

*Running head: Approach- and avoidance- goal cognitions in depression and anxiety*

**Approach- and avoidance- goal cognitions in depression and anxiety**

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*It is good to have an end to journey toward; but it is the journey that matters, in the end –*

*Ernest Hemingway*

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### **Introductory chapter: Thesis overview**

The main area of interest in this thesis is approach- and avoidance- goal motivation in depressed and/or anxious individuals. Approach goal pursuit involves one attempting to move towards a desired, positive outcome (e.g. “to pass my exams”). Avoidance goal pursuit involves one attempting to move away from or prevent an undesirable negative outcome (e.g. “to avoid failing my exams”; Elliot & Thrash, 2002; Emmons, 1991). The impact that approach- and avoidance- goal pursuit has upon our emotional state has been implied in both the theoretical and empirical literature (e.g. Fowles, 1988, 1994; Corr, 2001, 2002). Literature has suggested increased avoidance goal pursuit as typical in anxiety and both a deficit in approach- and an increase in avoidance- goal pursuit typifies depression (Fowles, 1988, 1994). Johnson, Carver and Fulford (2010) suggested that biased goal cognitive appraisals give rise to negative affect whilst the representations of our goals remain intact. Theory posits that positive expectancy (likelihood one will achieve the goal’s outcome) results in sustained effort whilst negative expectancy can lead to the rejection of one’s goals (Carver & Scheier, 1998). Goal difficulty has been found to negatively affect goal expectancy and goal expectancy has been reported to moderate the relationship between goal progress and goal effort (Schmidt & Dolis, 2009). Empirical research suggests individuals experiencing negative affect appraise less expectancy for approach goals and more expectancy for avoidance goals compared to never-depressed individuals (Dickson, Moberly & Kinderman, 2011). Another cognitive appraisal that has been associated with negative affect is conditional goal setting (CGS). CGS is the extent to which one rates their happiness, feeling of fulfilment and self-worth as conditional upon the achievement of their personal goals (Street, 1999). Increased levels of depression and anxiety have consistently been reported where high CGS is appraised (e.g. Street, 2002; Street, 2003; Hadley & Macleod, 2010; Schofield, Dickson & Mummery, 2002).

Depression and anxiety have been found to be highly co-morbid (Kessler et al., 2005) and such co-morbid presentations have been reported as the most common mental health difficulty in Britain (Singleton, Bumpstead, O’Brien, Lee & Meltzer, 2001). This thesis considers approach- and avoidance goal-cognitive appraisals in both depression and anxiety. By including both depression and



anxiety, it was anticipated this thesis would expand the cognitive literature on the shared and distinct features of depression and anxiety.

The systematic review in Chapter 1 considered whether approach- and avoidance- goal cognitive appraisals, specifically CGS, expectancy, difficulty, progress and effort, are implicated in depression and anxiety. Database (Scopus, PsycINFO, MEDLINE and Web of Knowledge) searches revealed that CGS, progress and effort had not been investigated, to date, in approach- and avoidance- goal motivation with depressed and anxious individuals. As there is an existing empirical literature base showing CGS to be related to negative affect (e.g. Street, 1999; 2002; 2003), the searches were separated for the systematic review between approach- and avoidance goal motivation and CGS - in depression and anxiety. The same inclusion and exclusion criteria applied to all searches. Eight empirical papers were identified for review out of an initial figure of 92.

The review revealed: (1) There was a consensus that depressed and anxious adults alike do not differ on the number of approach goals (positive outcomes) they generate compared to non-depressed/-anxious individuals. (2) Overall, individuals generate more approach goals than avoidance goals. (3) Increased avoidance goal generation was commonly found to impact negatively upon mood, however, one study reported clinically depressed adults did not generate more avoidance goals than never-depressed individuals. (4) Depressed adults rated less expectancy for approach goals and more expectancy for avoidance goals though avoidance goals were also reportedly associated with more difficulty, low expectancy and less derived happiness. (5) The higher the CGS, the higher the level of depression and anxiety and the lower ratings of expectancy (for positive outcomes). The systematic review concludes that goal formation (approach/avoidance) and the cognitions relating to goal pursuit (CGS, expectancy and difficulty) play an important role in predicting depressed or anxious mood. Based on the findings of the systematic review and the evident gaps and inconsistencies in the literature, continued research is suggested which utilises a clinical sample and considers approach- and avoidance- goal cognitions (specifically, CGS, expectancy, difficulty, progress and effort) and their shared and distinct features in young adult depression and anxiety.

## Approach- and avoidance- goal cognitions in depression and anxiety

After investigating in the literature whether approach- and avoidance- goal cognitive appraisals are implicated in depression and anxiety, Chapter 2 reports an exploratory study examining whether the approach- and avoidance- goal cognitive appraisals, CGS, expectancy, difficulty, progress and effort, predict depressive and anxious symptoms. The aim of this paper was to investigate shared- and distinct approach- and avoidance- goal cognitions in depression and anxiety. This paper was prepared for submission to the Sage publication, *Personality and Social Psychology Bulletin*. 70 university students reporting depressive and/or anxious symptoms were recruited from a National Health Service (NHS) primary care service before receiving psychological therapy. Data were collected via a web-based questionnaire. Participants generated two approach- and two avoidance- type goals before rating them on CGS, expectancy, difficulty, progress and effort. Participants additionally completed self-report measures of depression and anxiety. As expected, results identified shared and distinct goal cognitive appraisals in predicting depressive and anxious symptoms in a young adult clinical sample. Regression analyses revealed that less perceived approach goal progress and heightened approach goal effort predicted both depression and anxiety. Whereas, heightened approach goal CGS and approach goal difficulty, and reduced avoidance goal progress uniquely predicted depression. Unexpectedly, avoidance goal cognitive appraisals did not predict anxiety. Results provide key considerations for future clinical practice and research.

An extended discussion of the empirical paper in Chapter 2 is reported in Chapter 3. This discussion includes a more detailed description of the inter-correlations identified between the goal cognitive appraisals, the clinical implications of the empirical findings in Chapter 2 and the study's limitations. A brief article aimed at a student periodical is then presented summarising the empirical findings to a lay audience. This is followed by a notice disseminating research findings to participants. A research proposal for a future study to extend the findings reported in Chapter 2 is then presented. This proposal involves a longitudinal design in which goals are appraised each week depressed and anxious participants attend psychological therapy. It is anticipated this would provide information concerning how goal cognitive appraisals potentially change over time, in response to fluctuating or improved depressive and anxious symptoms.

## Approach- and avoidance- goal cognitions in depression and anxiety

The thesis is concluded with a brief account of the author's reflections of her experience of carrying out research in the area of approach- and avoidance- goal motivation.

**Chapter 1: Systematic Review**

**Are approach- and avoidance- goal cognitive appraisals implicated in depression and/or anxiety  
in adults?**

### **Abstract**

**Purpose** Cognitive literature has long considered the nature and predictors of depression and anxiety. Fewer researchers have investigated the role of goal motivation for this purpose in adults, despite goal pursuit being central to human motivation, and depression and anxiety being highly comorbid. Goal motivation research suggests we generate two distinct types of goals: approach and avoidance. Goal formation and one's goal cognitive appraisals are suggested to impact upon emotional state. Based on theory, the goal cognitive appraisals the present review was particularly interested in were: Conditional Goal Setting (CGS; i.e. making one's happiness, feeling of fulfilment and self-worth conditional upon the achievement of one's personal goals), expectancy, difficulty, progress and effort. This report represents the first systematic review to investigate whether these specific approach- and avoidance- goal cognitive appraisals are implicated in adult depression and/or anxiety. The salience of investigating such constructs may have important implications when considering the development, persistence and treatment of depression and/or anxiety.

**Method** To investigate this, four electronic databases (Scopus, PsycINFO, MEDLINE and Web of Knowledge) were systematically searched identifying 92 articles that were screened for quality and in accordance with inclusion and exclusion criteria. No single paper was identified which included approach- and avoidance- goal motivation and the cognitive appraisal CGS. These search terms were consequently separated and appropriate papers from both these research areas were considered for review. Of the initial figure, eight studies were included in the systematic review.

**Results** There was a consensus that depressed and anxious adults alike do not differ on the number of approach goals (positive outcomes) they generate compared to non-depressed/-anxious individuals. However, the number of generated avoidance goals (negative outcomes) were found to be greater in depressed and anxious participants, though inconsistencies were reported. Expectancy was reported to be lower in depressed individuals for positive outcomes. For both anxious and depressed individuals, avoidance goals were judged as more difficult and expectancy appraisals varied. There was agreement that adults with depressive or anxious mood have higher CGS and the higher the CGS, the less expectancy for positive goal outcomes. No empirical papers were identified that measured

## Approach- and avoidance- goal cognitions in depression and anxiety

the approach- and avoidance- goal cognitive appraisals, progress and effort in depression nor anxiety, despite their implied theoretical importance. This highlighted a potential gap in the literature.

**Conclusion** Depression and anxiety were explored in terms of goal motivation cognitive appraisals. Explanations for relationships were synthesised and recommendations for future research were discussed to account for the inconsistencies found and in an attempt to address apparent gaps in the literature. One suggestion included investigating approach- and avoidance- goal cognitive appraisals with a clinically anxious and/or depressed adult sample. This is likely to enhance Clinical Psychologists' understanding when supporting adults with depressive or anxious presentations.

## Introduction

### Chapter overview

The review commences with an introduction which outlines the literature around depression and anxiety in adulthood, before presenting the area of goal motivation, theory and goal cognitive appraisals. After the research questions and objectives for the review have been described, a method section presents how the review was conducted. A results section then reports the findings from the systematic review before describing the identified studies' findings. A discussion is then presented which considers how approach- and avoidance- goal motivation are implicated in depression and anxiety before considering the limitations of the review and what may be helpful to consider in terms of future research.

### Depression and anxiety in adulthood

The prevalence of depression in the United Kingdom (UK) is 2.6% among individuals aged 16-74, with a marginally elevated rate among females (Singleton, Bumpstead, O'Brien, Lee & Meltzer, 2001). Moreover, the number of individuals seeking treatment from National Health Service (NHS) Primary Care Trusts for depressive symptoms has risen by 11.5% in the last three years (SSentif, 2012). Generalised Anxiety Disorder (GAD) is one of the most common mental health problems in primary care with lifetime prevalence ranging between an estimated 0.8% and 12.7% (Lieb, Becker & Altamura, 2005; Kessler et al., 2005; Grant et al., 2005). Only 2% of the UK population experience a depressive episode without 'co-morbid' anxiety (Singleton et al., 2001).

**Comorbidity.** The distinct features of depression and anxiety have been extensively reported, identifying differing: ages of onset (Kessler et al., 2005); effects of arousal (Clark & Watson, 1991); patterns of heritability and genetics (Kendler et al., 1995; Eley, 1999); pharmacological profiles (Deakin, 1998); influences on cognitive function (Mogg, Bradley, Williams & Mathews, 1993; Bierman, Comijs, Jonker & Beekman, 2005); subjective emotion, where normal positive affect and "worry" is commonly associated with anxiety, and reduced positive affect and "sadness" are commonly associated with depression (Larson, Nitschke & Davidson, 2007). Additionally, depression and anxiety have also been reported to be characterised by distinct and

common themes. Depression is concerned with loss (of pleasure, drive, self-esteem), the past, rumination and helplessness (e.g. Koval, Kuppens, Allen & Sheeber, 2012), as well as, intra-psychic themes connected with failure, inadequacy, worthlessness and alienation (e.g. Cooper & Cowen, 2009). Themes of threat and danger, typically domain-specific and anxious future predictions, catastrophic thinking patterns and escape avoidance are all common themes reportedly characteristic of anxiety (Barlow, 2004). Nonetheless, depression and anxiety have been found to be highly co-morbid, with approximately 50-60% of depressed individuals reporting a chronic history of anxiety (Kaufman & Charney, 2000; Kessler et al., 2005). Such co-morbid presentations tend to be more persistent than either single disorder (Merikangas et al., 2003) with co-morbid depression and anxiety having been reported as the most common mental health difficulty in Britain, with nearly 9% of individuals fulfilling diagnostic criteria (Singleton et al., 2001). The reported high incidence of co-morbidity and a recent growth therapeutically in a trans-diagnostic approach (i.e., clinically aiming for a single manual of treatment for depression and anxiety; e.g. Craske, 2012) highlights the appropriateness of research involving both depressed and anxious individuals when considering their distinct and shared characteristics.

The underlying causes of co-morbid depression and anxiety remain inconclusive. One idea is that there is an association between depression and anxiety that promotes co-morbidity (Rosenberg, 1998). Rosenberg (1998) suggested that negative affective states (e.g. depressive or anxious presentations) increase negative emotional reactivity by potentiating the reaction to aversive stimuli (Ditcher & Tomarken, 2008). This supports Beck's schema model (1967a) which posits that depressive and low mood can involve cognitive biases which distort processing of emotional stimuli, leading to the increased likelihood of negative reactivity to aversive stimuli. Several perspectives have been posited in an attempt to describe the cognitive origins of depression and anxiety. These include, the aforementioned trans-diagnostic approach (e.g. Craske, 2012), which posits a single manual of treatment for depression and anxiety. The Helpless-Hopelessness Theory (Alloy, Kelly, Mineka & Clements, 1990) suggests that anxiety commonly precedes depression and is more likely to occur if negative events are construed as uncontrollable (helplessness). If such a position is deemed



enduring and affects several life aspects (hopelessness), depressive symptoms, according to this theory, are more likely to develop. Additionally, Social Comparison Theory (Festinger, 1954) has proposed that individuals use social comparison to evaluate opinions, abilities, manage emotions and maintain self-esteem (e.g. Aspinwall & Taylor, 1993). More recently, research has attempted to extend cognitive theory and has suggested beliefs and goals work together in the development of negative affect (Rothbaum, Morling & Rusk, 2009).

This review is interested in depression and anxiety from a goal motivational perspective. A negative view of the future is one of the components of Beck's cognitive triad for depression (Beck, 1967b). How we think about the future represents a key element of our well-being and is commonly alluded to in both clinical and non-clinical literature. For instance, when compared to controls, the clinical literature has reported: co-morbid depressed and anxious individuals to have both reduced anticipation of positive experiences and a greater anticipation of negative experiences; anxious individuals differ only in anticipating more future negative experiences (MacLeod & Byrne, 1996), and depressed individuals have shown a reduced anticipation of positive experiences but no global increase in anticipation of negative experiences (MacLeod, Pankhania, Lee & Mitchell, 1997). This highlights the importance of positive future-directed thinking to well-being. Approaches that consider well-being to be a result of people engaging in striving towards valued goals that they believe will likely happen, has been highlighted as important in the non-clinical literature, when anticipating future positive outcomes (Schmuck & Sheldon, 2001). Moreover, third wave cognitive behavioural therapies, such as Acceptance and Commitment Therapy (ACT, Hayes, Strosahl & Wilson, 1999, 2012) emphasise chosen values as an essential component of a meaningful life, and accordingly a significant part of treatment (Ruiz, 2012).

### **Goal motivation**

In the literature on goals and depression, goals have been popularly defined in accordance to their purpose and domain. The purpose of goals has been defined in terms of change in which goals are characterised as a desired move from an actual state to a desired state (e.g., Klinger, 1975). The goal domain has been described in cognitive terms (e.g. Champion and Power, 1995), behaviour (e.g.,

Carver & Scheier, 1996) and/or affect (e.g., Emmons & Kaiser, 1996). Cochran and Tesser (1996) described a goal as:

*“a cognitive image of an ideal stored in memory for comparison to an actual state; a representation of the future that influences the present; a desire (pleasure and satisfaction are expected from goal success); a source of motivation, an incentive to action”* (p. 100)

Investigating depression and anxiety from a goal motivational perspective might therefore be important in not only understanding how such dispositions develop and persist, but to informing cognitive therapies that centre on clients' personally meaningful objectives. Personal goals are a salient aspect of motivation as they tend to provide meaning, purpose and direction in people's lives, in addition to offering a framework for understanding life experience (Sheldon & Elliot, 1999; Schmuck & Sheldon, 2001). Personal goals have been defined as internal representations of desired states (Austen & Vancouver, 1996). Goal pursuit is regarded as central to human motivation (Klinger, 1975) and affective disorders have been linked with goal dysregulation (Johnson, Carver & Fulford, 2010). In addition to the process of striving to achieve personal goals being implicated in psychological and interpersonal growth (Sheldon, Kasser, Smith & Share, 2002), distinct forms of goal orientation have also been suggested to play a significant role (Trew, 2011).

**Approach- and avoidance- goal motivation.** Motivational theoretical models have posited that maladaptive approach- and avoidance- driven motivational systems underlie mental health difficulties and emotional vulnerability (e.g. Davidson, Pizzagalli, Nitschke, & Putnam, 2002). Consequently, two types of personal goal representation have been defined, namely, approach and avoidance. An approach goal represents a focus on positive outcomes and an attempt to move towards- or sustain- desirable outcomes (e.g. “to pass my exams”). Contrary to this, an avoidance goal represents a focus upon negative outcomes and an attempt to move away from or prevent undesirable outcomes (e.g. “not to fail my exams”) (Elliot & Thrash, 2002; Emmons, 1991). These definitions are consistent with Gray's (1987a) early two-system model of motivation, comprising an approach type system and an avoidance type system. The approach system of motivation has also been referred to as the behavioural activation system, behavioural approach system and behavioural

facilitation system, whilst the avoidance system has been termed as the behavioural inhibition system and the behavioural withdrawal system (Carver, 2006; Gray 1987b; 1990). Approach and avoidance propensities have additionally been referred to as promotion (of positive outcomes) versus prevention (of negative outcomes; Higgins, 1997) and in respect of efforts to minimise self-discrepancies between actual self, ideal self and ought self (Higgins, 1987).

Correspondingly, four prominent theories of approach- and avoidance- motivation have been formulated and are described below. The first is Gray's (1987a, 1990) Theory of Reinforcement Sensitivity. The second and third are the Self-Discrepancy and Regulatory Focus Theories by Higgins (1987, 1997). The fourth is Carver and Scheier's (1990) Theory of Cybernetic Control.

**Approach- and avoidance- goal motivation theory.** Although approach and avoidance is one of the oldest concepts in psychology (Elliot & Covington, 2001), it was Gray (1987a, 1990) who brought the key theoretical ideas back into the mainstream. Gray's (1987a, 1990) biological Theory of Reinforcement Sensitivity linked approach- and avoidance- type motivation to underlying neurobiological systems and emotional susceptibility. His theory suggested three motivational systems: the behavioural activation system (BAS); the behavioural inhibition system (BIS) and the fight/flight system, (FFS). The BAS stimulates approach behaviour and emotions of euphoria, hope and relieve and is activated by signals of non-punishment and reward. The BIS stimulates behavioural inhibition, heightened arousal and vigilance, selective attention and anxiety, activated by signals of non-reward and conditioned punishment, novelty and intrinsic fear stimuli. The FFS, prompts escape or aggression and is activated by non-reward and unconditioned punishment. The BAS and BIS systems theoretically underpin approach- and avoidance- goal motivation. Further amendments to Gray's theory suggested the BIS was activated by a conflict between coexisting goals, hindering on-going behaviour and resolving goal conflict (choosing avoidance) through the promotion of endeavouring to obtain new goal-relevant information and increasing the focus on affectively adverse information (Gray & McNaughton, 2000; Smillie, Pickering & Jackson, 2006). Where the BAS focuses on anticipating and approaching desirable outcomes, the BIS is focused on anticipations and avoidance of undesirable outcomes.

Through applying Gray's theorised motivational systems to various psychopathological conditions, Fowles (1988, 1994) suggested that anxiety is characterised by high BIS activity but not low BAS activity and depression is typified by a combination of high BIS and low BAS. However, where Fowles (1988, 1994) considered these systems to be independent and unrelated, Corr (2001, 2002) argued that both BAS and BIS can facilitate approach and avoidance propensities respectively (i.e. the systems are interdependent) and have conflicting effects on the opposite tendency. During goal conflict, behaviour is determined by the activity of both systems. High BAS activation and low BIS activation determines positive emotions and higher appetitive responses, and increased aversive responses and negative emotions arise when the converse occurs.

