did it make you feel? Have a think about this and then we will talk about it briefly.

{PAUSE AND DISCUSS}

If they want to go on with the idea of the stage:

Now we are going to bring the idea of the stage to mind that we worked through earlier and incorporate this new thinking strategy to the scene.

First I want to ask you to take a moment to think about the scene in terms of positive and negative aspects. It is understandably going to be difficult, but try to keep in mind how someone else may interpret the scene if they had no emotional attachment to it. You may find this strategy very difficult as it may be that you struggle to find any good in the situation, if this is the case then try to think about what you learnt from the scenario, as lessons learnt are something positive. I will give you a few moments to think about this.

{PAUSE}

Now i would like you to imagine yourself sitting in your balcony box looking down on the stage. Imagine the scene playing out on the stage, and imagine picking out everything that could be interpreted from the balcony box as being fairly positive. It may help to think of playing the game spot the difference, so imagine picking out the positive parts of the scene.

{PAUSE}

Take some time now to imagine sitting in your balcony box looking down on the stage where you as an actor are now standing alone at the end of it all. What would you say as guidance and reassurance to yourself as the actor on the stage from what you just experienced? Concentrate your thoughts on how you would help your actor to see the shades of grey in the emotional event.

{PAUSE}

Now take some time to think about whether picking out as many positive aspects of the scene as possible made you feel any differently about the event that was originally causing you distress.

Now let us explore one more final strategy, this time we will be thinking about the strategy:

ELSE … Try to imagine that this situation is happening to someone you care about. They are talking to you about it and are obviously very upset. What would you say to them to make them see things in a less negative light, and to make them feel a bit calmer?

{PAUSE}

Prompting question: What would you say to someone who was in your position that you think might help them? What do you think you might advise them to do next?

What did the strategy 'ELSE' make you think of and how did it make you feel? Have a think about this and then we will talk about it briefly.

{PAUSE AND DISCUSS}

If they want to go on with the idea of the stage:

Now we are going to bring the idea of the stage to mind that we worked through earlier and incorporate this new thinking strategy to the scene.

First I want to ask you to take a moment to think about someone you really care about like a close friend. I would then like you to think about what you would say to help them if they were going through the distressing event. I will give you a few moments to think about this.

{PAUSE}

Now i would like you to imagine yourself sitting in your balcony box looking down on the stage. Imagine the event playing out on the stage as before but this time imagine this person you really care about in your role. Imagine that you are in the balcony box watching this happen to that person. Now when the scene ends think about what you would say to that person to help make them feel less distressed.

{PAUSE}

Take some time now to imagine sitting in your balcony box looking down on the stage where you as an actor are now standing alone at the end of it all. What would you say as guidance and reassurance to yourself as the actor on the stage from what you just experienced? Concentrate your thoughts on how you would help your actor to see the shades of grey in the emotional event.

{PAUSE}

Now take some time to think about whether thinking about what you would say to a close friend made you feel any differently about the event that was originally causing you distress.

We have successfully thought through five strategies and related them to your scene. Just take a few moments to evaluate which strategy or strategies were most helpful to you before we bring the practice session to a close.

{DISCUSS}

Obviously, five different strategies is a lot to remember and you will probably end up preferring some to others and using those more. Taking the first letters of the five strategies together – STAGE (Similar, Time, Area, Grey and Else) is one useful way to remember them.

Appendix Q

Participant cue card

The STAGE study card

Step 1: The self-distancing technique

Bring to mind the situation in as much detail as possible.

Imagine placing the scene of the situation onto a theatre stage. Now play out on the stage what happened with you playing yourself.

Imagine walking off the stage and making your way up to the balcony box. Now watch what happened play out on the stage.

The STAGE study card

Step 2: The STAGE thinking strategies

S imilar	Think about a similar situation in the past which was not as distressing.
T ime	Think about how you will feel about this in the future.
A reas	Think about all the areas of your life and focus on the ones that are going ok.
G rey	Think about aspects of the situation that may not be all bad.
E lse	Think about what you would say if this were happening to someone else.

Imagine the similar situation playing out.

Imagine yourself going through your future plans.

Imagine the stage full of the things from your positive life areas.

Imagine watching the situation and picking out everything good.

Imagine watching the situation happening to someone else.

