EMOTION REGULATION IN CHILDREN WITH AN ANXIETY DISORDER: THE ROLE OF PARENT FACTORS

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SUMMARY

Childhood anxiety disorders are among the most common forms of psychopathology and confer significant psychosocial impairments to functioning. To enhance understanding of these disabling disorders, this thesis examined emotion regulation in clinically anxious children (ages 5-16) and the role of parental emotion socialisation practices. Chapter 2 presented a study on parental reactions to children's negative emotions and child emotion regulation in a sample of 134 children. Results showed that mothers of anxious children espoused less supportive emotion socialisation practices than mothers of non-anxious children. Fathers overall were significantly less supportive than mothers when reacting to children's emotions. Overall, anxious children were found to have greater difficulty managing negative emotions compared to non-anxious children. Parental emotion socialisation practices were associated with children's emotion regulation. Chapter 3 reported an observational study on associations between supportive and non-supportive maternal reactions and mother and child anxiety ($N = 89$). Findings suggested that a combination of maternal and child anxiety status influenced levels of supportive reactions towards children, with non-anxious mothers displaying more support towards non-anxious children. Compared to interactions between non-anxious mothers' and their children, anxious mothers displayed a less supportive and more non-supportive interaction style. Overall, non-supportive maternal reactions were expressed more frequently towards anxious children. In chapter 4, a study was presented on parental meta-emotion philosophies, observed emotion coaching behaviours and child emotion regulation in a sample of 109

children. Compared to parents of non-anxious children, parents of anxious children were characterised by less emotion-coaching and were less aware of their own and children's emotions, although this awareness varied by emotion type. Anxious children also evidenced greater difficulty regulating a range of negative emotions compared to non-anxious children. Finally, in chapter 5, child emotion regulation and parental emotion socalisation were examined as predictors of treatment outcome in 105 clinically anxious children. After controlling for initial anxiety severity, maternal non-supportive reactions predicted symptom change, whilst child emotion dysregulation played a role in predicting both anxiety symptom change and remission. Taken together, this thesis extends our understanding of the role of familial factors in childhood anxiety disorders and child emotion functioning, with implications for treatment.

STATEMENT OF CANDIDATE

I certify that the work in this thesis entitled "Emotion regulation in children with an anxiety disorder: The role of parent factors" has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree at any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

The research presented in this thesis was approved by Macquarie University Ethics Review Committee, reference numbers: HE30OCT2009-D00166 on 8 December 2009 and 5201100802 on 15 February 2012.

Signed: .....

Katherine E. Hurrell (30555302)

Date: 6 January 2015

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CHAPTER ONE

GENERAL INTRODUCTION

Childhood Anxiety

Anxiety disorders are the most highly prevalent form of psychopathology in children and adolescents (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003), with 12-month prevalent rates estimated to range as high as 24% (see Merikangas, Nakamura, & Kessler, 2009, for a review) and a lifetime prevalence of approximately 28.8% (Kessler et al., 2005). The age of onset for anxiety disorders is significantly earlier than other disorders, with a median age of eleven years (Kessler et al., 2005). According to the Diagnostic and Statistical Manual (DSM-5; American Psychological Association, 2013) children can be diagnosed with any of the following ten main anxiety disorders: separation anxiety, generalized anxiety, selective mutism, panic disorder, panic attack, agoraphobia, social anxiety disorder, specific phobia, substance/medication-induced anxiety disorder and anxiety disorder due to another medical condition. [1] The disorders share core symptoms that include recurrent, intense and excessive feelings of fear, nervousness or apprehension, worrisome cognitions and physical symptoms such as heart palpitations, nausea, sweating, shallow breathing, light headedness and muscle tension (American Psychological Association, 2013).

Childhood anxiety disorders are often associated with significant impairments in social and academic functioning and ultimately to the avoidance of engaging in age-related activities (Albano & Detweiler, 2001; Essau, Conradt, & Petermann, 2000; Greco & Morris, 2005; Van Ameringen, Mancini, & Farvolden, 2003). The course of an anxiety disorder also carries the added risk of co-morbid psychopathology, including other anxiety disorders and depression (Angold, Costello, & Erkanli, 1999; Essau et al., 2000; Keller, et al, 1992; Layne, Bernat, Victor, & Bernstein, 2009),

[1] The research presented in this thesis was conducted prior to the introduction of the DSM-5. At the time of data collection, the following anxiety disorders were also included: posttraumatic disorder, acute stress disorder and obsessive-compulsive disorder.

leading to further disability, a more severe trajectory of psychopathology and a chronicity that can extend well into adulthood (Pine, Cohen, Gurly, Brook, & Ma, 1998; Seligman & Ollendick, 1998; Wittchen, Beesdo, Bittner, & Goodwin, 2003). The study of anxiety problems and their aetiology during childhood is critical, as it is during the early years that anxiety typically develops (Kessler et al., 2005) and can interfere with important developmental tasks, such as forming peer relationships and schooling (e.g., Albano & Detweiler, 2001; Strauss, Frame, & Forehand, 2010).