Higgins (1987, 1997) self-discrepancy theory regarding approach and avoidance focuses more on self-regulation, specifically self-discrepancies. This theory argues that we are motivated to attain a match between our self-concept (i.e. actual self) and our personally relevant ideal self, characterised by hopes, wishes or aspirations and our ought selves, characterised by responsibilities, duties and obligation (Higgins, 1987). Ideal self-regulation maps onto approach motivation as it involves a pursuit of positive outcomes and ought self-regulation maps onto avoidance motivation where negative outcomes are to-be-avoided (i.e. an ought self mis-match) (Higgins, Roney, Crowe & Hymes, 1994). Higgins' (1997) Theory of Regulatory Focus also makes links with approach and avoidance. A promotion focus directs individuals towards gaining a positive outcome (approach) and a prevention focus directs individual towards avoiding negative outcomes (avoidance) (e.g. Leone, Perugini & Bagozzi, 2005). Both theories complement each other where the idea is that ideal self-regulation comprises a promotion focus and ought self-regulation comprises a prevention focus (Higgins, 1997).

Moreover, the Control-Theory proposed by Carver and Scheier (1990) suggests that approach and withdrawal dispositions are represented by partially distinct discrepancy minimising (approach) and discrepancy expanding (withdrawal) action feedback loops. This theory proposes we monitor our actions and compare our perception to important reference values (i.e. goals) and then take measures to decrease or increase the perceived discrepancy between the reference value and our current

emotional state (Carver, 2006). Carver and Scheier (1998) also suggested a relationship between goal expectancies and affect. Goal expectancy is the perceived likelihood of a goals attainment. Where expectations of succeeding are sufficiently positive, the person sustains effort (exertion one applies in pursuing a goal) toward the goal. However, if expectations are sufficiently negative, one is more likely to disengage from the goal. Furthermore, our emotional state supplies information about goal progress (Carver, 2001) and controls our feeling of urgency towards goals (Carver and Scheier, 2008). When goal progress (i.e. an individual's perceived advancement in goal pursuit) surpasses a criterion, confidence and positive affect occur. However, when progress falls below a criterion, feelings of doubt and negative affect ensue (Carver, 2004). Emotional state can also alter goal effort, reducing or reallocating effort when experiencing a positive emotional state and increasing or withdrawing effort as a consequence of a negative emotional state; accordingly, this modifies affective reactions (Carver, Avivi & Laurenceau, 2008).

Considering these theories of approach and avoidance, it is thereby not only the way in which we frame our goals (approach or avoidance; Elliot & Thrash, 2002) but how we cognitively appraise these personal goals, that may also affect our emotional state. The present review is specifically interested in whether approach- and avoidance- goal cognitive appraisals of Conditional Goal Setting (CGS; the level at which one's happiness, feeling of fulfilment and self-worth are conditional upon the achievement of one's personal goals; Street, 1999), expectancy (how likely one perceives the outcome of a goal to happen), difficulty (how much difficulty one experiences during goal pursuit), progress (how much progress one perceives during goal pursuit) and effort (how much perceived effort one exerts during goal pursuit) are implicated in depression and anxiety. Such appraisals would seem to have strong relevance in sustaining goal pursuit, particularly in the face of adversity. Positive goal cognitive appraisals may serve to maintain commitment to one's personal goals.

**Goal cognitive appraisals.** Goal pursuit usually involves sustained activity in order to overcome obstacles in the pursuit of achieving personal goal outcomes. Goal expectancy is likely to be a salient factor in governing the amount of goal effort and the likelihood of success (Carver &

Scheier, 1998). Butler and Matthews (1983) found no significant differences between depressed and anxious subjects in terms of expectancy ratings for positive hypothetical events. However, both the depressed and anxious participants rated negative events as more likely to occur when compared to normal controls. This finding may suggest that expectancy ratings would be higher for avoidance (negative outcome) type goals compared to approach (positive outcome) type goals in depressed and anxious individuals when compared to non-depressed and non-anxious individuals. Dickson and MacLeod (2006) considered self-generated approach- and avoidance- goals and found that depressed adolescents had higher expectancies for avoidance goal outcomes and lower expectancies for approach goal outcomes. In the face of adversity during goal pursuit, expectancies for eventual attainment can determine whether one persists or disengages (e.g. Carver & Scheier, 1998; Locke & Latham, 1990) as low expectancies indicate that continued provision of effort is unlikely to lead to goal success. Therefore, in individuals with negative affect, low expectancy of approach goals (positive outcomes) may lead them to reject their approach goals in favour of avoidance goals (negative outcomes) for which they perceive higher levels of expectancy, in accordance with control theory for example (Carver, 2006). Two related determinants of expectancy beliefs are goal difficulty and goal progress (e.g. Tubbs, Boehne & Dahl, 1993; Schmidt & Dolis, 2009). As the gap between an individual's desired and actual progress increases, expectancies usually decrease, which may lead to disengagement. Early research also suggests that as goal difficulty heightens, expectancies reduce (e.g. Garland, 1982; Matsui, Okada & Mizuguchi, 1981). More recently, Schmidt and Dolis (2009) suggested that goal expectancy moderates the relationship between goal progress and goal effort, and goal difficulty is thought to impact negatively upon goal expectancy. Moreover, negative affect has consistently been associated with low perceived rates of goal progress, both theoretically and empirically (Carver & Scheier, 1990; Brunstein, 1993; Affleck et al., 1998).

When these findings are considered in terms of depressed and anxious individuals, additional explanations for the perseverance of these negative affective states may be implicated. Individuals with anxiety and depression have been found to have higher expectancy judgements for avoidance goal (negative) outcomes and lower expectancy judgements for approach goal (positive) outcomes,

relative to controls (Dickson & MacLeod, 2006). Considering the literature presented so far, one might posit that effort would increase where high expectancy ratings are made of avoidance goal (negative) outcomes in individuals with low mood. However, despite this increased effort, it does not necessarily follow that perceived progress would be high, in mind of the endless nature of an avoidance type goal (attempting to move away from/prevent an undesired outcome). Low approach goal expectancy judgements (Dickson & MacLeod, 2006) might then suggest less effort, less progress and more difficulty for approach goal motivation (Schmidt & Dolis, 2009). As approach goal progress is associated with positive well-being, these goal cognitive appraisal deficits may be important to consider when enriching our understanding of depression and/or anxiety, hence their inclusion in the present review.

***Conditional Goal Setting (CGS).*** The goal cognitive appraisal, CGS, has also been reported to affect emotional state (Street, 2002). CGS refers to the level of happiness, fulfilment and self-worth conditionality on the achievement of one's personally meaningful goals (Street, 2002). Contrary to Tubbs et al. (1993) there is literature to suggest that, despite individuals with negative affect having low expectancy in terms of their personal goals, they still continue to pursue these goals (MacLeod & Conway, 2007; Vincent, Boddana & MacLeod, 2004). CGS may provide one explanation for this continued pursuit. The theory underpinning CGS suggests a hierarchical model of goals (Carver & Scheier, 1990). The most concrete or "lower order" goals, a specific, well defined goal usually achieved within a stipulated period of time, are at the bottom. Clinically, these are usually action orientated and behavioural. The more abstract or "higher order" goals, a non-specific, roughly defined goal not usually achieved within a particular period of time, are at the top. Clinically, these might be broad ideal notions of the self and world, intra-psycho and associated with values and identity – as suggested by Beck (1967a). CGS theory suggests two sources of difficulties: (i) to perceive happiness as a higher order achievable goal rather than this being a consequence of living one's life in a certain manner; (ii) to perceive the attainment of happiness as reliant on achieving particular lower order goals (e.g. to be promoted at work). McIntosh (1996) supported the latter idea and described this as linking goals. This is where higher order goals are linked to the achievement of

lower order goals. Individuals who had this perception were described as ‘linkers’. ‘Linkers’ are vulnerable to depression owing to the possibility of their linked lower order goals not being accomplished and because they put their happiness on hold whilst pursuing these goals (McIntosh, 1996).

If an individual has made the attainment of a single goal a pre-requisite for well-being and happiness, thereby cognitively appraising a goal outcome as high in CGS, they will likely deem themselves unhappy during the goal pursuit process, regardless of other life events or experiences. Moreover, Emmons (1992) demonstrated that individuals who are oriented towards higher order goals perceive their goals to be more difficult to achieve and report increased depression. CGS research has reported a significant relationship between CGS and rumination, and rumination and depression (Street, 1999). Specifically, as CGS increases so too does ruminative thinking and consequently depressive symptoms. This link between rumination and depression has been widely evidenced (e.g. Nolen-Hoeksema & Davis, 1999; Abela & Hankin, 2011; Robinson & Alloy, 2003). Therefore, the higher the CGS (one whom increasingly makes their happiness, feeling of fulfilment and self-worth reliant on the accomplishment of particular goals), the higher the likelihood of negative affect and hence the inclusion of this cognitive appraisal in the present review.

### **The present review**

Goal research is important in that it inspires integration of a variety of different theoretical perspectives in relation to both the individual and their environment and offers an important insight into why negative affect may persist in some and not others. This systematic review focuses on key cognitive appraisals in relation to approach- and avoidance- goal pursuit in depression and anxiety in adulthood.

The most recent review of the literature in approach and avoidance goal motivation was published by Trew (2011) who considered the roles of approach and avoidance in depression. As approach- and avoidance- goal motivation literature has not included the goal cognitive appraisal, CGS, this was separated from approach- and avoidance- goal motivation in the literature search. This was to ensure a thorough review of the relevant literature when considering the research question. In



relation to CGS, the most recent review was published by Street (2002) who considered goal setting, goal pursuit and depression.

The main objective of the present review was to investigate specific approach- and avoidance- goal cognitive appraisals as implicated in depression and anxiety. The cognitive appraisals CGS, expectancy, difficulty, progress and effort in relation to approach- and avoidance- goal motivational systems in depression and anxiety, have not been considered, in combination, in literature to date.

### **Review questions and purpose**

The purpose of this review was to collate the literature relating to approach- and avoidance- goal cognitive appraisals and examine in more detail how these are implicated in adult depression and anxiety. To evaluate this, articles which fulfilled the relevant inclusion criteria were reviewed.

Specifically, the following questions were posed of these articles:

- 1) Are the approach- and avoidance- goal cognitive appraisals: CGS, expectancy, difficulty, progress and effort, implicated in depression and/or anxiety in adulthood?
- 2) What are the reasons given for posited relationships?

### **Method**

#### **Search and screening procedures**

Scopus, PsycINFO, MEDLINE and Web of Knowledge were electronically searched for the published literature up to October 2013. All possible combinations of the following keywords were used in a Boolean search: “Approach and avoidance goals/motivation”; “depression”; “anxiety”; “[goal]appraisals”; “conditional goal setting”; “[goal] expectancy/likelihood/subjective probability judgements”; “[goal] difficulty”; “[goal] progress”; “[goal] effort”. Searches were done with and without the bracketed words. Articles were included in the review if they met the following inclusion criteria: published in a peer reviewed journal; written in English; used validated measures of anxiety and/or depression; empirical research; and adult participants (18 years or older). The search was limited by date from the first available empirical literature in approach- and avoidance- goal motivation relevant to this review’s objectives, noted at 1996 (Elliot & Harackiewicz, 1996).

Research with clinical samples in this area are limited, thereby studies that had utilised non-clinical populations were also included in the review.

The purpose of this review was to investigate whether approach- and avoidance- goal cognitive appraisals, specifically, CGS, expectancy, difficulty, progress and effort are implicated in depression and/or anxiety in adulthood. Articles were excluded if the content focused principally on constructs other than those identified under the search terms cited above. The search process used to select papers for the review is displayed in Figure 1. An initial search of the literature highlighted that there were no studies explicitly designed to target CGS and approach and avoidance goal motivation. Consequently, “Conditional Goal Setting” and “approach and avoidance goal motivation” were searched separately as distinct areas of interest. Subsequently, these searches are reported separately in Figure 1. However, the same inclusion and exclusion criteria applied to all searches. Appendix 1 shows a breakdown of the searches, number of hits and relevant publications considered for further evaluation.

**Assessment of quality.** After the above methods and criteria had been applied, the quality and methodological strength of the selected publications were evaluated. The most appropriate design for deducing causality is a randomised controlled trial (RCT). However, this design has not been adopted in the area of approach- and avoidance- goal cognitive appraisals in relation to depression and anxiety, and neither have they in CGS.

A rigorous design, appropriate sample size, the use of reliable and valid measures and clear efforts to reduce extraneous variables were deemed indicative of decent quality. A 14-item checklist, namely the standard quality assessment criteria, issued by Kmet, Lee and Cook (2004) was used to further evaluate the quality of the selected publications. This tool can be used to assess primary research from a diverse range of disciplines to enable the appropriate identification of papers for systematic review in a way that is replicable, systematic and quantifiable. Studies were assessed with regards to their account of: purpose; research design and its appropriateness; sample selection and size, and its appropriateness; participant characteristics; allocation and blinding procedures where applicable; results and methods of assessment; analysis and its appropriateness; variance of results;

how confounding variables were controlled for; sufficiently detailed results, and how the results support the conclusion. Appendix 2 shows an example of the assessment checklist used to identify papers for systematic review. The papers ( $n=8$ ) identified for the present review met the above criteria satisfactorily to be considered suitable.

### **Data analysis**

Due to the heterogeneity of the study samples, effect sizes were not quantitatively analysed. However systematic procedures were applied to the reviewed publications. Table 1 displays synthesised data.

### **Description of included studies**

The search process used to identify papers for the review is displayed in Figure 1. Ninety two papers were identified via the electronic databases. These were then assessed in accordance with the inclusion and exclusion criteria. Eighty four articles were excluded with eight remaining for further quality assessment. These eight publications were concluded as good quality. Therefore, the eight studies systematically reviewed were: Coats, Janoff-Bulman and Alpert (1996); Dickson, Moberly and Kinderman (2011); Dickson (2006); Vergara and Roberts (2011); Wollburg and Braukhaus (2010); Hadley and MacLeod (2010); Schofield, Dickson, Mummery and Street (2002) and Street (2003). The paper by Coats, Janoff-Bulman and Alpert contains two studies of which study 1 was relevant to approach- and avoidance- goal motivation and depressive mood and accordingly reported in the review. Study two was not included in the review. Details of included studies can be seen in Table 1.

Approach- and avoidance- goal cognitions in depression and anxiety

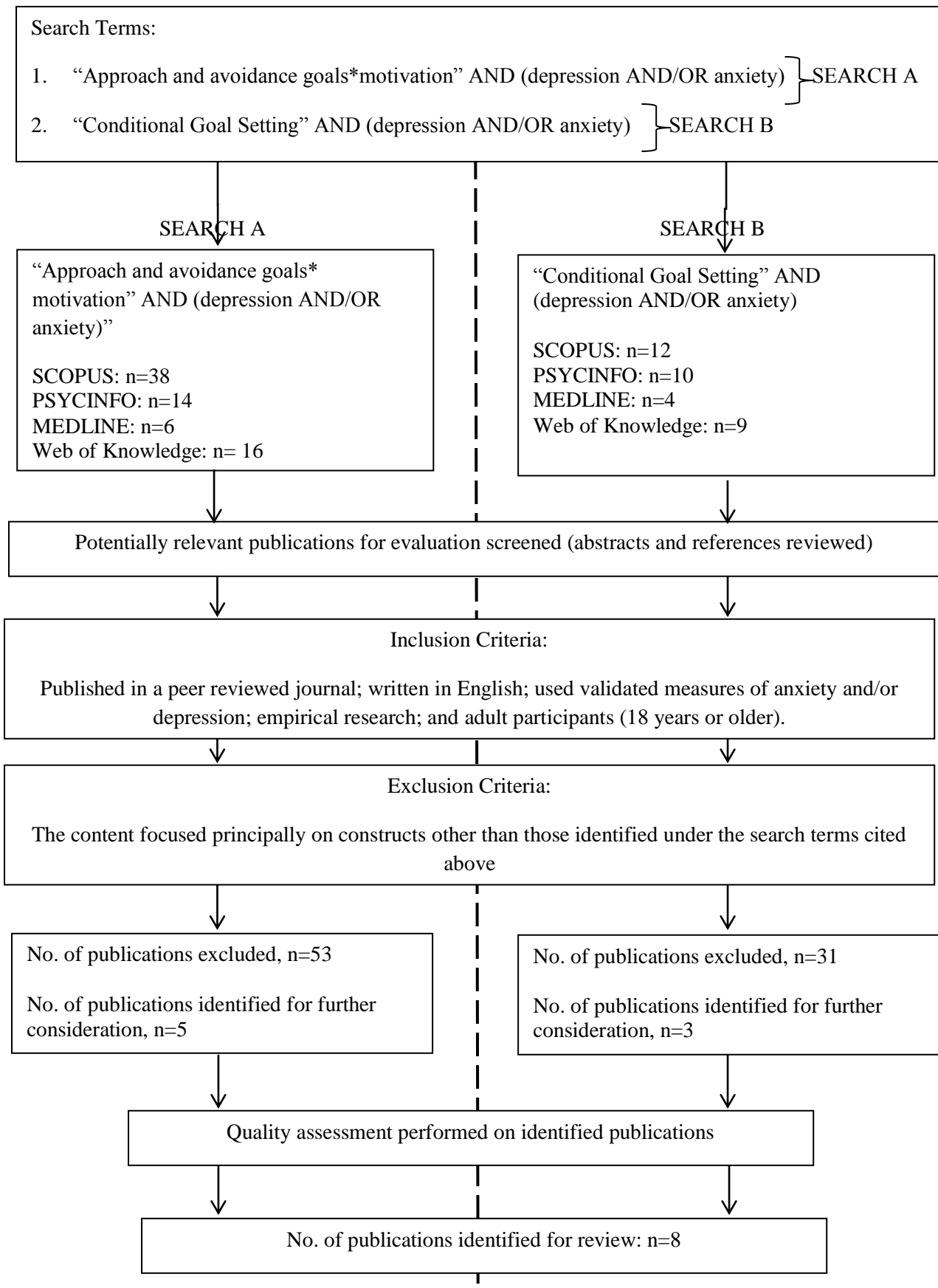


Figure 1 Flowchart displaying the search process of papers selected for review

Approach- and avoidance- goal cognitions in depression and anxiety

Table 1 *Details of included studies*

Key Term	Study	Country	Design	Sample type	Gender mix	Sample size	Mean Age
Approach- and avoidance- goal motivation	Coats, Janoff-Bulman & Alpert (1996): Study 1	USA	WG, CS	Non-clinical, students: depression	Mixed	81	Adult
	Dickson (2006)	England	BG, CS	Non-clinical students: anxious vs. non-anxious	Mixed	74	20.5
	Dickson, Moberly & Kinderman (2011)	England	BG, CS	Clinical, adults: depressed vs. never depressed	Mixed	49	33.8
	Vergara & Roberts (2011)	USA	BG, CS	Non-clinical, students: depressed vs. never depressed	Mixed	83	19.5
	Wollburg & Braukhaus (2010)	Germany	WG, LG	Clinical, adults: depressed	Mixed	657	45.2
Conditional Goal Setting	Hadley & MacLeod (2010)	England	WG, CS	Non-clinical, adults: depressed	Mixed	86	51
	Street (2003)	Australia	WG, LG	Clinical, Oncology, adults: depressed	Mixed	67	54.4
	Schofield, Dickson & Mummery (2002)	Australia	WG, CS	Non-clinical, athletes, adults: depression and anxiety	Mixed	223	35.5

*Note:* Design – Within group (WG), Between group (BG), Longitudinal (LG), Cross-sectional (CS)

## Results

Eight studies were identified for review that considered the research question: Are the approach- and avoidance goal cognitive appraisals: CGS, expectancy, difficulty, progress and effort, implicated in depression and/or anxiety in adulthood? As limited research has investigated the cognitive appraisal CGS in approach- and avoidance- goal motivation, these concepts were separated during the search process to extend the number of papers identified for review. Five studies were identified concerning approach- and avoidance- goal motivation in depression and/or anxiety (two of these studies included investigations of the cognitive appraisals, expectancy and difficulty). Three studies were identified which focused upon CGS in depression and/or anxiety (one of these studies included the additional cognitive appraisal, expectancy). There was limited empirical literature that investigated the approach- and avoidance- goal cognitive appraisals, progress and effort, in depressed and/or anxious individuals. This will be discussed later in terms of implications for future research.