Appendix R

Extract from the diary

Day 1 - lunchtime

Date and start time: _____

My general mood right now is: **1 -- 2 -- 3 -- 4 – 5 -- 6 -- 7 -- 8 -- 9**

(Please circle) ***Not positive*** ***Very positive***

1 -- 2 -- 3 -- 4 – 5 -- 6 -- 7 -- 8 -- 9

Not negative ***Very negative***

Do you feel in the last few hours something upsetting has happened?

If the answer is yes then go to Section 1, if the answer is no then go to Section 2.

Section 1:

Please briefly describe the emotional event below:

1. Did you try to use any of the new thinking strategies? (please tick one)
   - ☐ Yes, at the time
   - ☐ Yes, a little after it happened
   - ☐ No

If you answered yes:

2. Did using the new thinking strategies at the time cause a change in your level of distress?

decrease in distress *no change* *increase in distress*

1 - 2 - 3 - 4 - 5 - 6 - 7

Now go to section 3

Section 2:

Please tick below which statement best explains why you answered no when asked if anything emotional had happened or if you had any emotional thoughts.

- ☐ Simply nothing emotional has happened at all in the last few hours.
- ☐ There was opportunity for me to feel emotion about something but I chose to not react to it.
- ☐ A few little things have happened but nothing that felt significant enough to write about.
- ☐ I don't know.

Please begin reading the scenario below.

INSERT SCENARIO HERE

Now try to think if a similar thing has happened to you, if it has try to remember it in as much detail as possible. If you can't think of a memory then imagine in as much detail as possible being in the scenario.

Now go to section 3

Section 3:

We would now like you to work through the STAGE technique for your emotional event or scenario using your cue card. Only when you are finished please answer the following questions using this scale:

Example: ***1-------2--------3--------4--------5--------6--------7***

Not at all ***Neither*** ***Extremely so***

1. How easy did you find it to use the self-distancing exercise?
   1------2------3------4------5------6------7

2. How easy did you find it to use the five STAGE strategies?
   1------2------3------4------5------6------7

3. To what extent did you feel able to use the self-distancing exercise?
   1------2------3------4------5------6------7

4. To what extent did you feel able to use the five STAGE strategies?
   1------2------3------4------5------6------7

5. To what extent did you find the following strategies helpful...

   Similar 1------2------3------4------5------6------7 or NA

   Time 1------2------3------4------5------6------7 or NA

   Areas 1------2------3------4------5------6------7 or NA

   Grey 1------2------3------4------5------6------7 or NA

   Else 1------2------3------4------5------6------7 or NA

6. To what extent was the imagery that goes with the five STAGE strategies helpful?
   1------2------3------4------5------6------7

7. Did using the new thinking strategies cause a change in your level of distress?

Decreased *no change* *Increased*

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 ***0*** *1 2 3 4 5 6 7 8 9 10*

Just one last thing…

My general mood right now is: **1 -- 2 -- 3 -- 4 – 5 -- 6 -- 7 -- 8 -- 9**

Not positive ***Very positive***

1 -- 2 -- 3 -- 4 – 5 -- 6 -- 7 -- 8 -- 9

Not negative ***Very negative***

Thank you very much for filling out your diary.

Appendix S

Ethical approval letter

Part of the research infrastructure for Wales funded by the National Institute for Social Care and Health Research, Welsh Government
Yn rhan o seilwaith ymchwil Cymru a ariannir gan y Sefydliad Cenedlaethol ar gyfer Ymchwil Gofal Cymdeithasol ac Iechyd, Llywodraeth Cymru

Gwasanaeth Moeseg Ymchwil | NISCHR RES | Research Ethics Service

Wales REC 4
G1/G2 Croesnewydd Hall
Croesnewydd Road
Wrexham Technology Park
Wrexham LL13 7YP

Telephone : 01978 726377

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Website : www.nres.nhs.uk

08 October 2015

Dr Emma Hill
2.30 Elizabeth Fry Building, School of Medicine
University of East Anglia
Norwich, Norfolk
NR4 7TJ

Dear Dr Hill

Study title:	**A pilot study of a brief self-distancing and perspective-broadening training package for Bipolar Disorder**
REC reference:	**15/WA/0271**
IRAS project ID:	**161512**

Thank you for your letter of 21 September 2015, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered by a Sub-Committee of the REC at a meeting held on 30 September 2015. A list of the Sub-Committee members is attached.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact the REC Manager, Mrs Tracy Biggs, Tracy.Biggs@Wales.nhs.uk.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

The favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission or approval must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission ("R&D approval") should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements.