The goal of this thesis was to provide new insights into the development and understanding of childhood anxiety disorders by bringing together the literature concerning parental emotion socialisation and children's emotion regulation. Among typically developing children, the study of emotion socialisation and child emotion regulation has been pivotal in helping to inform and understand healthy child adjustment (e.g., Morris, Silk, Steinberg, Myers, & Robinson, 2007), and over recent years, more effort has been placed on trying to understand the socialisation processes relevant to child psychopathology (e.g., Katz, et al., 2014; Suveg, et al., 2008) and associated emotion regulation difficulties (Southam-Gerow & Kendall, 2002). With respect to anxiety disorders, problems with emotion regulation have also been increasingly discussed as a putative risk factor for their development and maintenance (e.g., Cisler, Olatunji, Feldner, & Forsyth, 2010; Hofmann, Sawyer, Fang, & Asnaani, 2012). Emotion regulation is defined as the "extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals" (Thompson, 1994, pp. 27-28). Emotion socialisation refers to the practices parents employ to teach their children about emotions, their causes and consequences, and how to express and regulate them (Eisenberg, 1998). This chapter will provide an overview of the aetiology

of anxiety disorders, drawing specific attention to emotion socialisation and child emotion regulation.

Aetiology of Anxiety Disorders

A range of risk factors has been associated with the development of anxiety disorders (Merikangas & Pine, 2002; Vasey & Dadds, 2001). From a developmental psychopathology perspective (see Vasey & Dadds, 2001), these risk factors are purported to interact in a dynamic way and through diverse trajectories to influence the onset of anxiety disorders. Key aetiological variables that have received attention include genetics, temperament, parenting and life events (see Rapee, Schniering, & Hudson, 2009 for a review). For instance, with regard to genetics, evidence suggests that anxiety disorders run in families, with a heritability estimate of approximately 30% (Gregory & Eley, 2007). Both 'top down' (children of anxious parents) and 'bottom up' (parents of anxious children) research methods reveal a high co-occurrence of anxious disorders between family members (e.g., Beidel & Tuner, 1997; Last, Hersen, Kazdin, Orvaschel, & Perrin, 1991), providing strong evidence for familial aggregation of anxiety. There is also a genetic contribution for individual characteristics, such as temperament/behavioural inhibition, that are linked to anxiety (Fox, Nichols, et al., 2005). Environmental influences (i.e. shared and non-shared factors) also contribute significantly to the expression of anxiety (Eley, et al., 2003; Hallett, Ronald, Rijsdijk, & Eley, 2009) and are important in helping to understand how they interact with genetic vulnerabilities to predict anxiety.

With the understanding that environmental factors make up a substantial proportion of the variance that explains anxiety, there has also been increased research attention on family-related factors. As a result, theoretical models on the influence of parenting factors have been a particular focus over the past two decades (e.g., Chorpita

& Barlow, 1998; Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005; Hudson & Rapee, 2004; Suveg, Zeman, 2004). More recently, there has been an interest on linkages between parenting and models of anxiety that involve child emotion dysregulation (e.g., Suveg, Morelan, Brewer, & Thomassin, 2010). This has evolved out of a wealth of data within the normative literature supporting a link between parenting styles (e.g., emotion coaching; Eisenberg, 1998; Gottman, Katz, & Hooven, 1996) and children's emotion functioning, such as emotion regulation. It is further recognised that emotion regulation is central to adaptive psychological functioning (Cicchetti, Ackerman, & Izard, 1995) and that difficulties in this area may increase one's vulnerability for developing psychopathology (Bradley, 2000).

Two key aetiological factors of child anxiety that are most relevant to this thesis, from individual (child) and environment (family) perspectives, include temperament and parenting factors. These variables are discussed in the following section.