### **Identified studies in approach- and avoidance- goal motivation**

There were 944 participants in total across these five selected studies. Participant numbers ranged from 49-657. Four of the five studies adopted a cross-sectional design; one study was also described as assuming a remitted depression design and one study was longitudinal. Two studies drew their participants from clinical environments (e.g., Hospital, GP Practices) and three utilised non-clinical student samples. Measures of depression and/or anxiety were included in all of the studies. All studies assessed approach- and avoidance- goal motivation in relation to mood. Beck's Depression Inventory (BDI; Beck, Ward, Mendelson, Mock & Erbaugh, 1961; BDI-II; Beck, Steer & Brown, 1996) was used in three of the studies. In one study, the Patient Health Questionnaire (PHQ9; Cannon et al., 2007) and the Mini-International Neuropsychiatric Interview (MINI; Sheehan, Lecrubier & Sheehan, 1998) were used alongside the BDI-II. The Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) was used in one study. The Zung Self-rating Depression Scale (Zung, 1965) was used in one study. Four studies used just one mood indicator related to depression and/or anxiety, one study used three tools for this purpose. Four studies utilised pre-studied methods of generating personal goals, of which three studies used the Goals Task by Dickson

and MacLeod (2004a, 2004b) and one study used an adapted version of Emmons (1991) goals task. Two studies included variables directly relevant to the goal cognitive appraisals specified in the research question, specifically, expectancy ( $n=2$ ) and difficulty ( $n=1$ ) in relation to approach- and avoidance- goal pursuit. No papers that fulfilled the inclusion and exclusion criteria were located that included the goal cognitive appraisals, progress and effort.

**Description of the general findings.** A summary of the main findings of the selected studies in approach- and avoidance- goal motivation and emotional state can be found in Table 2. Study one of Coats, Janoff-Bulman and Alpert (1996) considered depression in approach- and avoidance- goal motivation with university students. They reported that overall, participants generated more approach goals than avoidance goals. Furthermore, they also found the more avoidance goals a participant generated, the greater their level of depression and the greater the number of approach goals, the lower the level of depression. Finally, results revealed that avoidance goals were rated: as having been more difficult to achieve in the past; less likely to be achieved in the future (i.e. less likely to successfully avoid the to-be-avoided goal outcome); less important in their accomplishment and derived less happiness when accomplished.

Dickson, Moberly and Kinderman (2011) investigated depression in approach- and avoidance- goal motivation using a clinically depressed and never-depressed sample. Similarly to the above mentioned study, they too reported that, overall, all participants generated more approach goals than avoidance goals. They found that compared to controls the depressed group did not have fewer approach goals or more avoidance goals, nor did they differ on their ratings of the subjective importance of their goals. This suggests no goal deficiency in depression and was contrary to their hypotheses. However, the depressed group did differ from the control group in their pessimistic goal cognitive appraisals. The depressed group rated less expectancy for approach goals (positive outcomes) and more expectancy for avoidance goals (negative outcomes), in comparison to the never-depressed group. The depressed group also rated less control for their goal outcomes than the never-depressed group. Additionally, the depressed group generated more pessimistic explanations for goal outcomes.

## Approach- and avoidance- goal cognitions in depression and anxiety

Wollburg and Braukhaus (2010) studied depression in approach- and avoidance- goal motivation using a clinically depressed sample attending a multimodal cognitive-behavioural therapy programme (CBT). Participants were separated into an approach group (those whom identified only approach goals) and an avoidance goal group (those whom identified at least one avoidance goal). In accordance with the other studies, they reported that overall participants generated more approach goals than avoidance goals. They found that depression reduced post CBT in all participants; however depression reduced more in participants whom generated only approach goals. Both groups achieved all their goals. Contrary to Coats et al. (1996) and in support of Dickson et al. (2011), level of depression was not correlated with the number of avoidance goals generated, i.e. the results showed no group difference. However, level of depression appeared to decrease as the rate of attainment of both approach- and avoidance- type goals increased in Wollburg and Braukhaus (2010).

Vergara and Roberts (2011) explored depression in approach- and avoidance- goal motivation in an undergraduate student sample, identified as either depressed or never-depressed. They reported that individuals who generated more approach goals, also generated more avoidance goals. Previously depressed individuals reported more avoidance goals compared to never-depressed participants. In support of Dickson et al. (2011) and Wollburg and Braukhaus (2010), no difference was found between groups for number of generated approach goals. Using a self-report measure, Vergara and Roberts (2011) also reported an overactive BIS (avoidance goal motivation; Gray, 1987a, 1990) in currently depressed individuals compared to never-depressed individuals. Previously depressed individuals reported an overactive BAS (approach goal motivation; Gray, 1987a, 1990) compared to never depressed individuals.

In contrast to the above studies, Dickson (2006) considered anxiety in approach- and avoidance- goal motivation with an undergraduate student sample, identified as anxious or non-anxious. Similarly to the above findings, all participants overall generated more approach goals than avoidance goals. As predicted, anxious and non-anxious students did not differ on the number of approach goals generated but they did generate more avoidance goals than the non-anxious group, and this finding remained significant after depression was controlled for. Dickson (2006) also measured



### Approach- and avoidance- goal cognitions in depression and anxiety

the number of positive and negative consequence steps that participants produce in respect of their most salient approach goal and avoidance goal occurring and not occurring. Anxious participants generated more negative consequence steps associated with goal non-achievement than non-anxious individuals. However, there was no significant difference reported between groups on the number of associated positive consequence steps generated in response to goal achievement.

Table 2 A summary of the main findings of the selected studies in approach- and avoidance- goal motivation and emotional state

Author, Year	Participants			Empirical Focus						Study Quality	
	N	Mean Age	Type	Method and Materials	Validated measures of depression &/or anxiety	Goal cognitive appraisals re: review research question	Findings	Analysis	Implicated in depression &/or anxiety	Control (Y/N)	Replicable (Y/N)
Coats, Janoff-Bulman & Alpert (1996): Study 1	81	Adult*	University Students	-Goals listed: Goal task modelled on Emmons (1991). -Goals coded: approach or avoidance type -Goals rated: importance, satisfaction, difficulty and expectancy. -Psychological well-being measured: Rosenberg Self-Esteem Scale (Rosenberg, 1965); Life Orientation Test (Scheier & Carver, 1985) to measure optimism; and Zung Self-Rating Depression Scale (Zung, 1965)	Zung Self-Rating Depression Scale (Zung, 1965)	Difficulty and expectancy	-Overall, more ap type goals than av type goals generated -The greater the no. of av goals, the greater the depression; the greater the no. of ap goals, the lower the depression. -Av goals rated as more difficult and less likely to be achieved (expectancy lower), less important and less derived happiness.	Correlations	Depression	N	Y
Dickson, Moberly & Kinderman (2011)	49	33.8	Clinical & General population: Clinically depressed (n=23); never-depressed (n=26)	-Goals listed: Goals Task (Dickson & MacLeod, 2004) - Goals coded: ap or av type -Goal explanation Task: why two most important goals will and will not be achieved (Dickson & MacLeod, 2006) -Goals rated: importance, control and expectancy -Depression measured: BDI-II (Beck, Steer & Brown, 1996)	BDI-II (Beck, Steer & Brown, 1996)	Expectancy	-Overall, more ap type goals than av type goals generated -Contrary to hypotheses: depressed gp did not have fewer ap goals, more av goals, a general goal deficit nor differ in importance compared to control gp -depressed gp rated less expectancy for ap goals than control gp and more expectancy for av goals than control gp -depressed rated goal outcomes as less controllable than control gp. -depressed gp generated more pessimistic explanations for goal outcomes than controls	ANOVAs	Depression	Y	Y
Wollburg & Braukhaus (2010)	657	45.2	Clinical: depressed; approach gp (n=464), avoidance gp (n=193). Pre and Post CBT	-All participants attended multimodal CBT program and depression measured pre and post CBT. -Goals listed: Three major goals - Goals coded: ap or av type -Depression measured: BDI (Beck, Ward, Mendelson, Mock & Erbaugh, 1961)	BDI (Beck, Ward, Mendelson, Mock & Erbaugh, 1961)		-Overall, more ap type goals than av type goals generated - BDI score decreased post CBT in both groups, but more so in ap gp. -Both groups achieved all their goals, to approximately 50%. -BDI score change not correlated to no. of av goals -Improvement on BDI positively related to average rating of attainment on both ap and av goals	ANOVAs and Correlations	Depression	N	Y

Approach- and avoidance- goal cognitions in depression and anxiety

Table 2 continued *A summary of the main findings of the selected studies in approach- and avoidance- goal motivation and emotional state*

Author, Year	Participants			Empirical Focus					Study Quality		
	N	Mean Age	Type	Method and Materials	Validated measures of depression &/or anxiety	Goal cognitive appraisals re: review research question	Findings	Analysis	Implicated in depression &/or anxiety	Control (Y/N)	Replicable (Y/N)
Dickson (2006)	74	20.5	Undergraduate students: anxious group (n=41); non-anxious group (n=33)	-Goals listed: Goals Task (Dickson & MacLeod, 2004) - Goals coded: approach or avoidance type -Associated consequences: “catastrophising procedure” (modelled on Vasey & Borkoves, 1992) and “optimising procedure” and coded as positive/negative -Anxiety measured: HADS (Zigmond & Snaith, 1983)	HADS (Zigmond & Snaith, 1983)		-Overall, more ap type goals than av type goals generated - anxious and non-anxious gps did not differ on no. of ap goals generated. -Anxious gp generated more av goals than non-anxious gp -depression controlled for, no. of av goals for anxiety remained significant -neither anxiety nor depression were significant predictors on no. of ap goals -anxious generated more negative consequence steps for goals, no difference between groups on no. of positive consequence steps	ANOVAs	Anxiety	Y	Y
Vergara & Roberts (2011)	83	19.5	Undergraduate Students: depressed (n=43), never depressed (n=40)	-Goals Listed: Modified version of Dickson & MacLeod (2004a, 2004b) to generate present goals participants are actively pursuing -Goals coded: ap or av type -BIS and BAS activation measured: Sensitivity to Punishment (SP) and Sensitivity to Reward (SR) Questionnaire (SPSRQ; Torrubia, Avila, Molto, & Caseras, 2001) -Goal Commitment measured: Revised HWK Goal Commitment (Klein, Wesson, Hollenbeck, Wright & DeShon, 2001) -Implementation intentions measured: Spontaneous Implementation Intention Scale (Brickell, Chatzisarantis & Pretty, 2006) - Depression measured: PHQ9 (Cannon, Tiffany, Coon, Scholan, McMahon & Leppert 2007); BDI-II ( Beck, Steer & Brown, 1996); MINI (Sheehan, Lecrubier & Sheehan, 1998)	-PHQ9 (Cannon, Tiffany, Coon, Scholan, McMahon & Leppert 2007) -BDI-II ( Beck, Steer & Brown, 1996) -MINI (Sheehan, Lecrubier & Sheehan, 1998)		-Individuals who generated more ap goals, also generated more av goals -BDI positively correlated with SP, not significantly associated with SR -Both ap and av goal commitment and spontaneous implementation were positively correlated; more committed, tend to form plans for their goals -previously depressed reported a higher no. of av goals -no difference for ap goals across groups When current depression controlled for, previously depressed had marginally higher no. of av goals compared to never depressed -Overactive BIS in current depressed compared to never depressed - previous depression gp reported an overactive BAS compared to never-depressed	ANOVAs and ANCOVAs	Depression	Y	Y

Note: Findings – Approach (Ap), Avoidance (Av), Group (Gp)

### **Identified studies in Conditional Goal Setting (CGS)**

Based on criteria, three studies were identified which focused upon depression and/or anxiety in CGS. There were 376 participants in total across these three selected studies. Participant numbers ranged from 67-223. Two studies adopted a cross-sectional, within-subjects design and one study assumed a longitudinal, within-subjects design. None of the studies drew their participants from an exclusively clinical- depressed or –anxious sample. One study drew their participants from a depression charity; one study utilised athletes and one study identified participants whom had recently received a diagnosis of cancer.

Measures of depression and/or anxiety were included in all of the studies. All studies assessed CGS with depression and/or anxiety. The Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983) was used in one study alongside Beck's Hopelessness Scale (Beck, Weissman, Lester & Trexler, 1974). The Centre for Epidemiological Studies Depression Inventory (CES-D, Radloff, 1977) was used in two of the studies. One study used the rumination items from Kuhl's Action Control Scale (Kuhl and Kazen, 1994) alongside the CES-D and one study used the Competitive State Anxiety Inventory-2 (CSAI-2; Martens, Burton, Vealey, Bump & Smith, 1990) with the CES-D. All studies used just one mood indicator to specifically assess depression and/or anxiety. Two studies assessed CGS in terms of happiness, fulfilment and self-worth (Street, 1999; 2002). One study used McIntosh's linking inventory (McIntosh & Martin, 1992) to study CGS. One study also had participants rate expectancy in relation to self-generated personal goal outcome; goals were not coded as approach- or avoidance- type (Hadley & MacLeod, 2010)

**Description of the general findings.** A summary of the main findings of the selected studies in CGS and emotional state can be found in Table 3. Street (2003) examined CGS in depression with individuals at the time of receiving a diagnosis of cancer and again two months post diagnosis. Two types of CGS were considered: personal CGS (happiness, fulfilment and self-worth) and social CGS (approval, pride and acceptance). CGS in the present review relates to personal CGS. Participants with depression were more likely to have higher personal CGS at the point of diagnosis (Time 1). Personal CGS was significantly positively correlated with both rumination and depression at

diagnosis (Time 1). However, when rumination was controlled for, depression and personal CGS were no longer significantly related, suggesting rumination as a mediating factor. Rumination was found to only occur in relation to personal CGS.

Hadley and MacLeod (2010) investigated depression, anxiety and hopelessness in CGS with adults recruited from a registered charity which supports people with depression. CGS and expectancy significantly predicted anxiety and depression respectively. Similarly to Street's (2003) study, correlations revealed that the higher the depression, the higher the level of CGS. Furthermore, as hopelessness and anxiety increased so too did the level of CGS. In addition, the more depression, anxiety and hopelessness individuals experienced, the less expectancy reported in relation to goal outcomes.

Schofield, Dickson and Mummery (2002) investigated depression and anxiety in CGS with athletes before they took part in a competitive event. They reported that individuals with high CGS were more likely to have higher levels of depression compared to those with low CGS. In accordance with Hadley and MacLeod (2010), individuals with high CGS were also more likely to have higher levels of anxiety compared to those with low CGS. Finally, they surmised that depression occurs as a result of increased pre-performance somatic anxiety and high CGS.

In summary, the results of the reviewed studies suggest that it is not only the way we frame our goals (approach or avoidance) that may have a detrimental or positive affect on our emotions, but how we cognitively appraise our goals may also be implicated in depression and anxiety. Following the presentation of Table 3, the results of the reviewed studies will be discussed.

Table 3 A summary of the main findings of the identified studies in CGS and emotional state

Approval and avoidance goal cognitions in depression and anxiety

Author, Year	Participants			Empirical Focus						Study Quality	
	N	Mean Age	Type	Method and Materials	Validated measures of depression &/or anxiety	Goal cognitive appraisals re: review research question	Findings	Analysis	Implicated in depression &/or anxiety	Control (Y/N)	Replicable (Y/N)
Street (2003)	67	54.4	Clinical, Oncology: Depressed	-Materials repeated two months post first completion (upon cancer diagnosis) -Goals Listed: Most important goals (told “the term ‘important goals’ refers to the most important things that people want to have, to keep and to pursue in their lives”) - CGS assessed: Personal CGS (happiness, fulfilment and self-worth rated; Street, 1999) and Social CGS (approval, pride and acceptance; modified from Street, 1999) - Depression and rumination measured: CES-D (Radloff, 1977); rumination items from Kuhl’s Action Control Scale (Kuhl and Kazen, 1994)	CES-D (Radloff, 1977)	CGS	- personal CGS significantly correlated with both rumination and depression at time 1 - At time 1: rumination significantly correlated with depression; when rumination controlled for, depression and personal CGS not significant: suggests rumination was the mediating factor. -rumination only occurs in relation to important goals towards personal CGS - Participants with depression, more likely to have higher personal CGS at time 1	Correlations and regressions	Depression	N	Y
Hadley & Macleod (2010)	86	51	Depression Charity	-Goals listed: Measure for eliciting positive future goals and plans (MEPGAP; Vincent, Boddana & MacLeod, 2004) -CGS assessed: happiness, fulfilment and self-worth rated (Street, 2002) -Goals rated: expectancy -Depression and hopelessness measured: HADS (Zigmond & Snaith, 1983); BHS (Beck, Weissman, Lester & Trexler, 1974)	HADS (Zigmond & Snaith, 1983)	CGS & expectancy	-No significant relationship between the number of goals participants were able to think of and levels of hopelessness -Those high in hopelessness, perceived less expectancy in respect of their goals -High CGS related to hopelessness -CGS and expectancy significantly predicted anxiety and depression - Correlations revealed: the more hopelessness: the more anxiety, depression and CGS and the less expectancy -the more depression: the more anxiety, more CGS and less expectancy - the more anxiety: the more CGS and the less expectancy	ANOVAS and Correlations	Depression and anxiety	N	Y

Approach- and avoidance- goal cognitions in depression and anxiety

Table 3 continued *A summary of the main findings of the identified studies in CGS and emotional state*

Author, Year	Participants			Empirical Focus						Study Quality	
	N	Mean Age	Type	Method and Materials	Validated measures of depression &/or anxiety	Goal cognitive appraisals re: review research question	Findings	Analysis	Implicated in depression &/or anxiety	Control (Y/N)	Replicable (Y/N)
Schofield, Dickson & Mummery (2002)	223	35.5	Athletes	-Materials administered prior to a competitive event - CGS assessed: McIntosh Inventory to measure CGS - Depression and anxiety measured: CES-D (Radloff, 1977); CSAI-2 (Martens, Burton, Vealey, Bump & Smith, 1990) -additional measures: Hater's importance scale (Messer & Harter, 1986) to assess the number of important life roles.	CES-D (Radloff, 1977) CSAI-2 (Martens, Burton, Vealey, Bump & Smith, 1990)	CGS	-High CGS, more likely to have higher anxiety, lower task confidence and higher depression than low CGS -depression occurs as a result of increased pre-performance somatic anxiety and high CGS.	Correlations and regressions	Depression and Anxiety	N	Y

## Discussion

Eight studies were identified for review that considered the research question: Are the approach- and avoidance- goal cognitive appraisals: CGS, expectancy, difficulty, progress and effort, implicated in depression and/or anxiety in adulthood? As research has not yet investigated the cognitive appraisal CGS in approach- and avoidance- goal motivation, these concepts were separated during the search process. Five studies were identified concerning approach- and avoidance- goal motivation in depression and/or anxiety (two of these studies included investigations of the cognitive appraisals: expectancy and difficulty): Coats, Janoff-Bulman and Alpert, 1996; Dickson, Moberly and Kinderman, 2011; Wollburg and Braukhaus, 2010; Vergara and Roberts, 2011; Dickson, 2006. Three studies were identified which focused upon CGS in depression and/or anxiety (one of these studies included the additional cognitive appraisal, expectancy): Street, 2002; Hadley and MacLeod, 2010; Schofield, Dickson and Mummery, 2002. There was limited empirical literature that investigated the approach- and avoidance- goal cognitive appraisals, progress and effort, in depressed and/or anxious individuals. Findings will be discussed in terms of depression and anxiety.