Guidance on applying for NHS permission for research is available in the Integrated Research Application System or at http://www.rdforum.nhs.uk.

GIG CYMRU NHS | Bwrdd Iechyd Addysgu Powys Powys Teaching Health Board

Cynhelir Cydweithrediad Gwyddor Iechyd Academaidd y Sefydliad Cenedlaethol ar gyfer Ymchwil Gofal Cymdeithasol ac Iechyd gan Fwrdd Addysgu Iechyd Powys

The National Institute for Social Care and Health Research Academic Health Science Collaboration is hosted by Powys Teaching Health Board

Ariennir gan Lywodraeth Cymru Funded by Welsh Government

Where a NHS organisation's role in the study is limited to identifying and referring potential participants to research sites ("participant identification centre"), guidance should be sought from the R&D office on the information it requires to give permission for this activity.

For non-NHS sites, site management permission should be obtained in accordance with the procedures of the relevant host organisation.

Sponsors are not required to notify the Committee of approvals from host organisations

Registration of Clinical Trials

All clinical trials (defined as the first four categories on the IRAS filter page) must be registered on a publically accessible database within 6 weeks of recruitment of the first participant (for medical device studies, within the timeline determined by the current registration and publication trees).

There is no requirement to separately notify the REC but you should do so at the earliest opportunity e.g when submitting an amendment. We will audit the registration details as part of the annual progress reporting process.

To ensure transparency in research, we strongly recommend that all research is registered but for non clinical trials this is not currently mandatory.

If a sponsor wishes to contest the need for registration they should contact Catherine Blewett (catherineblewett@nhs.net), the HRA does not, however, expect exceptions to be made. Guidance on where to register is provided within IRAS.

It is the responsibility of the sponsor to ensure that all the conditions are complied with before the start of the study or its initiation at a particular site (as applicable).

NHS sites

The favourable opinion applies to all NHS sites taking part in the study, subject to management permission being obtained from the NHS/HSC R&D office prior to the start of the study (see "Conditions of the favourable opinion" below).

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Evidence of Sponsor insurance or indemnity (non NHS Sponsors only) [Sponsor's public liability evidence]	1	10 July 2015
IRAS Checklist XML [Checklist_13072015]		13 July 2015
IRAS Checklist XML [Checklist_21092015]		21 September 2015
Letter from sponsor [Indemnity letter]	1	10 July 2015
Other [CV for supervisor two]	1	10 July 2015
Other [Sponsor's professional negligence evidence]	1	10 July 2015
Other [GP letter template]	4	19 September 2015
Other [Response letter for ethics committee]	4	19 September 2015
Participant consent form [Consent form]	4	19 September 2015
Participant information sheet (PIS) [Informatio sheet]	4	19 September 2015
REC Application Form [REC_Form_13072015]		13 July 2015
Research protocol or project proposal [Project Proposal]	4	19 September 2015
Summary CV for Chief Investigator (CI) [CV for CI Emma Hill]	1	10 July 2015
Summary CV for supervisor (student research) [CV for supervisor one]	1	13 July 2015

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review

Reporting requirements

The attached document *"After ethical review – guidance for researchers"* gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Adding new sites and investigators
- Notification of serious breaches of the protocol
- Progress and safety reports
- Notifying the end of the study

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

15/WA/0271	**Please quote this number on all correspondence**

With the Committee's best wishes for the success of this project.

Yours sincerely

T.A. Biggs.