Temperament

Perhaps one of the most stable indicators of a child's reticent response to novelty or uncertainty is 'Behavioural Inhibition' (BI; Fox, Henderson, Marshall, Nichols, & Ghera, 2005; Kagan, Reznick, Clarke, Snidman, & Garcia-Coll, 1984). BI is a temperament style characterised by the persistent tendency to approach unfamiliar situations in a fearful, cautious or avoidant manner (Kagan, et al., 1984). The connection between BI and anxiety is well established, with several longitudinal studies showing an elevated risk for later anxiety disorders in behaviourally inhibited children (e.g., Biederman, et al., 1993; Chronis-Tuscano, et al., 2009; Hirshfeld-Becker, et al., 2007; Mian, Wainwright, Briggs-Gowan, & Carter, 2011; Muris, van Brakel, Arntz, & Schouten, 2011; Rosenbaum, 1993). Self-report assessment of BI amongst older

children and adolescents also demonstrates links between the temperament style and higher levels of anxiety symptoms, particularly for social anxiety disorder (Muris, Merckelbach, Schmidt, Gadet, & Bogie, 2001; Muris, Merckelback, Wessel, & van de Ven, 1999). Retrospective accounts among anxiety-disordered adults show a similar association, with significantly higher self-reported levels of BI compared to adults without an anxiety disorder (Mick & Telch, 1998; Reznick, Hegeman, Kaufman, Woods, & Jacobs, 1992).

Given the association between BI and anxiety disorders and the similar characteristics they share, there has been debate as to whether they represent different constructs or merely fall at different points along the same continuum (see Goldsmith & Lemery, 2000 for a review). More recently, Rapee and Coplan (2010) argued for the distinction between BI and anxiety disorders by highlighting the evidence regarding their unique and non-overlapping characteristics. They also point out the moderate concurrent associations between BI and anxiety disorder symptoms and that not all individuals who are inhibited necessarily go on to develop an anxiety disorder. As such, investigation into the child's environment has been undertaken with research focusing on moderating or mediating factors, including the domains of peer relationships, parenting and other contexts that involve adults (see Degnan, Almas, & Fox, 2010 for a review). Importantly, not all environmental variables necessarily interact with BI to predict anxiety, as some factors (e.g. parenting) may confer an additive risk for anxiety development regardless of child inhibition (see Hudson & Dodd, 2012).

Parenting Factors

Considerable attention has been given to the role of parenting influences on the development of childhood anxiety disorders (e.g., Chorpita & Barlow, 1998; McLeod, Wood, & Weisz, 2007; Rapee, 1997, 2001). The variables of control/overprotection and

lack of warmth are commonly implicated in theoretical models (Hudson & Rapee, 2002; McLeod, et al., 2007). Other parenting factors that also show associations with child anxiety include, anxious modelling (Beidel & Turner, 1997; Bögels & Brechman-Toussaint, 2006), criticism/rejection (Hudson, Dodd, & Bovopoulos, 2011) and parental anxiety (Last, et al., 1991; Micco, et al., 2009). These key parenting variables will be discussed in turn below.

Parental control. The literature uses the term parental control synonymously with overprotection, overinvolvement, overcontrol and intrusiveness. These various terms reflect similar parenting styles, conceptualised as a pattern of behaviour that involves overly intrusive behaviour, excessive regulation of children's activities and minimal granting of age-appropriate autonomy (Ginsburg, Grover, Cord, & Ialongo, 2006). These behaviours are theoretically assumed to increase child anxiety by restricting children's opportunities to explore novel or challenging situations, fostering the perception that the environment is uncontrollable and diminishing a child's personal sense of confidence and mastery to cope with challenges (Chorptia & Barlow, 1998; Vasey & Dadds, 2001; Wood, McLeod, Sigman, Hwang, & Chu, 2003). Findings of a meta-analysis conducted by McLeod and colleagues (2007) showed that parenting accounted for only a small percentage (4%) of the variance in child anxiety, yet when parental control was examined separately, it demonstrated a medium effect size and accounted for 18% of the variance. Similarly, another meta-analytic review that assessed relations between parent and child anxiety (symptoms of anxiety and clinically anxiety status) and observed parental control in 23 studies of children (ages < 12 months to 11 years) found a strong association between high levels of parental control and higher levels of child anxiety (van der Bruggen, Stams, and Bögels, 2008).

Interestingly, this effect was strongest for girls, for school-aged children, families from higher socioeconomic backgrounds and for studies that employed discussion tasks.

Evidence for the association between parental control and child anxiety appears reliable, but determining the nature of causality is somewhat more problematic. Longitudinal data suggest that parental control predicts the later development of child anxiety symptoms (Bayer, Sanson, & Hemphill, 2006; Edwards, Rapee, & Kennedy, 2010; Ginsburg, Grover, & Ialongo, 2005; Hudson & Dodd, 2012). For example, Hudson and Dodd (2012) showed that after controlling for anxiety symptoms at baseline, maternal overinvolvement at age four predicted higher clinical anxiety at age eight. This provides convincing evidence of the importance of maternal behaviours in the development of anxiety over time. Yet, in the study by Edwards and colleagues, child anxiety was also predictive of later overcontrol in mothers suggesting that increased anxiety in the child leads to increased parental control. Thus, both child and parent factors appear to act as important contributors to the development of child anxiety and this has led to the support of a bidirectional model – that child anxiety symptoms can elicit parental overcontrol, which in turn can exacerbate child anxiety (Hudson & Rapee, 2004; Rubin, Nelson, Hastings, & Asendorpf, 1999).