### Depression

**Approach- and avoidance goal motivation.** Four out of five of the identified studies in approach- and avoidance- goal motivation considered depression (Coats et al., 1996; Dickson et al., 2011; Wolburg & Braukhaus, 2010; Vergara & Roberts, 2011). There was a dominant methodological focus on the number of approach- and avoidance- goals individuals generated and whether these differ in those who are depressed or anxious. All the reviewed studies that considered approach- and avoidance- goal motivation in depression reported that across all participants (both depressed and non-depressed individuals), more approach goals were generated than avoidance goals. This suggests that individuals vulnerable to depression tend to engage in similar reward-seeking, self-regulatory approaches as never-depressed individuals, i.e. approach goal motivation remains intact. This does not support one aspect of Fowles' (1988, 1994) view that depression is characterised by high BIS and low BAS activity, but lends support for his suggestion that the BIS and BAS systems are independent. Moreover, these findings potentially contradict Higgins' Theory of Regulatory Focus



(1997), where ideal self-regulation comprises a promotion focus and ought self-regulation involves a prevention focus. Accordingly, if all participants generated more approach goals, thus arguably a promotion focus, one might not expect depressive mood to be present. This highlights the relevance of findings around avoidance goal motivation when considering what may distinguish individuals' vulnerable to depression from those whom have never been depressed. Coats et al. (1996) and Vergara and Roberts (2011) reported that the number of avoidance goals generated is heightened with level of depressive mood. This would support Gray's theory (1987b, 1990) in which the behavioural inhibition system (BIS), suggested to facilitate avoidance propensities is linked to low positive affect (Fowles, 1988, 1994) and Higgins' theory in which an ought self-mismatch occurs where there is a prevention focus (Higgins et al., 1994). Together the reported differences in number of avoidance goals and lack of significance in the number of approach goals (Coats et al., 1996; Vergara & Roberts, 2011) may suggest that the valence of goal formation distinguishes those vulnerable to depressed mood from never-depressed individuals, with the inclination to generate avoidance goals possibly being a trait-like feature associated with depressive vulnerability.

Vergara and Roberts' (2011) study further supported Gray's theory (1987a). They reported an overactive BIS in currently depressed individuals, compared to never depressed individuals and suggested BIS as a state indicator of depression. However, BIS did not differ between previously depressed and never depressed participants (Vergara & Roberts, 2011). This suggests that a temperamental predisposition to avoidance motivation may not be defined as a characteristic of depressive vulnerability but cognitive representations of avoidant self-regulation (particularly, avoidance goals) may do. Moreover, contrary to Fowles (1988, 1994), Vergara and Roberts (2011) found that previously depressed individuals reported an overactive BAS suggesting that previously depressed individuals have the dynamism and motivation to pursue their approach goals. This supports Corr's (2001, 2002) view that both BAS and BIS can facilitate approach and avoidance propensities; they are interdependent systems. Vergara and Roberts (2011) offered a further explanation for these findings, suggesting that the recovery process from depression involves heightened BAS activity that remains elevated among recently remitted individuals. This was

supported by Kasch, Rottenberg, Arnow and Gotlib (2002) and McFarland, Shankman, Tenke, Bruder and Klein, (2006) who reported that increased BAS in currently depressed individuals prospectively predicts remission.

Wollburg and Braukhaus (2010) did not support the view that depressed individuals generate more avoidance goals than approach goals. However, they did find that depressed individuals who had at least one avoidance goal experienced significantly less symptomatic improvement post therapy and felt more depressed. Dickson et al. (2011) also found that clinically depressed adults did not generate more avoidance goals than those who had never experienced depression. Neither did depressed individuals differ from controls on number of generated approach goals either (Dickson et al., 2011). This would challenge previous findings that dysphoric (non-clinical) adolescents generated fewer approach goals and more avoidance goals than non-dysphoric adolescents (Dickson & Macleod, 2006), suggesting possible developmental differences. Interestingly, it was Wollburg and Braukhaus (2010) and Dickson et al. (2011) who studied a clinically depressed sample. Therefore, these findings may be more reliable than other literature when investigating a clinical adult sample in this area and suggest possible differences between clinical and non-clinical depressed samples.

**Goal cognitive appraisals.** Johnson et al. (2010) proposed that emotional disorder is characterised by biased cognitive appraisals of our goals that negatively impact upon adaptive self-regulation whilst representation of our goals remain relatively intact. Findings that depressed individuals do not differ on the number of approach goals generated compared to non-depressed (e.g. Dickson et al., 2011) lends support for the notion that goal representations remain intact despite negative affect. Two of the identified studies in approach- and avoidance- goal motivation considered goal cognitive appraisals, specifically expectancy and difficulty (Coats et al., 1996; Dickson et al., 2011). Coats et al. (1996) found that avoidance goals were rated as having been more difficult to achieve in the past and less likely to be achieved in the future (i.e. less likely to successfully avoid the to-be-avoided goal outcome). This relationship lends support for early findings that as goal difficulty increases; expectancies reduce (Garland, 1982; Matsui et al., 1981).

## Approach- and avoidance- goal cognitions in depression and anxiety

Goal difficulty has been described as a determinant of expectancy beliefs (e.g. Tubbs et al., 1993; Schmidt & Dolis, 2009). However, in depression, previous literature suggests that negative events are rated as more likely to occur than positive events (Butler & Matthews, 1983). This suggests that expectancy ratings would be higher for avoidance goal outcomes (greater likelihood of failing to avoid the undesired outcome) than approach goal outcomes (likelihood of achieving the desired outcome) in depressed individuals. Dickson et al.'s (2011) study supports this view. They found depressed participants rated less expectancy for approach goals and more expectancy for avoidance goals than the control group. This also supported previous findings which reported similar outcomes in depressed adolescents (Dickson & MacLeod, 2006). Hadley and MacLeod (2010) considered expectancy alongside CGS in depression (goals were not distinguished as approach or avoidance but rather defined as 'positive future goals'). Results revealed that the less expectancy was reported in relation to positive future goals, the more depressed the individual.

The above findings support Beck's (1967a) cognitive triad in which one of the components is a negative view of the future and the clinical finding that depressed individuals have a lack of anticipation of future positive experiences (MacLeod & Byrne, 1996; MacLeod et al., 1997). Therefore, in terms of expectancy, the framing of a goal appears to be key to predicting whether expectancy will be low or high in depressed individuals.

Literature suggests that individuals with low mood continue to pursue their goals, despite reporting low ratings of expectancy for future positive experiences and goals (MacLeod & Conway, 2007; Vincent et al., 2004). When Hadley and MacLeod (2010) reported depressed individuals having low expectancy for their generated positive future goals, they also reported these individuals as having a high level of CGS, i.e. their sense of happiness, fulfilment and self-worth is highly conditional on the achievement of their goals. They found high CGS and low expectancy (for positive outcomes) significantly predicted depression. This supported Carver and Scheier (1998) who suggested a relationship between goal expectancy and mood, and Street (1999, 2002) who reported an association between CGS and emotional state. The notion that individuals have increased levels of depression when they make aspects of their wellbeing conditional upon the achievement of their goals

was also supported by Emmons (1992). Emmons (1992) additionally stated that these individuals reported more difficulty in their goal pursuit. This may further explain Coats et al. (1996) findings of increased difficulty ratings and lower expectancy in relation to avoidance goals, where it is possible participants' may have made the achievement (successful avoidance of undesired outcome) of their avoidance goals dependant on feeling happy, fulfilled or having a sense of self-worth and so are making more negative appraisals of these goals (i.e. increased difficulty).

Hadley and MacLeod (2010) and Street (2003) found depression to be associated with high CGS for positive future goals and important life goals. Similarly, Schofield et al. (2002) found depression to be associated with high CGS by measuring linking (the extent to which one's lower order, concrete goals, are linked with higher order goals, abstract goals, as in wellbeing; McIntosh, 1992). Analogous to the approach- and avoidance- goal motivation reviewed studies, Hadley and MacLeod (2010) found no significant relationship between the number of goals participants generated and levels of low mood, further endorsing that goal motivation remains intact despite low mood.

Approach- and avoidance- goal motivation and goal cognitive appraisals were also found to be implicated in anxiety in the reviewed studies.

## **Anxiety**

**Approach- and avoidance- goal motivation.** One of the studies reviewed in approach- and avoidance- goal motivation considered anxiety (Dickson, 2006). There is limited literature that has considered this area of goal motivation in anxiety. To the author's knowledge, no empirical research has considered approach- and avoidance- goal motivation in a clinically anxious sample. Dickson (2006) used a validated, clinically relevant measure of anxiety (HADS; Zigmond & Snaith, 1983). However, participants were a non-clinical university sample. Therefore, even though the anxiety group fell within the symptomatic range on the HADS, the terms 'anxious' and 'anxiety' were not descriptive of a clinical diagnosis of anxiety. In accordance with the papers that investigated approach- and avoidance- goal motivation with depression, Dickson (2006) found that, overall, all participants, anxious and non-anxious, generated more approach goals than avoidance goals. As predicted, anxious and non-anxious individuals did not differ on the number of approach goal they

generated. Contrary to the depressed samples in Dickson et al. (2011) and Vergara and Roberts (2011), anxious individuals were found to generate more avoidance goals compared to non-anxious participants. This finding remained significant after depression had been controlled for (Dickson, 2006). This supports Fowles' (1988, 1994) view that anxiety is characterised by high BIS activity but not low BAS. Dickson's (2006) findings also support cognitive literature which suggests that anxiety can still be accompanied by normal positive affect, possibly allowing approach motivation to remain intact but involves selective attention for threat-pertinent information, potentially aggravating avoidance motivation (Mathews & MacLeod, 1994; Bierman et al., 2005). That is, greater attention and negative affect related to aversive events are not accompanied by diminished attention and decreased positive affect related to moving towards rewarding and pleasant future experiences. Dickson (2006) also explored positive and negative consequence steps that individuals produce in respect of their most salient approach- and avoidance- goals occurring and not occurring. Results suggested that anxious participants generated more negative consequence steps for their goals than non-anxious individuals, further highlighting the negative appraisals individuals with negative affect construe of their goals.

**Goal cognitive appraisals.** In the studies that investigated CGS and emotional state, none of the three studies had a primary focus on clinical anxiety or anxiety without depression. To the authors' knowledge, there has been no empirical research to date that has considered the role of CGS in goal motivation with clinically anxious adults. One of the three reviewed papers in CGS measured anxiety alongside other variables in a depressed sample (Hadley & MacLeod, 2010). One of the papers measured both depressed and anxious mood with CGS in athletes prior to them taking part in a competitive event (Schofield et al., 2002). Both these papers reported heightened CGS when anxiety is elevated. This supports Street (1999) who posited that the higher the CGS, the higher the likelihood of negative affect. Hadley and MacLeod (2010) additionally reported a decrease in expectancy, for positive future goals, when individuals have higher levels of anxiety and higher CGS; corresponding with their findings for depression. This might also support findings that as goal difficulty increases, expectancies decrease (e.g. Garland, 1982; Matsui et al., 1981; Schmidt & Dolis, 2009). For example,

the higher the CGS (i.e. the more one's happiness, fulfilment and self-worth are conditional upon the achievement of one's goals), the more difficult the goal is to attain considering the likely negative affect and consequentially the less expectancy one may report for that goal.

### **Comorbidity**

The lack of empirical literature on goal motivation in clinical anxiety highlights a potential gap in the goal motivational research. However, the inclusion of both depression and anxiety in the majority of the reviewed studies may also be explained by depression and anxiety being highly co-morbid. Around 50-60% of individuals with depression report historical long-standing anxiety. This has been implicated as more persistent than that of singular presentations of depression or anxiety (Kaufman & Charney, 2000; Kessler et al., 2005; Merikangas et al., 2003).

Schofield et al. (2002) found that the higher the CGS, the more likely the individual was to report depressed and anxious mood. They also reported that depression occurs as a result of increased anxiety and high CGS. Moreover, Hadley and Macleod (2010) found CGS and expectancy significantly predicted depression and anxiety respectively and the more hopelessness individuals exhibited, the more depressed and anxious they were. Hopelessness about the future is a fundamental element of depression (Beck, Steer, Kovacs & Garrison, 1985; Abramson, Metalsky & Alloy, 1989). Hadley and MacLeod (2010) found that the more depressed the individual, the more elevated the levels of reported anxiety. These support previous findings of depression and anxiety being highly co-morbid and depressed individuals reporting anxious symptoms (Kessler et al., 2005). This highlights the importance of future research measuring both depression and anxiety in clinical adult samples when studying goal cognitive appraisals, especially given the recent growth therapeutically in a trans-diagnostic approach (e.g. Craske, 2012). The contradictory findings in relation to approach- and avoidance- goal motivation in the studies that involved a depressed sample may be explained by individuals experiencing co-morbid anxiety, which may account for the increased avoidance goal generation (e.g. Coats et al., 1996; Vergara & Roberts, 2011). Alternatively, where no more avoidance goals were generated compared to non-depressed individuals in a depressed sample (e.g.

Dickson et al., 2011), these participants may have been experiencing depressive mood with low/no anxiety.

However, Trew (2011), in her review of the role of approach and avoidance in depression, stated that the relationship between depression and avoidance is not suggested to be dependent on co-morbid anxiety. She reported that the relationship between avoidance and depression (Moulds, Kandris, Star & Wong, 2007) continues after co-morbid anxiety has been controlled for (Johnson, Turner & Iwata, 2003). Yet, these findings were in relation to motivational systems (BIS and BAS) and behavioural avoidance as opposed to the specific types of idiographic goal formation, approach and avoidance, considered in the present review. Despite an expectation that approach motivation would involve both BAS and approach goal setting, and avoidance motivation would involve both BIS and avoidance goal setting, Vergara and Roberts (2011) found that BAS and approach goals and BIS and avoidance goals were not correlated in their sample. This suggests that temperament and goal setting may function at different levels of analysis, indicating the importance of considering co-morbid anxious symptoms in the goal setting of depressed individuals to differentiate goal setting findings.

### **Goal cognitive appraisals and the review question**

Regarding the other goal cognitive appraisals specified in the review question, i.e. progress and effort, empirical literature has not yet considered these goal cognitive appraisals alongside CGS, expectancy and difficulty in approach- and avoidance- goal motivation with depressed and anxious adults. However, we know that goal progress is posited as a determinant of expectancy, as well as goal difficulty and goal effort (e.g. Tubbs et al., 1993; Schmidt & Dolis, 2009) and negative affect has been consistently associated with low perceived rates of goal progress (Carver & Scheier, 1990; Brunstein, 1993; Affleck et al., 1998). Therefore, despite limited empirical literature exploring these goal cognitive appraisals as implicated in depression and/or anxiety, the appropriateness of including these in future goal motivation research still stands. Exploring the goal cognitive appraisals stipulated in the present review's research question in one sample of depressed and/or anxious individuals may

expand the knowledge base in this area - particularly in relation to the distinct and shared approach- and avoidance- goal cognitive appraisals related to depressive and anxious symptomatology.

### **Clinical implications**

When cognitive therapies commence, a primary focus in the treatment of depression and/or anxiety is to identify possible goals. Setting goals is a key therapeutic task for assessing client expectations of therapy and assuring quality of care, and has traditionally been utilised to direct the therapeutic process and evaluate the outcome. However, as suggested in the present review, if approach goals are linked to positive affect and avoidance goals associated with negative affect, it may be more appropriate to consider a re-framing exercise at the time when clients' generate their goals. This might involve assessing the semantics of clients' goals and re-framing avoidance goals into approach goal terms. For example, "I want to avoid failing my exams" (avoidance type goal) would be re-framed as "I want to pass my exams" (approach type goal). Therapists should emphasise the importance of approach goal definition in therapy and attempt to stimulate the approach goal system as regularly as is appropriate to improve therapy outcome. This suggested approach would be well suited to Cognitive Behavioural Therapy (CBT) in which goal setting is a specific task in therapy, in addition to the regular assessment of goals throughout therapy, in terms of tracking- and considering barriers- in goal attainment (e.g., Beck, 1976; Ellis, 1962). However, there has been a shift in focus in third wave CBT approaches from a 'doing mode' to more of a 'being mode' (i.e. experiential, relating differently) (Hayes, 2004). This development, clinically, has led to a reduction in attention to concrete goals. The attention in this review on goal cognitive appraisals may not only be a key development in the area of goal motivation research, but be a helpful progression concurrent with the reduced focus third wave cognitive behavioural therapies have on concrete goals. Therefore, future research regarding the predictive power of goal cognitive appraisals could shape clinicians' understanding of the cognitions driving one's goals and the impact these may have on mood, regardless of the goal itself.

Therefore, goal setting may not be the only factor implicated in depression and/or anxiety. The results of this review would imply that therapeutic efforts should pay more attention to



identifying, reviewing and challenging negative cognitions relating to goal pursuit rather than a sole attention of identifying concrete goals. An appropriate platform for this clinically may lie in motivational interviewing in which clients are firstly assessed in terms of their ambivalence to change (maps onto avoidance cognitions), with the key therapeutic task being to elaborate and strengthen change talk, moving away from ambivalence (maps onto approach cognitions) (Miller & Rollnick, 2002, 2013).

Goal cognitive appraisals may potentially hold more explanatory power when considering goal motivational implications in depression and/or anxiety. Tentative links have been posited between goal cognitive appraisals: CGS, expectancy, difficulty, progress and effort; and emotional state. However, these goal cognitive appraisals have not been studied together with one participant sample, nor with clinically anxious or clinically depressed individuals, or within approach- and avoidance- goal propensities. Future research could focus on these approach- and avoidance- goal cognitive appraisals with clinically anxious and/or clinically depressed individuals.

Although cognitive therapies have allowed us to understand that unhealthy cognitions exist and affect mood negatively, CGS may offer an explanation of why these destructive cognitions arise and how they impact upon the therapeutic task, procedure and process in interventions such as CBT. By considering CGS in approach- and avoidance- goal motivation, cognitions concerning beliefs and attitudes about personal happiness can be further attended to with the aim of reducing CGS and consequently negative affect. Heightened CGS may also suggest inflexibility in one's goal cognitions, which would be consistent with the cognitive literature that infers inflexible thinking as a characteristic of emotional disorders, such as depression and anxiety (Beck, 1967a). Further research in CGS within approach- and avoidance- goal motivation in depression and/or anxiety may thereby offer further enhancements to the goal setting process in therapy. CGS might also lend itself appropriately to third wave cognitive behavioural therapeutic approaches, such as Acceptance and Commitment Therapy (ACT; Hayes, Strosahl & Wilson, 1999, 2012). For instance, CGS is when a goal's outcome is cognitively appraised as being dependant on the individual's aspects of wellbeing, which possibly could map onto what is contextualised as 'values' in ACT. The therapist in ACT

firstly has the client name their values and generate more concrete goals thereafter once the client's chosen values have been clarified. CGS may be an appropriate indicator of the client's chosen values with a dialogue around wellbeing conditionality on the achievement of one's goals possibly enhancing this therapeutic approach.

Even where goal setting is not a feature of the therapeutic approach all clients that enter treatment for depressed and/or anxious symptoms will possess personal goals which are likely to be disclosed at some point during treatment. Thereby, an awareness of goal formation and the cognitive appraisals depressed and/or anxious individuals may attach to their personal goals may be helpful in shaping the clinician's response to client's personal goals and how they may be impacting upon their emotional state.

The overall mean age across the reviewed papers was 37 years. The peak age of onset for experiencing mental health difficulties is during young adulthood and a rise in depression and anxiety has been reported among this age group (Singleton et al., 2001). Considering the lack of research in this area with depressed and/or anxious young adults, and given the recently reported comparable rates of mental health difficulties in higher education students compared to the broader population (Macaskill, 2013), exploring the reviewed constructs in young adults from a Higher Education Institution who are involved with primary care mental health services may be useful in formulating future methods of support for this group.

### **Recommendations for future research**

In the context of considering goal cognitive appraisals as possible predictors of the severity and persistence of depression and anxiety, future research would benefit from assessing goal cognitive appraisals, specifically: CGS, expectancy, difficulty, progress and effort, in depressed and anxious individuals. There is limited empirical literature in approach- and avoidance- goal motivation with a clinically depressed and clinically anxious sample. Therefore, it would be advantageous for future research to recruit clinically depressed and anxious individuals when studying approach- and avoidance- goal motivation. Examining approach- and avoidance- goal motivation features in clinically depressed and clinically anxious individuals may also be a useful investigation to expand

the literature base regarding what is shared and distinct between depression and anxiety. Considering depression and anxiety are highly comorbid (Kessler et al., 2005) and co-morbid depression and anxiety is the most commonly reported mental health difficulty in Britain (Singleton et al., 2001), research investigating the shared and distinct features of these emotional states might also further enhance psychological support in the future. Finally, the rate of mental health difficulties has recently been reported to be comparable in university students to that of the general population (Macaskill, 2013). Therefore, studying approach- and avoidance- goal cognitive appraisals in clinically depressed and clinically anxious university students may be a useful future study to direct suitable methods of psychological support.