Dr Kath Clarke
Chair

E-mail: tracy.biggs@wales.nhs.uk

Enclosures: *List of names and professions of members who were present at the meeting and those who submitted written comments*

"After ethical review – guidance for researchers"

Copy to: *Mrs Sue Steel*

Wales REC 4

Attendance at Sub-Committee of the REC meeting on 30 September 2015

Committee Members:

Name	*Profession*	*Present*	*Notes*
Dr Kath Clarke - Chair	Senior Investigations Manager	Yes	
Mr Philip Richards	Associate Specialist - Surgery	Yes	

Also in attendance:

Name	*Position (or reason for attending)*
Mrs Tracy Biggs	Research Ethics Committee Manager

Appendix T

UEA insurance confirmation letter

University of East Anglia

Research & Enterprise Services
West Office (Science Building)
University of East Anglia
Norwich Research Park
Norwich, NR4 7TJ

Telephone: +44 (0)1603 591486
Email: sue.steel@uea.ac.uk

Web: www.uea.ac.uk/researchandenterprise

TO WHOM IT MAY CONCERN

10 July 2015

Study: Self-distancing and perspective-broadening training for Bipolar

Chief Investigator: Dr Emma Hill

IRAS Ref: 161512

This is to confirm that the University of East Anglia and Subsidiary Companies have arranged insurance cover as detailed on the attached Company Public Liability and Professional Negligence Insurance certificates.

The cover is subject to the terms and conditions of the policy. If you require further details, please contact the undersigned.

Yours faithfully

Sue Steel

Contracts Manager

Appendix U

Informal qualitative feedback

Participant one

After using the STAGE technique with two of their memories they verbally reported that the technique was “easy to use once I knew how to use it”, “the situation had happened before and therefore the similar and time strategies were easy”, and “it’s better perspective”. They reported it was “hard if the situation is ongoing or a new situation”. This participant was able to be reached for a follow-up phone call, during this they said that the techniques were “easier if used on past or repeated problems” and not so easy if the problem was “ongoing, involved aggression or was a one off unusual experience”. This participant wondered if the low in Bipolar is the same as the low in depression. They felt that the technique would be good for recovery, although they would want someone there to guide them through it. The participant reported that they had used it once since the study (had remembered it) and used it with one of their children who was anxious.

Participant two

After using the STAGE technique with two of their memories they verbally reported that the “imagery was easy” and they got a “wider perspective using the areas strategy but the others are not as helpful”. They reported that “different one (strategies) are helping”. This participant was able to be reached for a follow-up phone call, during this they said that they really liked the technique, and they had shared it with other people they knew with BD who liked the idea of it too. The participant thought it might be better should there be more training, to help the use of it ‘in the moment’.

Participant three

After being introduced to the STAGE technique, the participant reported “I feel I already do this a little, whether I adhere to it or not I am unsure”. At the end of the study they reported that the technique was “hard in the moment”, would see the two steps as “independent strategies”, they would “let time pass and then use them”, and they “mostly used the STAGE strategies without the imagery”. They reported that overall the technique is “a way to reflect upon it (things), focus on it, but if I were to just write about it that would have helped, just the time being the important part”.

Participant four

After being introduced to the STAGE technique, the participant reported “sounds like me” to the ways of thinking described in the introduction to the technique. After doing the homework, the participant came back and said how much she liked the technique. After using the STAGE technique with two of their memories they verbally reported that one memory “was harder as more memories involved rather than just one, but still useful”. They also reported the technique was “harder when it was completely new e.g. something unusual, easier on everyday things or things I can relate to”. The participant found some scenarios “hard to relate to”.

Participant five

After being introduced to the STAGE technique, the participant reported “how can I see shades of grey? What about if I am impulsive? It’s hard to try self-distancing”.

Participant six

After being introduced to the STAGE technique, the participant reported “I instantly related to the description… I feel through meditation I decenter daily”. After the homework the participant reported that “if something came up then I used it (the technique)”, “I feel more balanced in the way I approach things”, and there was “no difference between the positive and negative experiences and the usefulness of the technique”. After using the STAGE technique with two of their memories they verbally reported that one memory was “easy as it was fresh, easier to work with things that come up more often”. They also reported that it was “hard to put emotions on the stage, but it encouraged me to break up the bits of it and reset it in my mind… compartmentalise what I thought and understand it better”. The participant emailed stating the following: “Let me just re-iterate in advance of our phone call tomorrow just how fascinating and revealing I've found participating in your study, and how closely it aligns with my own interests and focus”. During the follow-up phone call the participant shared that they “found the card easy to pick up and had done a few times”, they found the “five steps most helpful of the two techniques, very easy to follow”, and that they could “incorporate any of the frameworks to think in different perspectives”. The participant said that if anything were to be changed then the use of the word ‘distress’ in the rating questions, as the term was confusing.