### **Limitations and critique**

Firstly, it should be highlighted that the identified studies in the present review denote a small sample of papers regarding approach- and avoidance- goal motivation and CGS, in depression and/or anxiety, out of the broader literature that has studied approach- and avoidance- goal motivation or CGS. This should be considered when making any inferences from the present review's findings. The reviewed papers were also limited to those written in English. There may be useful papers published in non-English language journals that contribute to this topic but were not included.

As empirical research, to date, has not investigated the cognitive appraisal CGS in approach- and avoidance- goal motivation, it was deemed necessary to separate the search between approach- and avoidance- goal motivation and CGS, in depression and/or anxiety. This meant that the reviewed studies had differing definitions of goals. The approach- and avoidance- goal motivation papers coded participants' generated goals as approach (positive outcomes) or avoidance (negative outcomes). One CGS paper had participants generate 'important life goals' (Street, 2003), the content of which was not specified in terms of their formation, i.e. these could have been approach- or avoidance- type goals. One CGS paper had participants generate 'future positive goals' (Hadley & Macleod, 2010) which may suggest an approach type goal formation, however this was not specified. The third CGS paper (Schofield et al., 2002) measured 'linking' which generated a CGS score, i.e.

participants did not generate specific goals to then appraise. Therefore, any attempt to link the reviewed papers' findings should be approached with caution.

An added issue typical of this area of study is the diversity in goal motivation terminology. Whilst the approach- and avoidance- goal motivation papers consistently had participants elicit personal goals, the way in which these were generated differed. For example, Dickson, 2006, Dickson et al. (2011) and Vergara and Roberts (2011) utilised the goals task by Dickson (2004a; 2004b). However, Coats et al. (1996) was modelled on Emmons (1991), and Wollburg and Braukhaus (2010) gave examples of approach- and avoidance- type goals. Moreover, in Hadley and MacLeod (2010), CGS related to the extent to which one makes one's happiness, sense of fulfilment and self-worth conditional upon the achievement of one's goals. However, Street (2003) referred to this type of CGS as 'personal CGS', adding a second form of CGS, known as 'social CGS'. Schofield et al. (2002) elicited participants' level of CGS by utilising McIntosh's (1992) inventory which measures 'linking' (the more one links one's higher order goals, well-being conditionality, on one's lower order goals, concrete goals – the higher the score of CGS). Such varying terminology creates difficulties in comparing studies.

Another challenge in comparing studies is the variability in measures of depressive and anxious mood. Although the measures of mood in the reviewed papers were validated, the differing constructs may vary the symptoms of anxiety and depression under observation. Moreover, despite all participants being adults, there was a lack of consistency in terms of depressive and anxious presentations in that only two out of the eight papers included a clinical mental health sample with clinical symptoms of mood disorder. Consequently, relating findings to clinically depressed and clinically anxious individuals should be considered tentatively.

Several of the reviewed studies focused on the number of goals participants generated. However there may be alternative, meaningful, qualitative distinctions. For example, Dickson & Moberly (2013) found that depressed participants generated just as many approach goals and avoidance goals as never depressed, however depressed individuals generated more abstract and overgeneralised goals compared to never depressed (i.e. qualitative differences).

## Approach- and avoidance- goal cognitions in depression and anxiety

Three of the eight reviewed papers' participant samples were non-clinical university students, one paper recruited their sample from a depression charity and one paper's participant sample consisted of athletes. When comparing and contrasting the findings, this heterogeneity should be taken into account. Such a diverse population may limit interpretation of results in clinical practice. Added to this, the identified studies utilised participants from westernised countries with predominantly white inhabitants. This may further limit the generalisation of findings to other ethnicities and cultures.

Six of the eight reviewed papers adopted a cross-sectional design (Coats et al., 1996; Dickson, 2006; Dickson et al., 2011; Vergara & Roberts, 2011; Hadley & Macleod, 2010; Schofield et al., 2002). Consequently, as measures were administered on one occasion as opposed to repeated over time (longitudinal), inferences of causality (e.g. goal cognitive appraisals and level of depressive or anxious mood) cannot be assumed. Two of the reviewed papers utilised a longitudinal design (Wollburg & Braukhaus, 2010; Street, 2003) which, unlike the cross-sectional studies, allowed the researchers to detect changes or developments over time. Accordingly, inferences of causality and associations between constructs may be more plausible in these papers than those which adopted a cross-sectional design.

One of the papers dates back to 1996, with the earliest publication thereafter being 2002. The 1996 paper was included as it fulfilled the inclusion criteria. However, the age of this paper, in terms of the varying societal and cultural differences now compared to then, should be considered when making inferences from this review.

Finally, in considering cultural differences, it should be noted that the pursuit of personal goals and personal goal attainment might be viewed as a westernised ideology due to its individualistic focus. Non-westernised cultures tend to be less individualistic and more collectivist than Westernised societies, with group needs often superseding individual needs (Das & Kemp, 1997; Oyserman, Coon & Kemmelmeier, 2002). This emphasis on personal goals may thereby not be relevant in all cultures when considering what predicts negative affect.

## **Conclusion**

The present review has demonstrated that goal formation (approach/avoidance) and the cognitions relating to goal pursuit (CGS, expectancy, difficulty, progress and effort) are implicated in depressed and/or anxious mood. This suggests these goal cognitive appraisals may hold predictive power when examining the features of depression and anxiety. Research would benefit from investigating whether these approach- and avoidance- goal cognitive appraisals predict depressive and/or anxious symptoms, what these conditions have in common and what differentiates them in terms of goal cognitions.

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**Chapter 2: Empirical paper**

**Do approach- and avoidance- goal cognitive appraisals predict anxious and depressive symptoms? An exploratory study**

Article to be submitted to the *Personality and Social Psychology Bulletin* – word limit: 10,000 including abstract and references (Author instructions can be found in Appendix 6)

Chapter 2 word count: 7004

### **Abstract**

The formation of approach- and avoidance- type goals and the cognitive appraisals we construe of our goals are thought to impact upon emotional state. This study investigated whether shared and distinct approach- and avoidance- goal cognitive appraisals, specifically, conditional goal setting (CGS), expectancy, difficulty, progress and effort, predict depression and anxiety. A young adult clinical sample was recruited from a university student primary care service. Participants generated two approach- and two avoidance- type goals before rating them on the specified goal cognitive appraisals. As expected, results identified shared and distinct goal cognitive appraisals in predicting depressive and anxious symptoms. Less perceived approach goal progress and heightened approach goal effort predicted both depression and anxiety. Whereas, heightened approach goal difficulty and CGS, and reduced avoidance goal progress uniquely predicted depression. Unexpectedly, avoidance goal cognitive appraisals did not predict anxiety. Results provide key considerations for future clinical practice.

*Keywords:* approach goal motivation; avoidance goal motivation; goal cognitive appraisals; depression and anxiety; young adulthood.

## Introduction

Cognitive literature has commonly reported how our psychological wellbeing can be affected by the way we think about our future (e.g. Schmuck & Sheldon, 2001). As depression and anxiety are highly comorbid (Kessler et al, 2005), shared and distinct goal cognitions of these conditions was of particular interest in the present study, in an attempt to expand the knowledge regarding what is common and unique to depression and anxiety. A negative view of the future was a key component of Beck's early cognitive model (1967) for depression. Research is relatively limited in relation to depression and anxiety from a motivational perspective, despite goal dysregulation having been noted as characteristic of mood disorders (e.g. Davidson, Pizzagalli, Nitschke & Putnam, 2002). In addition to goal pursuit (Sheldon, Kasser, Smith & Share, 2002), the types of goal we generate have also been suggested to impact on mood (Trew, 2011), specifically, approach- and avoidance- type goals. An approach goal represents a focus on positive outcomes and an attempt to move towards, or sustain, desirable outcomes (e.g. "to pass my exams"). In contrast, an avoidance goal represents a focus upon negative outcomes and an attempt to move away from or to prevent undesirable outcomes (e.g. "not to fail my exams") (Emmons, 1992). These definitions are consistent with motivational theory.

Gray's early prominent biological Theory of Reinforcement Sensitivity (1987, 1990) suggested a behavioural activation system (BAS; approach system) stimulates positive affect whereas a behavioural inhibition system (BIS; avoidance system) stimulates negative affect, particularly anxiety. The BIS is activated when goal conflict arises which hinders resolution and ongoing behaviour (choosing avoidance). This alternatively promotes a focus on obtaining new goal-relevant information and affectively adverse information (e.g. Smillie, Pickering & Jackson, 2006). Fowles (1988, 1994) suggested that anxiety is characterised by high BIS activity but not low BAS activity whereas depression is typified by a combination of high BIS and low BAS. Corr (2001) further argued that both BAS and BIS can facilitate approach and avoidance propensities (respectively) and have conflicting effects on the opposite tendency. Similar to motivational theory, Higgins' Self-Discrepancy Theory (1987, 1997) suggested we are motivated to attain a match between our actual self, ideal self and ought self. Ideal self-regulation maps onto approach motivation (positive

outcome), and ought self-regulation maps onto avoidance motivation (negative outcome; an ought self-mismatch). Higgins' (1997) Theory of Regulatory Focus further suggested a promotion focus which motivates individuals to gain a positive outcome (approach) and a prevention focus motivates one towards avoiding negative outcomes (avoidance). Akin to Higgins' Self-Discrepancy Theory (1987,1997), Carver and Scheiers' Control-Theory (1990) suggested that approach and withdrawal dispositions are represented by partially distinct discrepancy minimising (approach) and discrepancy expanding (withdrawal) action feedback loops, suggesting we monitor our actions and compare our perception to important reference values (i.e. goals). We then take measures to decrease or increase the perceived discrepancy between the reference value and our current emotional state (Carver, 2006).

Biased goal cognitive appraisals have been reported to give rise to negative affect whilst the representation of our goals remains intact (Johnson, Carver & Fulford, 2010). Theory has suggested sustained goal effort when goal expectancy is sufficiently positive and goal disengagement when expectancy is sufficiently negative (Carver, 2006). Goal progress and goal difficulty have also been posited as two related determinants of expectancy beliefs (e.g. Tubbs, Boehme & Dahl, 1993). More recently, perceived goal expectancy has been found to moderate the relationship between goal progress and goal effort, in that as expectancy increases, so too do progress and effort, and when goal difficulty is heightened, expectancy decreases (Schmidt & Dolis, 2009). Dickson, Moberly and Kinderman (2011) found that clinically depressed adults rated less expectancy for approach goals (positive outcomes) and more expectancy for avoidance goals (negative outcomes) than never-depressed individuals. Dickson and Macleod (2006) reported similar findings in depressed adolescents. Based on Fowles' (1988, 1994) view that anxiety is characterised by high BIS but not low BAS, goal cognitive appraisals such as expectancy, difficulty, progress and effort are not expected to be affected in approach goal pursuit in anxious individuals. Yet, avoidance goal cognitive appraisals may well be dysregulated. In a non-clinical sample, Coats, Janoff-Bulman & Alpert (1996) reported avoidance goals to be associated with more difficulty, low expectancy and less derived happiness.

Another cognitive appraisal, with an emerging literature base, which may explain why individuals with low mood continue to pursue their goals, despite low expectancy appraisals (e.g. MacLeod & Conway, 2007) is conditional goal setting (CGS). CGS is the degree to which one's happiness, feeling of fulfilment and self-worth are conditional upon the achievement of one's personal goals (Street, 1999). Research has not yet investigated CGS as an appraisal of approach- and avoidance- goal motivation. CGS theory dictates a hierarchical model of goals (Carver & Scheier, 1990) with 'higher order', more abstract goals at the top, whose attainment becomes dependant (mapping onto the cognitive appraisal, CGS) on the achievement of 'lower order', more concrete goals at the bottom (possibly mapping onto approach- and avoidance- type goals). Increased levels of depression and anxiety have consistently been reported where high CGS is appraised (e.g. Street, 2002; Hadley & Macleod, 2010). Hadley & MacLeod (2010) found that the higher the levels of depression, the more anxiety, the more CGS and the less expectancy (for positive future goals).

Despite their theoretical importance, there is limited empirical research which has measured the cognitive appraisals, perceived difficulty, progress and effort for approach- and avoidance- goals with individuals experiencing depressed and anxious symptoms. Yet, these cognitive appraisals may be crucial in determining goal commitment and attainment, particularly in the face of obstacles.

The present study used a clinical sample at a NHS Primary Care University Student Health Centre as recent literature has suggested a rise in mental health difficulties in young adulthood (Macaskill, 2013). Goal motivation research is also appropriate with this group considering young adults navigate key developmental transitions, commonly focused on the attainment of personally meaningful goals and establishing a coherent personal identity (e.g. Twenge, Campbell & Freeman, 2012).

The purpose of the present study was to investigate shared and distinct approach- and avoidance- personal goal cognitive appraisals, specifically, CGS, expectancy, difficulty, progress and effort in relation to depressive and anxious symptoms. First, the study aimed to examine the relationships between the specified approach- and avoidance goal cognitive appraisals, and depressive and anxious symptoms before receiving psychological intervention. Next, the main of the study

investigated whether shared and distinct approach- and avoidance- goal cognitive appraisals predict depressive and anxious symptoms.

Given the novel combination of constructs being examined and the limited research base, particular trends each goal cognitive appraisal of interest would follow in depressed and anxious individuals were not specified. Therefore, this study was exploratory in nature. In line with theoretical assumptions (e.g. Fowles, 1988; 1994) it was predicted that: (1) Dysregulation of avoidance goal cognitive appraisals (but not approach goal cognitive appraisals) would predict anxious symptoms. (2) Dysregulation of both approach- and avoidance –goal cognitive appraisals would predict depressive symptoms.

## Method

### Participants

Participants ( $n=$ , 34 males, 36 females,  $M_{age}= 24$ , range, 19-50,  $SD= 5.96$ ) were recruited from a National Health Service (NHS) primary care dedicated University Student Health Centre in the North West (UK) region that provides time-limited Cognitive Behavioural Therapy (CBT) and Cognitive Analytic Therapy (CAT) to young adults whose primary interfering condition was depressive and/or anxious symptoms. Data were collected between February 2012 and November 2013. Following a service-led initial screening, subsequent assessment appointment and acceptance for psychological therapy, individuals were informed of the study. After a twenty four hour period for deliberation, participants were sent a questionnaire link, via email from their clinician, to complete measures online if they chose to participate.

**Power calculations.** Prior power analyses indicated that 84 participants were required for the correlational analyses and 92 participants were required for the regression analyses in order to detect medium effects ( $r= .3$ ,  $f^2=.15$ ), with an alpha significance level of .05 and power of .80 (Faul, Erdfelder, Buchner & Lang, 2009). Separate multiple regression analyses included five approach- and five avoidance- goal cognitive appraisals, respectively (i.e. CGS, expectancy, difficulty, progress and effort). The respective dependant variables were depressive symptoms and anxious symptoms.



## Materials

**Goals task (adapted from Dickson & Macleod, 2004).** The adapted goals task assessed approach- and avoidance- goal pursuit in which participants were directed to generate two approach goals and two avoidance goals. To generate approach goals, participants were prompted: “In the future, it will be important for me to...” and to generate avoidance goals, they were prompted: “In the future, it will be important to avoid...”. This goal task has shown good face validity and research has shown evidence of convergent and discriminate validity (Dickson & MacLeod, 2004). To check goals were meaningful, participants rated the importance of their goals on a 7-point scale, ranging from ‘very little importance’ (1) to ‘extremely important’ (7). Importance ratings were high for both approach- ( $M=5.79$ ,  $SD=1.02$ ) and avoidance- type goals ( $M=5.37$ ,  $SD=1.28$ ).

### **Goal cognitive appraisals.**

**Conditional Goal Setting (CGS).** The cognitive appraisal CGS (i.e. derived happiness, fulfilment and self-worth conditionality upon the achievement of one’s personal goals) was assessed using CGS methodology (e.g. Hadley & MacLeod, 2010; Street, 2002). For each self-generated goal, participants circled one of two statements closest to how they thought about their goal for happiness, fulfilment and self-worth (“I can only [be happy][feel fulfilled][have a high sense of self-worth] if I achieve this goal” or “even if I do not achieve this goal I can still [be happy][feel fulfilled][have a high sense of self-worth]”). After circling a goal statement, respondents were asked to rate on a four point scale the extent to which they agreed with the selected statement: ‘very strongly’, ‘strongly’, ‘moderately’ and ‘slightly’. An eight-point scale was then derived from the combination of answers. That is, selecting “I can only [be happy][feel fulfilled][have a high sense of self-worth]” with: ‘very strongly’ is 8; ‘strongly’ is 7; ‘moderately’ is 6; ‘slightly’ is 5. Selecting “Even if I do not achieve this goal I can still [be happy][feel fulfilled][have a high sense of self-worth]” with: ‘very strongly’ is 1; ‘strongly’ is 2; ‘moderately’ is 3; ‘slightly’ is 4. Item scores were summed for each goal to produce an overall CGS score, with possible summed scores ranging from 3-24 per approach- and avoidance- goal condition. Mean scores were then calculated for approach- and avoidance- CGS. The sum-score

for CGS has been found to have good internal reliability (Crane, Barnhofer, Hargus, Amarasinghe & Winder, 2010). In the present study, alpha reliability was .70.

**Goal expectancy, difficulty, progress and effort.** For expectancy, difficulty, progress and effort, each participant rated each of their self-generated approach- and avoidance- goals on a 7-point scale. To assess goal expectancy (likelihood outcomes): for approach goals, the item read “Rate how likely you expect the positive goal outcome to happen”; for avoidance goals, the item read “Rate how likely you expect the negative goal outcome to happen (even though you do not want this ‘bad’ thing to happen)”, items were on a scale ranging from ‘not at all likely’ (1) to ‘extremely likely’ (7). To assess perceived goal difficulty, the scale ranged from ‘not at all difficult’ (1) to ‘extremely difficult’ (7). For perceived goal progress, the scale ranged from ‘no progress’ (1) to ‘extreme progress’ (7). For perceived goal effort, the scale ranged from ‘no effort’ (1) to ‘extreme effort’ (7). Mean scores were calculated for approach- and avoidance- expectancy, difficulty, progress and effort ratings, respectively.

**Patient Health Questionnaire (PHQ-9).** The PHQ-9 (Kroenke, Spitzer & Williams, 2001) is a 9-item self-report measure that assesses depressive symptoms. Each item is rated on a scale from ‘not at all’ to ‘nearly every day’, with possible scores ranging from 0-3. Kroenke et al (2001) suggested a score of  $\geq 10$  is a good distinguisher of individuals experiencing major depressive disorder. Depression severity was scored as follows: 1-4, minimal; 5-9, mild; 10-14, moderate; 15-19, moderately severe and 20-27, severe. The PHQ-9, as a screening measure for major depressive disorder, has been found to have good sensitivity, .93 and specificity, .85, and high reliability (Bass et al., 2009). In the present study alpha reliability was .87 and good construct validity was observed.

**Generalised Anxiety Disorder-7 (GAD-7; Spitzer, Kroenke, Williams & Löwe, 2006).** The GAD-7 is a 7-item self-report measure that assesses generalised anxiety symptoms based on the DSM-IV criteria. Each item is rated on a scale from ‘not at all’ to ‘nearly every day’, with possible scores ranging from 0-3. It has established reliability and validity. A score of  $\geq 10$  is considered indicative of clinical anxiety (Spitzer et al, 2006). Anxiety severity was scored as follows: 0-4,

minimal; 5-9, mild; 10-14, moderate and 15-21, severe. In the present study alpha reliability was .88 and good construct validity was observed.

The study questionnaire can be found in Appendix 3.

### **Procedure**

Participants were asked to participate when attending a University Student Health Centre for a psychological therapy assessment for the treatment of depressive and/or anxious symptoms. After reading the participant information sheet (PIS), informed consent was received electronically (see Appendix 4 for PIS and consent form), before completion of the electronic questionnaire (Appendix 3). Participants completed measures via a web-based study designed by the author. This data collection method was chosen to ensure participants remained anonymous to the author. It has also been shown to minimise social desirability bias (i.e. the under-reporting of behaviours not approved of socially, often common in face-to-face administration; Duffy, Smith, Terhanian, & Bremer, 2005). The questionnaire commenced with a brief demographics measure (gender and age), then participants were requested to enter two approach goals and two avoidance goals. CGS, expectancy, difficulty, progress and effort were then rated for each self-generated goal, followed by the PHQ-9 and GAD-7. Anonymised survey data were then uploaded onto SPSS-21 (IBM Corporation, 2012) for analyses.

### **Ethical approval**

This study was approved by the National Health Service Research Ethics Committee (IRAS) and sponsorship, the NHS service from which participants were recruited and registered with the academic institution from which the study was overseen.

### **Results**

Prior to performing the analyses, all data were screened for correct data entry, missing data and parametric assumptions. There was no missing data and parametric assumptions for correlational and regression analyses were met.

Of the participant sample, 58.6% scored  $\geq 10$  on the GAD-7 ( $M=11.91$ ,  $SD = 5.00$ ) indicating clinical anxiety and 74.3% scored  $\geq 10$  on the PHQ-9 ( $M=13.84$ ,  $SD=5.96$ ), indicating major depressive disorder. Of these participants, 52.9% scored  $\geq 10$  on both the PHQ-9 and GAD-7,

indicating co-morbid anxious and depressive symptoms. Anxious and depressive symptoms were significantly correlated,  $r=.68$ ,  $p<.01$ . A correlational analysis was conducted for all the measured variables. In line with previous research (Crane et al., 2010) and as the CGS constructs were highly inter-correlated; CGS items, happiness, fulfilment and self-worth, were collapsed to form a sum score for approach- and avoidance- goals respectively. Mean values and standard deviations for the study variables, as well as bivariate correlation coefficients are reported in Table 1 below.

Table 1. Means, standard deviations and bivariate correlation coefficients for the study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Anxiety (GAD-7)	11.91	5.01	-	.681**	.055	.105	-.241*	-.212	.197	.202	-.175	.210	.192	.192	.087	.074
2. Depression (PHQ-9)	13.84	5.96		-	.246*	.226	-.252*	-.285*	.236*	.191	-.151	.172	.151	.101	.211	-.116
3. Approach goal CGS	17.87	4.03			-	.496**	-.162	-.101	-.212	-.308**	-.247*	-.087	.020	-.313**	.219	-.157
4. Avoidance goal CGS	16.72	4.47				-	-.057	-.096	.033	-.052	-.208	.040	-.017	-.058	.316**	-.079
5. Approach goal progress	2.98	1.08					-	.478**	-.146	-.027	.350**	-.160	.351**	.185	.086	.183
6. Avoidance goal progress	3.34	1.14						-	-.070	-.207	.192	-.009	.178	.259*	.142	.164
7. Approach goal difficulty	4.97	3.19							-	.240*	-.110	.016	-.039	.219	.194	-.096
8. Avoidance goal difficulty	4.38	1.32								-	.073	.363**	.100	.344**	.128	.127
9. Approach goal expectancy	4.36	0.96									-	.102	.127	.265*	.078	.164
10. Avoidance goal expectancy	4.67	1.09										-	-.066	.240*	.005	-.107
11. Approach goal effort	3.93	1.14											-	.532**	.216	.143
12. Avoidance goal effort	4.01	1.09												-	.059	-.044
13. Gender	1.51	0.503													-	-.110
14. Age	24.16	5.96														-

Note: \* $p<.05$ , \*\* $p<.01$ .

### Correlational analyses

As can be seen in Table 1, depressive and anxious symptoms were both characterised by less perceived approach goal progress. In contrast, depressive symptoms uniquely correlated with heightened approach goal CGS and approach goal difficulty and less avoidance goal progress. No other cognitive goal appraisals significantly correlated with either depressive or anxious symptoms (all  $p > .05$ ). As expected, there was a significant relationship between depressive and anxious symptoms. Unexpectedly, neither approach- nor avoidance- goal expectancy were significantly correlated with depressive or anxious symptoms.<sup>1</sup>

### Regression analyses

Next, four separate multiple regression analyses were used to investigate whether the approach- and avoidance- goal cognitive appraisals (CGS, expectancy, difficulty, progress and effort) each significantly predicted anxious and depressive symptoms respectively. Regression results are reported in Table 2 below. SPSS output is presented in Appendix 5.

Table 2. *Multiple regression analyses predicting goal cognitive appraisals of approach and avoidance goals for depression and anxiety*

Dependant variables	Predictor variables: CGS, progress, difficulty, expectancy and effort (approach goals)					Predictor variables: CGS, progress, difficulty, expectancy and effort (avoidance goals)				
	Standardised Coefficient $\beta$					Standardised Coefficient $\beta$				
	CGS	Expectancy	Difficulty	Progress	Effort	CGS	Expectancy	Difficulty	Progress	Effort
<b>Depression</b>	.255*	.00	.262*	-.260*	.247*	.206	.107	.054	-.290*	.144
<b>Anxiety</b>	.013	-.091	.159	-.294*	.313*	.089	.142	.027	-.253	.219

Note: \* $p < .05$ , \*\* $p < .01$ . \_\_\_\_\_

<sup>1</sup> As can be seen from Table 1, significant inter-correlations were observed between the goal cognitive appraisals. These were not reported in this chapter as the focus of the empirical study was on the shared and distinct features of depressive and anxious symptoms in terms of approach- and avoidance- goal cognitive appraisals. However, an extended discussion of these inter-correlations is presented in Chapter 3.

**Approach goal cognitive appraisals for depression.** The first regression analysis was used to assess the relative contributions of approach goal CGS, expectancy, difficulty, progress and effort in predicting depressive symptoms. Results showed a significant model, which significantly explained 16.7% of variance ( $R^2=.28$ ,  $F(5, 64)=3.76$ ,  $p<.05$ ). As can be seen from Table 2, and as predicted, higher levels of reported approach goal CGS ( $t= 2.15$ ,  $p=.04$ ), approach goal difficulty ( $t=2.27$ ,  $p=.03$ ), and approach goal effort ( $t=2.10$ ,  $p=.04$ ), and less perceived approach goal progress ( $t= -2.06$ ,  $p=.04$ ) significantly predicted depressive symptoms. Counter to expectation, however, approach goal expectancy did not significantly predict depressive symptoms ( $t=0.00$ ,  $p=1.0$ ). Approach goal effort and depressive symptoms were not significantly correlated, though approach goal effort and approach goal progress were highly inter-correlated ( $p<.01$ ). This suggests that approach goal effort is likely a suppressor variable, serving to enhance the predictive validity of approach goal progress by its inclusion in the regression analysis (Conger, 1974).

**Avoidance goal cognitive appraisals for depression.** Next, regression analyses assessed the relative contributions of avoidance goal CGS, expectancy, difficulty, progress and effort in predicting depressive symptoms. Results showed a significant model, which significantly explained 10.7% of variance ( $R^2=.17$ ,  $F(5, 64)=2.66$ ,  $p<.05$ ). As can be seen from Table 2, less reported progress in being able to successfully avoid aversive goal outcomes significantly predicted depressive symptoms ( $t= -2.31$ ,  $p=.02$ ). Counter to prediction, neither, CGS ( $t=1.79$ ,  $p=.08$ ), expectancy ( $t=0.86$ ,  $p=.40$ ), difficulty ( $t=0.40$ ,  $p=.70$ ), or effort ( $t=1.1$ ,  $p=.28$ ) significantly predicted depressive symptoms in the avoidance condition.

**Approach goal cognitive appraisals for anxiety.** Next, regression analyses assessed the relative contributions of approach goal CGS, expectancy, difficulty, progress and effort in predicting anxious symptoms. Results showed a significant model, which significantly explained 11.5% of variance ( $R^2=.18$ ,  $F(5, 64)=2.79$ ,  $p<.05$ ). As can be seen from Table 2 and contrary to prediction, less perceived approach goal progress ( $t= -2.26$ ,  $p=.03$ ) and higher levels of approach goal effort ( $t=2.57$ ,  $p=.01$ ) significantly predicted anxious symptoms. Approach goal effort and anxious symptoms were not significantly correlated, though approach goal effort and approach goal progress were highly

inter-correlated ( $p < .01$ ). This suggests that approach goal effort is likely a suppressor variable, serving to enhance the predictive validity of approach goal progress by its inclusion in the regression analysis (Conger, 1974). Supporting the main predictions, neither, approach goal CGS ( $t = 0.10$ ,  $p = .92$ ), expectancy ( $t = -0.73$ ,  $p = .47$ ), or difficulty ( $t = 1.24$ ,  $p = .19$ ), significantly predicted anxious symptoms.

**Avoidance goal cognitive appraisals for anxiety.** The final regression analysis assessed the relative contribution of approach goal CGS, expectancy, difficulty, progress and effort in predicting anxious symptoms. As can be seen from Table 2 and counter to prediction, neither, avoidance goal CGS ( $t = 0.76$ ,  $p = .45$ ), expectancy ( $t = 1.13$ ,  $p = .27$ ), difficulty ( $t = 0.20$ ,  $p = .85$ ), progress ( $t = -1.98$ ,  $p = .05$ ), or effort ( $t = 1.64$ ,  $p = .11$ ) significantly predicted anxious symptoms.

### Discussion

This exploratory study investigated whether shared and distinct approach- and avoidance- goal cognitive appraisals (CGS, expectancy, difficulty, progress and effort) predict depressive and anxious symptoms in university students at assessment for psychological therapy in a NHS primary care health centre. Preliminary correlation analyses identified shared and distinct goal features characterising depressive and anxious symptoms. Depression and anxiety were both characterised by less perceived approach goal progress. In contrast, depression was uniquely characterised by heightened levels of approach goal CGS and approach goal difficulty, and less perceived avoidance goal progress. There were no other significant correlations with depression and anxiety. Multiple regression results revealed that less perceived goal progress and heightened goal effort predicted both depressive and anxious symptoms in the approach condition. As predicted, higher levels of goal difficulty and CGS uniquely predicted depressive symptoms in the approach condition. Contrary to prediction, reduced approach goal expectancy did not predict depressive symptoms. In the avoidance goal condition, only impaired goal progress predicted depressive symptoms. In contrast to depression and as expected, approach goal CGS, expectancy and difficulty did not predict anxious symptoms. Contrary to prediction, none of the goal cognitive appraisals in the avoidance condition predicted anxious symptoms, although, less perceived goal progress was nearing significance.

In summary, less perceived goal progress and heightened goal effort predicted both depressive and anxious symptoms in the approach condition, and heightened CGS and difficulty in the approach goal condition and less perceived goal progress in the avoidance condition uniquely predicted depressive symptoms.

Correlational findings suggested that depression and anxiety were both characterised by less perceived approach goal progress. This supports previous theoretical and empirical literature that: approach goal progress is associated with an increase in positive affect (e.g. Gray, 1987; 1990; Trew, 2011), and negative affect is associated with low perceived rates of goal progress (Carver & Scheier, 1990; Brunstein, 1993; Affleck et al., 1998). Therefore, as depression is thought to be characterised by sadness and low positive affect (Larson, Nitschke & Davidson, 2007), the association between low perceived rates of progress and heightened depressive symptoms is understandable. In contrast, depression was uniquely characterised by heightened levels of approach goal CGS and approach goal difficulty, and less perceived avoidance goal progress. The significant relationship between heightened CGS and depressive symptoms supports previous findings that depression is heightened with increased CGS (e.g. Street, 1999; 2002; Hadley & MacLeod, 2010). Added to this, the identified significant relationship between heightened difficulty and depressive symptoms would support previous evidence that those with high CGS, report more difficulty and increased depression (Emmons, 1992). The significant relationship between less perceived goal progress in the avoidance condition and depressive symptoms lends support for previous reports that avoidance goals are associated with negative affect (Fowles, 1988; 1994). Moreover, the significant relationships between less perceived approach- and avoidance- goal progress and depressive symptoms, suggest that less perceived approach goal progress indicates a large discrepancy from where the person actually is and their desired goal outcome, leading to reduced positive affect. In contrast, less perceived avoidance goal progress indicates a smaller discrepancy from where the person actually is and their threatening, to-be-avoided goal outcome, leading to negative affect; in keeping with Higgins' (1987,1997) Self-discrepancy and regulatory theories. The latter explanation in respect of avoidance goal progress, is commonly conceived to give rise to anxious symptoms (e.g. Gray, 1987, 1990; Carver, 2006)



however none of the avoidance goal cognitive appraisals were found to be significantly related to anxious symptoms, possibly due to the sample being highly co-morbid, with only a small proportion of participants reporting distinguishable anxious symptoms.

Fowles' (1988, 1994) suggested that depression and anxiety are characterised by high BIS (avoidance) activity; according to the present study's results, this may not apply to avoidance goal cognitive appraisals given that only avoidance goal progress was found to be related to depressive symptoms. Unexpectedly, neither depressive nor anxious symptoms were significantly correlated with perceived goal expectancy in either the approach- or avoidance- condition. This contrasts with previous findings that have reported depressed individuals to rate less expectancy for approach goals and more expectancy for avoidance goals compared to never-depressed controls (Dickson et al., 2011; Dickson & Macleod, 2006). However, given the highly significant inter-correlation between approach goal expectancy and progress, it is possible that although expectancy might not be directly related to depressive or anxious symptoms, expectancy may still play a role in the relationship between perceived goal progress and emotional state. Neither gender nor age significantly correlated with either depression or anxiety. This is likely due to the clinical nature of the sample with their primary interfering conditions being depressive and/or anxious symptoms.

Multiple regression results revealed that less perceived goal progress and heightened goal effort predicted both depression and anxiety in the approach condition. Therefore, it might be that depressive and anxious symptoms increase when approach goal effort increases in combination with low perceived approach goal progress. This is understandable given that if one were exerting effort in the pursuit of a goal but despite this, felt they were not progressing towards their desired outcome, this will likely exacerbate depressive and anxious symptoms. This outcome would also provide support for Carver and Scheier's control theory (1990) in that where one is perceiving progress as low, leading to increased depressive and anxious symptoms, one exerts more effort with the intention of decreasing the perceived discrepancy between the goal and emotional state.

As predicted, regression results also revealed that higher levels of approach goal difficulty and CGS uniquely predicted depressive symptoms. Therefore approach goal cognitions appear to be

dysregulated in depression. For example, more perceived goal difficulty and less perceived goal progress, despite increased goal effort is likely to maintain and exacerbate depression. Increased approach goal effort and CGS significantly predicting depressive symptoms may support recent findings that depression is characterised by an overactive BAS as a method of avoiding aversive consequences (Vergara and Roberts, 2011). It might be that depressed individuals are putting more effort into their approach goals in order to avoid feared outcomes, such as not feeling happy, not feeling fulfilled or not having a sense of self-worth (aspects they are likely putting on hold during goal pursuit – high CGS). Regression results suggest that the more difficult a depressed individual finds the pursuit of an approach goal, the more effort they exert during pursuit, possibly due to the perceived achievement of their goal being conditional upon their feelings of happiness, fulfilment and self-worth (high CGS) and less perceived goal progress. This combination of factors may provide an explanation for why depression may persist, even where individuals generate approach type goals. This supports recent findings that motivational deficits in depression may be due to dysregulation in cognitions that support goal-directed behaviour (Dickson & Moberly, 2013a). In the avoidance goal condition, only impaired goal progress predicted depressive symptoms, i.e. less reported progress in being able to successfully avoid aversive goal outcomes significantly predicted depressive symptoms, supporting previous findings that avoidance goals are associated with negative affect (Fowles, 1988; 1994). Less perceived approach- and avoidance- goal progress predicting depression also lends support for Wollburg and Braukhaus (2010) who reported depression to reduce as the attainment rate (progress) for both approach- and avoidance- goals increased.

In contrast to depression and as predicted, approach goal CGS, expectancy and difficulty did not predict anxious symptoms. However, counter to hypothesis and as discussed earlier, less perceived goal progress and heightened goal effort predicted anxious symptoms in the approach condition. Contrary to prediction, none of the cognitive goal appraisals in the avoidance condition predicted anxious symptoms, although, less perceived goal progress was nearing significance. The non-significant findings for anxiety might be due to only a very small proportion of the participants reporting clinical levels of anxiety without co-morbid clinical levels of depressive symptoms.

Therefore, avoidance goal cognitive appraisals may be dysregulated in anxiety, however further research involving participants with clinical levels of anxiety, not comorbid with clinical levels of depression is required to qualify this. Alternatively, anxiety may still be characterised by a bias towards avoidance goal generation (e.g. Dickson, 2006) but not by a dysregulation in avoidance goal cognitive appraisals. Previous literature has reported CGS to increase with heightened anxious symptoms (e.g. Schofield, Dickson & Mummery, 2002; Hadley & Macleod, 2010), however no significant relationship was found in the present study. It might be that high CGS for approach goal motivation is a characteristic unique to depression. This would support Street (1999) who reported a significant relationship between CGS and rumination (a distinct characteristic of depression, e.g. Nolen-Hoeksema & Davis, 1999). Further research is required to consider in detail whether heightened approach goal CGS is a defining feature of depression.

### **Clinical implications**

When considering goal motivation and its impact upon mood, the findings suggest both the type of goals we form and their related cognitive appraisals are significant, as appraisals may be different for approach (positive outcome) goals than for avoidance (negative outcome) goals. Results suggest that just having approach type goals will not necessarily lead to positive affect; rather it is the cognitive appraisals we make of these goals which predict emotional state. The implication of this clinically, when considering clients' goals, is that a staged approach may be appropriate. For example: Stage 1 would comprise detailing the goals (goal generation); Stage 2 would involve collaboratively re-framing avoidance type goals into approach goal terms, and Stage 3 would entail discussing the client's cognitive appraisals of their goals and utilising information from the present findings regarding what predicts depression and anxiety. Thereafter, discussing goal cognitive appraisals in each therapeutic session might then be helpful to assess change over time and further understand why an individuals' low mood may be persisting. Assessing goal cognitive appraisals at each therapeutic session is considered as a future research investigation in Chapter 3.

Cognitive Behavioural Therapy (CBT) would be well suited to the aforementioned staged approach considering goal generation and assessment is a key therapeutic task of this model (e.g.

Beck, 1976). Also, considering the shift in emphasis to values before generating concrete goals in third wave CBT approaches such as Acceptance and Commitment Therapy (ACT; Hayes, Strosahl & Wilson, 2012), cognitive appraisals such as CGS may be useful indicators of the client's values, in addition to enhancing the clinical formulation. The mean age of the study sample was 24 years, representing a young adult sample. This sample was utilised as mental health increases exponentially (Kessler, 2002) and suicide is at its highest in young adulthood (Blum, 2009). Additionally, prevalence rates of mental health difficulties in this group have been reported as comparable to the general population (Macaskill, 2013). Therefore enhancing support for this age group would be beneficial.

### **Limitations and considerations for future research**

The present empirical findings expand the knowledge base in approach- and avoidance- goal motivation in emotional disorders, though there are some study limitations that should be considered when making inferences from the findings.

Firstly, this study considers one area of research in relation to depression, in which depression is explained exclusively with respect to intra-psycho and cognitive processes. This, however, should not discount the wider emotional, familial, relational, trauma related, cultural and psycho-social factors commonly associated with depressive symptoms (National Institute for Health and Care Excellence, NICE, 2010). It is anticipated the findings in this paper will contribute to the wealth of research regarding factors that predict depression. Participants' ethnicity was not entered as a variable in the main analyses as not all participants provided this information ( $n=55$ ). Of these participants, however, 91% described themselves as white Caucasian. Also given the sample were University students, the participants may not be representative of the general population in terms of age, ethnicity and socioeconomic status. Future research should endeavour to include a more diverse population sample to investigate if outcomes are similar in other cultures and societal sectors. It should also be noted that the pursuit of personal goals and personal goal attainment might be viewed as a westernised ideology due to its individualistic focus. The empirical emphasis on personal goals may thereby not be relevant in all cultures when considering what predicts emotional state.

The exploratory design of this study may limit the ability to make definitive conclusions about the findings. The data collection method (web-based study) is associated with non-random sampling procedures that can prevent valid inferences to the general population (e.g. Bethlehem, 2009). Although the study comprised a clinical sample, this was an opportunistic sample. Though participants were recruited from a clinical setting at which they had been assessed and accepted for psychological therapy by a Consultant Clinical Psychologist, reported depressive and anxious symptoms in the data were self-report and not clinical diagnoses.

The sample size in the study was slightly underpowered, as the study required 92 participants for the regression analyses. Factors such as participants being deemed too distressed to participate, participant drop out and technical issues, resulted in loss of data. It is possible that a slightly larger sample size would detect other significant effects; effect sizes were interpreted as small to medium for the regression analyses. Less than 6% of the sample scored above the cut-off for clinical anxiety, without scoring above the cut-off for clinical depression. Therefore, when considering what is predictive of anxiety from the findings, the sample may not have been a true representation of anxious individuals.

Participants were asked to generate personal goals opposed to therapy goals as they may have struggled to formulate therapy goals without having commenced therapy and the model of therapy may not have involved specific goal generation. The number of self-generated goals (four) was selected in line with previous literature (e.g. Brunstein, 1993). However, previous studies have typically calculated goal appraisals, such as expectancy, on a greater number of goals (e.g. Dickson & Moberly, 2013b) which may account for the non-significant finding in this goal cognitive appraisal.

Generalisation of results to a broader population was also limited by the absence of a control group. This addition may have increased methodological rigour by confirming whether the goal cognitive appraisals that predicted depression and anxiety were unique to those reporting depressive and anxious symptoms in the symptomatic clinical range; a possible consideration for future research. Moreover, the cross-sectional design did not allow for cause and effect relationships to be studied. A longitudinal design would provide information about how goal cognitive appraisals alter over time in

response to varying mood. This extension for future research is developed further in the final section of Chapter 3.

### **Conclusion**

As expected results did identify shared and distinct goal cognitive appraisals in predicting depressive and anxious symptoms in a young adult clinical sample. Less perceived goal progress and heightened goal effort predicted both depressive and anxious symptoms in the approach condition, and heightened CGS and difficulty in the approach goal condition and less perceived goal progress in the avoidance condition uniquely predicted depressive symptoms. Depression might therefore be characterised by an increased vulnerability in the approach goal system, in which pursuing desirable outcomes may be more problematic than attempting to stay away from an undesirable outcome (i.e. avoidance goals). Such shared and distinct cognitive appraisals of personal goals in predicting depressive and anxious symptoms is a key consideration for future clinical practice in addition to enhancing our understanding of co-morbid symptomatology.

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### **Chapter 3: Empirical study extensions**

### **Abstract**

This final chapter comprises three parts. Firstly, an extended discussion is presented which considers further the results of the empirical study in Chapter 2, the clinical implications and limitations. Secondly, are dissemination materials that comprise a brief article for a student periodical and a notice for distribution at the service from which data were collected, as a means of feeding back to the participants. Thirdly, a research proposal is presented describing a possible design for a subsequent study to follow-up the empirical study in Chapter 2. The thesis is concluded with a brief account of the author's reflections of her experience of carrying out research in the area of approach- and avoidance- goal motivation.

### **Concluding discussion**

A systematic review was firstly conducted exploring how approach- and avoidance goal cognitive appraisals are implicated in adult depression and anxiety (reported in Chapter 1). The empirical study, reported in Chapter 2 then sought to investigate whether approach- and avoidance- goal cognitive appraisals predict depressive and anxious symptoms in university students before they attended psychological therapy. The aim of this exploratory study was to examine the shared and distinct goal cognitions of depression and anxiety. Results showed that less perceived goal progress and heightened goal effort predicted both depressive and anxious symptoms in the approach condition, and heightened CGS and difficulty in the approach goal condition and less perceived goal progress in the avoidance condition uniquely predicted depressive symptoms.

As the aim of the empirical study was to consider what is shared and distinct in depression and anxiety in terms of goal cognitive appraisals; the relationships between the goal cognitive appraisals were not reported in Chapter 2. However several significant inter-correlations were identified between the goal cognitive appraisals. These are discussed below.

**Relationships between goal cognitive appraisals.** Correlational analyses indicated that as approach goal effort increases, approach goal progress increases, supporting previous literature that has reported a relationship between goal progress and goal effort (Schmidt & Dolis, 2009). When approach goal expectancy increased, progress was found to also increase, whilst approach goal CGS decreased. This would support Tubbs, Boehne and Dahls' (1993) suggestion that goal progress is a related determinant of expectancy. Additionally, as approach goal progress and expectancy (Carver & Scheier, 1998) are related to positive affect, where an individual is rating increased progress and expectancy for approach goals, then it would follow that CGS would decrease as high CGS has been consistently associated with negative affect (Street, 1999).

As avoidance goal effort increases, so too does avoidance goal progress, avoidance goal difficulty, avoidance goal expectancy, approach goal effort and approach goal expectancy. These relationships would support Corr (2001, 2002) who suggested an interaction between BIS (related to avoidance) and BAS (related to approach) systems, i.e. the systems are interrelated, however would

contrast with Gray's (1987,1990) assumption that these systems are independent. Additionally, the reported association between increased effort and increased expectancy would support theory which states that effort is sustained when expectancy is sufficiently positive (Carver & Scheier, 1998). Goal expectancy has also been found to moderate the relationship between goal progress and effort (Schmidt & Dolis, 2009) which would support the significant correlations found in the present study between these particular goal cognitive appraisals. The significant positive correlations found between avoidance goal effort, avoidance goal progress, avoidance goal difficulty and avoidance goal expectancy imply that a bias in attention (or hyper-vigilance) upon avoidance type goals leads to an increase in goal cognitive appraisals for this goal type. Attentional biases for negative, self-relevant information is common in depression and anxiety (e.g. Beck, 1976; Clark, Beck & Alford, 1999; Mathews & MacLeod, 2005) as well as judging future negative events and outcomes as more likely to occur than positive outcomes (e.g. Butler & Mathews, 1983; Macleod & Cropley, 1995; Macleod, Tata, Kentish & Jacobsen, 1997). Given the participants in the empirical study were depressed and anxious, it is therefore understandable that a dysregulation in avoidance goal motivation between the goal cognitive appraisals was observed, specifically significant positive correlations.

Avoidance goal progress was found to positively correlate with approach goal progress. This suggests that if an individual is progressing in their avoidance goal, i.e. they are succeeding in staying away from or preventing their undesired outcome, it may be the case that their success is because they are moving towards their desired positive outcome (positive progress in their approach type goal). A significant positive correlation was also found between avoidance goal difficulty and approach goal difficulty. Difficulty might thereby be a cognitive appraisal that is global across all goals (non-distinctive) and is likely to be increased in those reporting depressive and anxious symptoms due to negatively attributed cognitive biases (e.g. Beck, 1976). Avoidance goal difficulty was also found to be positively correlated with avoidance goal expectancy. This supports the notion that difficulty is a related determinant of expectancy (Tubbs et al, 1993) but contradicts Coats, Janoff-Bulman and Alpert (1996) who reported avoidance goals were rated as having been more difficult to achieve in the past and less likely to be achieved in the future. Moreover, early research suggests that as goal

difficulty increases, expectancies decrease (e.g. Garland, 1982; Matsui, Okada & Mizuguchi, 1981) and more recently Schmidt and Dolis (2009) suggested goal difficulty impacts negatively upon goal expectancy. Such opposing results in comparison to previous literature highlight the need to distinguish goal cognitive appraisals between types of goal (i.e. approach and avoidance). In avoidance goals, the finding that as difficulty increases, goal expectancy increases is conceivable, in that the more difficulty the individual experiences in attempting to move away from their undesired outcome (avoid), the more likely they expect the negative outcome to occur.

As avoidance goal effort increases, approach goal CGS decreases. When previous cognitive literature around attentional biases in individuals with emotional disorders is revisited, one might postulate that when a person has an attentional bias towards avoidance type goals or negative outcomes (e.g. Beck, 1976; Clark, Beck & Alford, 1999; Mathews & MacLeod, 2005), they are possibly attending less to their approach type goals. Consequently, with increased avoidance goal effort and less cognitive attention on approach type goals, the individual is less likely to be making aspects of their wellbeing conditional upon the achievement of their approach goals (i.e. low CGS). Alternatively, if the reverse is considered: approach goal CGS increases, avoidance goal effort decreases. This might suggest that the more the individual focuses their attention upon their approach type goals in response to the high CGS, the less effort (and likely attention) they will exert in pursuing their avoidance type goals.

Finally, as avoidance goal CGS increases, so too does approach goal CGS. This would suggest that CGS ratings are global for all goal types, i.e. CGS does not tend to differ between approach- and avoidance- type goals. Therefore, it is unlikely that an individual will have high CGS in one personal goal but not another.

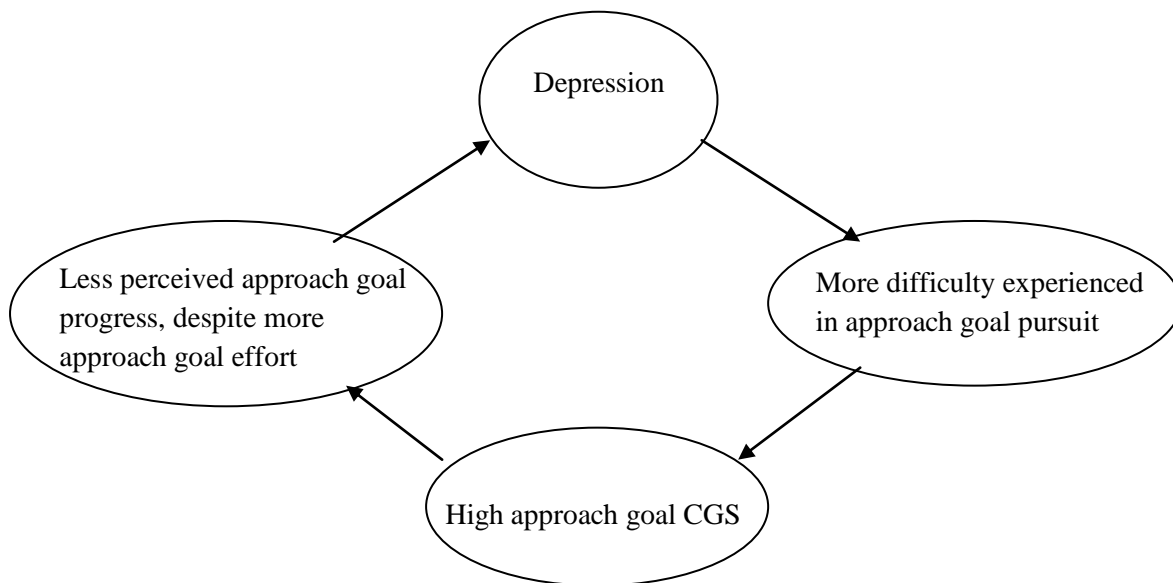
### **Clinical implications**

The co-morbid sample highlights the commonality of depression and anxiety occurring together. It would therefore be appropriate clinically to assess for both depressive and anxious symptoms as standard in all clients experiencing distress. Administering a measure of depression in the absence of an anxiety measure when considering an appropriate treatment method, may overlook a



clinically important part of the service user population who are experiencing significant levels of anxiety and would benefit from intervention for these symptoms as well as depression.

The empirical findings (Chapter 2) indicated that depressed individuals may have a particular vulnerability in the approach goal system in which pursuing desirable outcomes is more problematic than attempting to avoid undesirable outcomes. Regression results suggested that the more difficult a depressed individual perceives the pursuit of their approach goal, the more their happiness, fulfilment and self-worth is conditional upon the achievement of their goal, the less progress they perceive, despite them exerting more effort. This combination of factors may provide an explanation for why depression may persist, even where individuals generate approach type goals. Figure 1 displays a simple diagrammatic cyclical formulation.



*Figure 1* Diagrammatic formulation of approach goal cognitive appraisals persisting depressive symptoms

When considering goal motivation and its impact upon mood, the findings suggest both the type of goals we form and the goal cognitive appraisals we construe are significant, as appraisals may be different for approach (positive outcome) goals than for avoidance (negative outcome) goals. Results suggest that just having approach type goals will not necessarily lead to positive affect; rather it is the appraisals we make of these goals which predict emotional state. The implication of this clinically is, when considering client's goals, a staged approach may be appropriate. For example: Stage 1 would comprise detailing the goals (goal generation); Stage 2 would involve collaboratively

re-framing avoidance type goals into approach goal terms and Stage 3 would entail discussing the client's cognitive appraisals of their goals and utilising what we have learnt from the empirical findings in terms of what predicts depression and anxiety. Subsequently, discussing goal cognitive appraisals in each therapeutic session might then be helpful to assess change over time and further understand why an individual's low mood may be persisting. For example, a client may describe difficulty in pursuing their approach type goal and a lack of progress in attaining this goal, despite increased effort, over several sessions. The present study's findings suggest that these goal cognitive appraisals (i.e. difficulty, progress and effort) predict depressive symptoms. Therefore, changes in these appraisals might be helpful indicators to the clinician in explaining changes in mood. Cognitive Behavioural Therapy (CBT) would be well suited to this staged approach considering goal generation and assessment is a key therapeutic task of this model (e.g. Beck, 1976; Ellis, 1962). Assessing goal cognitive appraisals in each therapeutic session is considered in terms of a future research investigation later in this chapter.

Participants were recruited from an NHS primary care mental health service from a higher education institution. The participant sample recruited in the empirical study comprised a mean age of 24 years, representing a young adult sample. A clinical student sample was utilised for several reasons. Recent literature has suggested a rise in mental health difficulties in young adulthood, reporting prevalence rates in this group as comparable to the general population (Macaskill, 2013). Mental health difficulties have been found to increase exponentially in young adulthood (Kessler, 2002). Finally, suicide is highest amongst young adults and has increasingly appeared in international statistics as a rising trend of concern over the past 50 years (Blum, 2009; Patton et al, 2009). The results may therefore be helpful in updating our understanding of what predicts emotional state in a clinical student sample and consequently help clinicians to enhance psychological support for this population in the future. Future research may want to consider comparing approach- and avoidance-goal cognitive appraisals by age to determine if the outcome of the present study is relevant to the broader adult population or specific to young adults.

Although cognitive therapies have allowed us to understand that unhealthy cognitions exist and affect mood negatively, CGS may offer an explanation for why these destructive cognitions arise and how they impact upon the therapeutic task, procedure and process in interventions such as CBT. The inclusion of CGS when appraising approach- and avoidance goals in clinical practice may further enhance the clients' and therapists' understanding of goal cognitions. Educating service users on how their mood can be affected negatively if they put aspects of their wellbeing on hold until the achievement of their goals (a consequence of high CGS) may aid personal development and facilitate symptomatic improvement. Heightened CGS may also suggest inflexibility in one's goal cognitions, which would be consistent with the cognitive literature that infers inflexible thinking as a characteristic of emotional disorders, such as depression and anxiety (Beck, 1967). Assessing the level of CGS with a client might therefore tell the clinician a little more about the service users thinking style and additionally how their depressive and anxious symptoms persist. CGS might also lend itself appropriately to third wave cognitive behavioural therapeutic approaches, such as Acceptance and Commitment Therapy (ACT, Hayes, Strosahl & Wilson, 1999, 2012). For instance, CGS is when a goal's outcome is cognitively appraised as being dependant on the individual's aspects of wellbeing, which might map onto what is contextualised as 'values' in ACT. The therapist in ACT firstly has the client name their values and generate more concrete goals thereafter once the client's chosen values have been clarified. CGS may be an appropriate indicator of the client's chosen values with a dialogue around wellbeing conditionality on the achievement of one's goals possibly enhancing this therapeutic approach.

### **Limitations and critique**

The empirical findings expand the knowledge base in approach- and avoidance goal motivation in emotional disorders, though there are some limitations that should be considered when making inferences from the results.

Ethnicity data were collected. This was not entered as a variable in the main analyses as not all participants provided this information ( $n=55$ ) and the sample was not diverse nor large enough to warrant the inclusion of ethnicity as a test variable. Participants described themselves as: White

British ( $n=40$ ), White Irish ( $n=3$ ), White Other ( $n=7$ ), Black African ( $n=2$ ), Chinese ( $n=2$ ) and Black Caribbean ( $n=1$ ). Therefore, the participant sample was pre-dominantly White Caucasian. Moreover, the participant sample was university students, thereby outcomes may have differed in individuals with lower levels of education and possibly differing socio-economic backgrounds. Future research should endeavour to broaden investigations to include a more diverse population sample to examine if the results are similar in other cultures and societal sectors.

It should also be noted that the pursuit of personal goals and personal goal attainment might be viewed as a westernised ideology due to its individualistic focus. Non-westernised cultures tend to be less individualistic and more collectivist than Westernised societies, with group needs often superseding individual needs (Das & Kemp, 1997; Oyserman, Coon & Kemmelmeier, 2002). This emphasis on personal goals may thereby not be relevant in all cultures when considering what predicts negative affect.

Data were collected via a web-based survey instead of in face-to-face interviews or via paper questionnaires. A web-based survey was chosen as the mode of data collection for several reasons. Individual in the 16-24 age group category have been reported as the highest users of the internet and related tools in the UK (Office of National Statistics, 2013); therefore, it was sensible to collect data in this format. Moreover, according to previous literature, this mode of data collection derives more uninhibited responses compared to face-to-face data collection, as participants are more likely to divulge personal information and experiences (Babbie, 1998; Joinson, 1999, 2001). A web-based survey was therefore deemed more appropriate than other modes due to the sensitive information that was collected. Research has also suggested that participants feel more secure and anonymous in online research than in the usual modes of data collection (Coomber, 1997; Davis, 1999). Web-based surveys have also been reported as more cost effective, with faster response times and attain higher quality data due to integrated functions that reduce missing data and coding errors (Oppermann, 1995; Dillman, 2000; Rhodes, Bowie & Hergenrather, 2003; Wright, 2005; Roberts, 2007). The self-report nature of online research also minimises social desirability bias, i.e. the under-reporting of behaviours not approved of socially, which is more common in researcher administered methods (Duffy, Smith,

Terhanian, & Bremer, 2005; Groves et al., 2009). However, web-based surveys have been found to have a lower response rates compared to other survey modes (Manfreda, Bosnjak, Berzelak, Haas & Vehovar, 2008) and have been associated with non-random sampling procedures that can prevent valid inferences to the general population (Groves, 2004; Bethlehem, 2009).

Participants were recruited from a clinical setting at which they had been assessed for psychological therapy by a Consultant Clinical Psychologist. Subjects were asked to take part in the study only if they were accepted for therapy. At this assessment a formulation of their presenting difficulties is undertaken with the remit of the service being to work with those students experiencing significant difficulties with mood and functioning. Therefore, the service from which subjects were recruited does not provide diagnoses but rather explores the impact, meaning of an individual's presenting symptoms and their concerns. Levels of depressive and anxious symptoms were self-report as opposed to formal clinical diagnoses. However, given that data collection took place in a clinical setting, service users who participated in the study after having received a formal psychological assessment and having been accepted for psychological treatment, reported depression and anxiety are anticipated to be clinically relevant.

The Patient Health Questionnaire (PHQ-9; Kroenke, Spitzer & Williams, 2001) was used to measure depression severity. This has been found to be a reliable and valid, brief, self-report measure of depressive symptoms (Kroenke et al., 2001). However, several limitations have been reported of the PHQ-9. Symptoms related to complex presentations of depression are not covered, and comorbid or mixed states are not accounted for (Nease & Malouin, 2003). This latter limitation is especially relevant given that over half of the participant sample in the present study reported co-morbid symptoms of depression and anxiety. The Generalised Anxiety Disorder scale (GAD-7; Spitzer, Kroenke, Williams & Löwe, 2006) was used to measure anxiety severity. Again, this has been reported as a reliable and valid brief, self-report measure of anxious symptoms. However, this measure does not account for other anxiety disorders, apart from generalised anxiety disorder (Spitzer et al., 2006). Information about current medication was not collected, however where individuals

may have been receiving psychotropic treatment for emotional disturbance, this might have affected the results (e.g. Blanchard & Neale, 1992).

The sample size in the study was slightly underpowered. A participant sample of 92 was required for the regression analyses with five predictors; the final participant total was 70. A key factor that influenced the smaller than originally anticipated sample size was a loss of data. Approximately 120 subjects (reported by the Consultant Clinical Psychologist at the service) were asked to take part in the study; indicating that 50 individuals did not complete the survey. Loss of data possibly occurred for one of three reasons. Firstly, during data collection, the accessibility of the online survey was, at times, compromised due to a technical error in the software. This meant that potential participants were unable to access the survey until this was resolved. Secondly, the Consultant Clinical Psychologist reported that service users were often very distressed and low in mood at assessment, and that some service users expressed fear and worry in taking part in the study. A clinical judgment was therefore made on a case by case basis whether to ask service users to participate in the study. At times an invitation from the clinician to the service user to participate in the study was deemed potentially harmful and detrimental to the engagement and alliance building therapeutic process. Thirdly, some participants who started the survey dropped out during its completion ( $n=14$ ). The sample size should be considered when generalising results to a broader adult population.

The sample size ( $n=70$ ) also meant that conditional goal setting components (happiness, fulfilment and self-worth) had to be combined to form a total CGS score. However, previous literature has reported good internal reliability for total CGS score (Crane, Barnhofer, Hargus, Amarasinghe & Winder, 2010) and the individual CGS item scores were found to be significantly inter-correlated. Nevertheless, a larger sample size would have allowed for the investigation of each approach- and avoidance- CGS component in relation to depressive and anxious symptoms. Future research could consider this extension.

Participants were asked to generate personal goals opposed to therapy goals as subjects may have struggled to formulate therapy goals without having commenced therapy and the model of

therapy may not have involved specific goal generation. Therefore it was deemed more appropriate to ask participants to generate personal goals, which as human beings we all hold, due to their centrality to human motivation (e.g. Klinger, 1975). Participants were asked to generate two approach goals and two avoidance goals. This number of goals was selected in line with previous literature (e.g. Brunstein, 1993; Cantor et al., 1991; Emmons, 1986; Little, 1983).

Finally, the cross-sectional design of the empirical study did not allow for cause and effect relationships to be studied. A longitudinal design would have provided information with regards to how goal cognitive appraisals alter over time in response to changing mood. This extension for future research is developed further in the final section of this chapter.

### **Concluding statement**

Where less approach goal progress and more approach goal effort were found to predict both depressive and anxious symptoms, depression was uniquely predicted by increased approach goal difficulty and CGS, and less avoidance goal progress. This suggests a possible increased sensitivity in the approach goal system in depressed individuals. These findings could be utilised in clinical practice when formulating clients' presenting difficulties and during psychological therapy. The study's results may consequently enhance psychological treatment as well as expand the literature base in goal motivational research.

### **Dissemination material**

#### **Lay person summary: A brief article for a student periodical**

##### **You might have positive goals, but the way you think about them may be making you unhappy**

A recent study conducted at the Student Health Centre has found that the way we think about our goals can impact upon how we are feeling. Goal literature suggests we make two types of goals: approach goals (e.g. “to pass my exams”) and avoidance goals (e.g. “to avoid failing my exams”). An approach goal is when you are trying to move towards something you want (a positive outcome) and this has been linked with positive mood. An avoidance goal is when you are trying to get away from or prevent something you don’t want (a negative outcome) and this has been linked with negative mood.

However, previous goal research has found that although people with depression are able to generate personally meaningful and important approach type goals, they may still remain depressed. The recent research findings suggest that this might be because of the way we think about our goals from different perspectives (known as cognitive appraisals).

70 students attending the Student Health Centre for psychological therapy filled in a web-based questionnaire. The questionnaire asked participants to generate two approach goals and two avoidance goals. Each goal was then rated on:

- Difficulty: how much difficulty has been experienced in pursuing the goal
- Effort: how much effort has been exerted in pursuing the goal
- Progress: how much progress is perceived in achieving the goal
- Expectancy: how likely one perceives the outcome of the goal to happen
- Conditional Goal Setting (CGS): the extent to which one makes their happiness, sense of fulfilment and self-worth dependant on the achievement of the goal.

Participants then completed questionnaires that assessed their level of depressive and anxious symptoms.



Results showed that:

- 1) Less approach goal progress and more approach goal effort predicts both depression and anxiety.
- 2) Whereas, heightened approach goal CGS and approach goal difficulty, and less avoidance goal progress uniquely predicted depression.
- 3) None of the avoidance goal cognitive appraisals were found to predict anxious mood.

With the prevalence of mental health difficulties rising in the student population, these findings might help in developing therapeutic methods of supporting those with low mood. So next time you contemplate your personal goals, also consider what you think about them. A change in your goal cognitive appraisals might just help you to feel more positive.

## Dissemination material

### Notice: Feedback to participants

# Research Study: The pursuit of personal goals in depressed and anxious individuals



## Background

Research has long considered the nature and predictors of depression and anxiety (e.g. Beck & Clark, 1988). Fewer researchers have investigated the role of goal motivation for this purpose in adults, despite depression and anxiety being highly co-morbid (Kaufman & Charney, 2000). Goal research suggests we make two different types of goals: approach and avoidance. An approach goal is where we attempt to move towards something we want. An avoidance goal is where we try to keep away from or prevent something we don't want. The types of goals we make and how we appraise these goals in our minds are suggested to affect how we feel emotionally. The aim of this study was to investigate whether goal cognitive appraisals, specifically, Conditional Goal Setting (CGS; i.e. making one's happiness, feeling of fulfilment and self-worth conditional upon the achievement of one's personal goals), expectancy, difficulty, progress and effort, predict depression and anxiety.

## Methods

**Participants:** 70 (34 males, 36 females) participants were recruited from the Student Health Centre after attending an assessment for psychological therapy and prior to commencing treatment

**Data collection:**

- Via a web-based questionnaire
- Participants self-generated two approach type goals and two avoidance type goals
- Each goal was rated on scales measuring CGS, expectancy, difficulty, progress and effort.
- The PHQ9 and GAD7 measured levels of depressed and anxious symptoms

## Results

- Less approach goal progress and more approach goal effort predicted both depression and anxiety
- Heightened approach goal CGS, increased approach goal difficulty and less avoidance goal progress uniquely predicted depression.
- None of the avoidance goal cognitive appraisals were found to predict anxious mood.

## Summary & Conclusions

Generating approach goals can lead to positive feelings, but it is also important to consider how we appraise these goals, as findings suggest that our goal cognitive appraisals might keep us feeling low. Results suggest depressed individuals might have an increased vulnerability in thinking about approach goals, in which pursuing desirable outcomes may be more problematic than attempting to avoid undesirable outcomes (i.e. avoidance goals). Figure 1 illustrates this as a vicious cycle. This might be helpful to consider when supporting clients' with depression. Results also reported goal cognitions common and different of depression and anxiety which might further our understanding around comorbidity in these conditions.

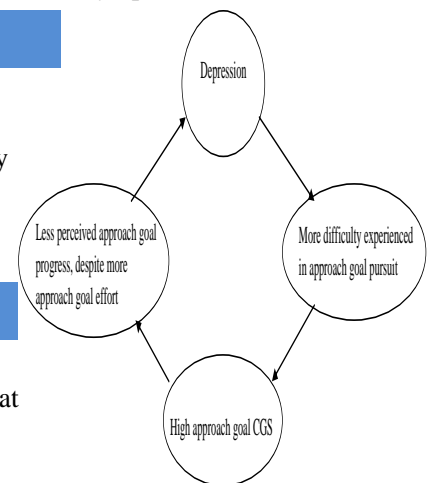


Figure 1: Diagrammatic formulation of main finding

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### **Future research proposal**

#### **How approach- and avoidance- goal cognitive appraisals in depression and anxiety change over the course of psychological therapy**

##### **Aims**

This study firstly aims to assess the goal cognitive appraisals at the end of therapy (Time 2) with emotional state, relative to ratings at the commencement of therapy (Time 1). Subsequently, if the results are significant, suggesting clinical relevance, the data will further be explored to assess whether goal cognitive appraisals are predictive of depressed and anxious symptoms over the course of therapy in an adult clinical sample.

##### **General background**

Recent empirical research has suggested the predictive nature of personal goal cognitive appraisals (specifically, Conditional Goal Setting: CGS, the extent to which one makes their happiness, feeling of fulfilment and sense of self-worth conditional upon the achievement of their personal goals; expectancy; difficulty; progress and effort) for depression and anxiety in an adult clinical sample (see Chapter 2: Empirical paper). Specifically, less perceived progress and more effort predicted both depression and anxiety for approach type goals. Whereas, heightened approach goal difficulty and approach goal CGS, and less avoidance goal progress uniquely predicted depression. Previous research has suggested the importance of approach- and avoidance motivational aspects in understanding anxiety and depression (Dickson & MacLeod, 2004), with goal dysregulation further being implicated in affective disorders (Fulford, Johnson, Llabre & Carver, 2010). Research, to date, has not considered goal cognitive appraisals as predictive of depressive and anxious symptoms over the course of therapy. This study would be a valuable extension to the recent cross-sectional findings (see Chapter 2: Empirical paper) reported previously and is anticipated to contribute to limited research in the area of approach- and avoidance- goal motivational aspects and emotional symptoms in an adult clinical sample, in addition to the clinical relevance of goal consideration in respect of therapy outcome.

### **Brief account of relevant literature**

Sheldon, Kasser, Smith & Share (2002) argued that the specific process of endeavouring to achieve personal goals is a crucial aspect in facilitating psychological growth (a key aim of psychological therapy). However, more recently, research has indicated that distinct approach- and avoidance goal profiles characterise emotional disturbance (e.g. Dickson & MacLeod, 2006; Dickson 2006; Dickson, Moberly & Kinderman, 2011; Eccles, Dickson & Reilly, under appraisal).

Approach goal pursuit involves one attempting to move towards a desired, positive outcome. In contrast, avoidance goal pursuit involves one attempting to move away from or avoid an undesirable negative outcome (Elliot & Thrash, 2002; Emmons, 1991). The impact of these types of goal formation have upon our emotional state is strongly supported in both the theoretical and empirical literature (e.g. Fowles, 1988, 1994; Corr, 2001, 2002). Early literature has suggested increased avoidance goal pursuit as typical in anxiety and that both a deficit in approach- and an increase in avoidance- goal pursuit characterises the classic depressive clinical presentation (Fowles, 1988, 1994). However, a recent growth in empirical literature studying the number of generated approach- and avoidance- goals in depressed and anxious individuals has revealed mixed findings. Some have reported depressed individuals to generate just as many approach goals as never-depressed (e.g. Dickson et al, 2011); others have reported depressed individuals to generate fewer approach goals and more avoidance goals compared to controls (Dickson, 2006).

In an attempt to consider the empirical inconsistencies in this area, a recent study alternatively focused on the cognitive appraisals (CGS, expectancy, difficulty, progress and effort) we construe of our approach- and avoidance- goals (see Chapter 2: Empirical paper). Supporting theory, depression appeared to be characterised by vulnerability in the approach goal system, where pursuing desirable outcomes may be more problematic than attempting to stay away from or prevent an undesirable outcome (only less avoidance goal progress was found to predict depression). Contrary to theoretical assumptions which suggest anxiety is characterised by high BIS activity, avoidance goal cognitive appraisals were found not to predict anxiety. Less approach goal progress and more approach goal

effort were found to predict both depression and anxiety. The present study aims to extend these findings by investigating whether approach- and avoidance- goal cognitive appraisals (CGS, expectancy, difficulty, progress and effort) predict depressive and anxious symptoms over the course of psychological therapy, i.e. do approach- and avoidance- goal cognitive appraisals predict depression and anxiety when depressive and anxious symptoms fluctuate? Understanding these aspects of approach- and avoidance- goal processes may aid in the ongoing development of effective psychological therapies.

### **Hypotheses**

- (1) Depression scores and anxiety scores will reduce (improve) significantly at Time 2, relative to Time 1.
- (2) Higher approach goal expectancy (more likely to succeed) will predict a steeper (i.e. faster and/or greater) increase in goal progress and steeper decrease in goal difficulty over the course of treatment. Similarly, this will also predict steeper improvement in depressive symptoms over the course of treatment relative to lower approach goal expectancy.
- (3) Higher avoidance goal expectancy (more likely to fail) will predict a steeper decrease in goal progress and a steeper increase in goal difficulty over the course of treatment. Similarly, this will also predict less improvement in depressive and anxious symptoms over the course of treatment relative to lower avoidance goal expectancy (less likely to fail).
- (4) Higher conditional approach goal setting (CGS constructs - happiness, feeling of fulfilment and self-worth) will predict a steeper decrease in goal progress. Similarly, this will also predict less improvement in depressive symptoms over the course of therapy relative to lower conditional approach goal setting.
- (5) Higher conditional avoidance goal setting will predict a steeper decrease in goal progress and a greater increase in goal difficulty. Similarly, this will also predict less improvement in depressive and anxious symptoms over the course of therapy relative to lower conditional avoidance goal setting.

### **Design**

The main study design is longitudinal.

## **Participants**

Participants will be recruited from a student health service (across two sites: a Student Health Centre and GP Surgery nearby) that provides time-limited Cognitive Behavioural Therapy (CBT) and Cognitive Analytic Therapy (CAT), delivered by a qualified Clinical Psychologist and Trainee Clinical Psychologists. A priori power analysis was carried out using G-Power (Faul, Erdfelder, Lang & Buchner, 2007) for the correlations and repeated measures within subjects factors ANOVAs (Hypothesis 1). Preliminary correlations will be conducted to study the relationships between the main study variables at Time 1. 67 participants are required to detect a medium to large effect ( $r=0.4$ ), with an alpha significance level of 0.05 and power of .80 for the correlation analyses. In keeping with Cohen's (1992) recommendation, 39 participants are needed for repeated measures ANOVAs (and 34 participants for paired samples t-tests) in order to detect medium effect sizes at a power of .80, with an alpha significance level of 0.05. To test other hypotheses, a multi-level modelling (MLM) analysis will be used. Based on 8 psychological therapy sessions per participant, approximately 100 participants would be required (Hox, 2002).

Data will be collected via a web-based survey to maintain anonymity between the participant and the principal investigator. We know from recent research (Chapter 2: Empirical paper) that it is possible to recruit 70 participants within a 12-month period from the proposed research site. With the use of a tablet computer, expectantly making it more convenient for participants to complete the survey opposed to attempting to locate an available desktop computer for this purpose, it is anticipated the recruitment sample for this study will be 100. The use of multi-level modelling provides an opportunity to assess at a more detailed level how participants' approach- and avoidance goal cognitive appraisals, in relation to anxiety and depression, change over the course of therapy.

## **Permission of ethics committees**

This proposal will be considered by the National Health Service Research Ethics Committee (IRAS), [NHS Trust] Research & Development Office and a separate Ethics Committee specifically

for the Student Health Service. All appropriate ethical applications will be submitted after approval of this proposal by the Division of Clinical Psychology, University of Liverpool Research Committee.

### **Procedure**

Post approval, recruitment of service-users will take place at a Student Health Centre for the purposes of this study. Participants will be asked if they would be willing to take part when they attend for initial assessment with the Clinical Psychologist. They will then read a participant information sheet online before giving electronic consent to take part. Participants will be provided with a web link which will take them to a web-based survey used to collect data for this study. To avoid loss of data, participants will complete measures on a tablet computer in the waiting room before attending each of their psychological therapy sessions. Time 1 will take approximately 30 minutes to complete measures. Every other time point thereafter will take approximately 10 minutes to complete. Data will be collected over 12 months and upon completion of measures at each Time point, uploaded to a database. The principal investigator will design the web-based questionnaire. The web-based questionnaire will be piloted before study data is collected.

### **Measures**

Demographic data will be gathered to include age, gender, ethnicity and model of therapy participants have been offered. All measures will be administered electronically. Participants will define two approach goals and two avoidance goals. For each goal at Time 1: CGS, expectancy, difficulty, progress, effort and emotional symptoms. Depressive and anxious symptoms will be measured using the Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke & Williams, 1999) and the Generalised Anxiety Disorder scale (GAD-7; Spitzer, Kroenke, Williams & Lowe, 2006). These measures are used routinely at the service from which data collection is anticipated. Additionally, before each weekly therapy session, for each goal, expectancy, difficulty, progress and effort will be measured and the PHQ and GAD administered.

The PHQ-9 (Spitzer, Kroenke & Williams, 1999) is a validated self-administered nine item depression scale based on the diagnostic criteria for major depressive disorder in the Diagnostic and Statistical Manual Fourth Edition (DSM-IV) (American Psychiatric Association, 1994).

The GAD-7 (Spitzer, Kroenke, Williams & Lowe, 2006; Garcia-Campayo et al, 2010) is a validated, self-administered seven item anxiety scale designed to assess the presence of the symptoms of Generalised Anxiety Disorder referred to in the DSM-IV (American Psychiatric Association, 1994).

To generate approach- and avoidance- goals an adapted version of the Goals Task (Dickson & MacLeod, 2004) will be used to elicit approach- and avoidance goals.

For goal expectancy, goal difficulty, goal progress and goal effort ratings, each participant will rate on 7-point scales (a) perceived goal likelihood outcomes (goal expectancy), (b) perceived goal difficulty, (c) perceived goal progress, (d) perceived goal effort and (d) perceived goal importance. The latter rating is a control measurement to ensure goals are meaningful to the participant.

The final set of questions will assess CGS (e.g. Hadley & MacLeod, 2010; Street, 2002) where three aspects of well-being are measured against each goal (happiness, feeling of fulfilment and self-worth). An eight-point scale will be derived from the combination of answers and a CGS score will subsequently be calculated. The sum-score for CGS has been found to have good internal reliability (Crane, Barnhofer, Hargus, Amarasinghe & Winder, 2010).

### **Data analysis**

Preliminary correlational analyses will be undertaken to explore relationships between measures at Time 1. Repeated measures ANOVAs will be used to investigate whether scores of difficulty, progress, anxiety and depression change from Time 1 to Time 2 (before and after psychological therapy). A multi-level modelling analysis will then be performed using MLwiN (Rasbash, Charlton, Browne, Healy & Cameron, 2009) to allow relationships to be simultaneously assessed at several levels, i.e. to test whether CGS and goal expectancy for approach- and avoidance therapy goals are predictive of goal difficulty, goal progress and emotional symptoms over the course of therapy.

### **Clinical relevance**



It is anticipated this study will highlight further to Clinical Psychologists and psychological therapists the importance of considering not only the definition and domains of a client's goals, but the cognitive appraisals they construe of their goals. The field of psychology should be striving to improve the efficacy of psychological therapy. Spending time discussing and re-visiting service-users personal goals during therapy may significantly impact on symptomatic improvement with a view to enriching the application of the therapeutic model of choice.

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### **Author's reflections**

Preparing a thesis is no mean feat; however it helped that I was interested in the subject area and enjoyed the process of discovering new findings and putting these findings into words. Like all research, the process came with its ups and downs; the inevitable technical faults that come with working with technology; recruiting a suitable sample; life being life. However one aspect of this research I did not anticipate was the resonance the area had with me during this emotive research process.

I suppose I might have been slightly detached from the subject area at first. Despite it being human nature to pursue goals and assess their progress during pursuit, I did not connect personally with this initially; rather my motivation and interest was intellectually located. However, at the height of thesis stress, I experienced substantial levels of anxiety and at times low mood. My most important goal at this time was "To submit my thesis and pass the course". Previous to my experiencing negative affect, my levels of goal expectancy were high, perceived goal progress was positive and CGS was low. However, during this period of anxiety and low mood, I noticed myself believing that I could not be happy, feel fulfilled or have self-worth until I submitted and passed my thesis (high CGS). My ratings of expectancy and progress also reduced, which was potentially holding me in this 'rut' of low mood. I used my knowledge of the area to reflect upon my feelings and make positive steps to achieve my goal to prove to myself that I could do it. Consequently, my mood improved and here I am writing the final lines of my thesis.

As therapists, we seek to empathise with our clients to enrich our understanding of their experience, in an effort to support them to the best of our abilities. I have learnt that sometimes it is possible to empathise with one's research area; an experience that helped me connect with my research and maintain genuine enthusiasm throughout the process.

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