Parental warmth/rejection. Parents who display warmth are considered to be accepting of their child, supportive and emotionally responsive (McLeod, et al., 2007). Some evidence supports a link between child anxiety and parenting that is low in warmth (e.g. Barrett, Fox. & Farrell, 2005; Hudson, Comer, & Kendall, 2008; Moore, Whaley, & Sigman, 2004; Siqueland, Kendall & Steinberg, 1996). However, findings are mixed and a very small amount of the variance (less than 1%) in child anxiety has been accounted for by parental warmth (see Bögels & Brechman-Toussaint, 2006; McLeod, et al., 2007 & Wood, et al., 2003). Some research also indicates that warmth

is lower amongst parents who themselves are anxious (e.g., Whaley, Pinto, & Sigman, 1999; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002), yet not all studies have been able to show this link (e.g. Moore, et al., 2004; Rork & Morris, 2009).

At the other end of the continuum is parental rejection or negativity, which is characterised by a lack of warmth/acceptance and marked by high levels of criticism and disapproval (Rapee, 1997; Wood, et al., 2003). Theory asserts that parental rejection may elevate a child's risk for developing anxiety by reducing their sense of self-worth and competence (Ginsburg & Schlossberg, 2002; Rapee 1997). Some support for this notion has been provided by longitudinal research, where for example, ratings of observed maternal criticism predicted children's higher levels of anxiety symptoms six years later (Ginsburg, et al., 2005). In another study that prospectively examined the development of social anxiety, Lieb and colleagues (2000) found that parental rejection was a contributor to the development of social anxiety disorder in adolescents. In both instances, levels of parental rejection were found to be higher amongst parents with psychopathology. Similarly, in observational studies of parent-child interactions, parents of clinically anxious children behaved in a more critical manner towards their children compared to parents of non-anxious children (Barrett, et al., 2005; Hudson, et al., 2011; Hudson & Rapee, 2001). Overall, however, the evidence that parental criticism/rejection is associated with child anxiety is inconclusive and accounts for a mere 4% of the variance in child anxiety (McLeod, et al., 2007; Wood, et al., 2003).

Parental anxiety and anxious modelling. Parental anxiety is considered a risk factor for the development of childhood anxiety, with children of clinically anxious parents estimated to be seven times more likely to develop an anxiety disorder compared to children of parents with no psychopathology (Beidel & Turner, 1997;

Turner, Beidel, & Costello, 1987). As discussed earlier, this increased risk relates in part to heritability but does not fully explain the transmission of anxiety within families. As such, it has been hypothesised that anxious parents may be more inclined to employ maladaptive parenting behaviours, such as overprotection (Chorpita & Barlow, 1998; Rapee, 1997), and to model more anxious behaviours (Drake & Ginsburg, 2011; Grüner, Muris, & Merckelbach, 1999; Murray, et al., 2008). For instance, Drake and Ginsburg (2011) found that during an anxiety-eliciting situation with their children, anxious mothers expressed more anxious behaviours (e.g., made fearful statements, displayed nervous mannerisms) than non-anxious mothers. Similarly, anxious mothers in this study were also more likely to report being more avoidant of threatening situations in their own lives (e.g. avoiding certain places, people or situations), which suggests that children of anxious parents fail to witness their parents fully engage in or confront anxiety-provoking situations. Other ways in which anxious parents appear to model anxiety include, a higher use of catastrophising responses (Whaley, et al., 1999), the tendency to interpret ambiguous situations as threatening and to encourage their children to avoid potentially threatening situations (Barrett, Rapee, Dadds & Ryan, 1996).

Beyond overprotection and warmth. Overall, the literature suggests a number of ways in which parenting behaviours differ between parents of anxious and non-anxious children. Relative to other parenting variables, overprotectiveness appears to be the most convincing parental behaviour linking child anxiety (McLeod, et al., 2007). However, the research continues to be dominated by a focus on the dimensions of parental overprotection and warmth, with relatively less attention to other potential parenting variables. As such, the study of a wider array of parenting factors (e.g., emotion-related practices, patterns of parent-child interactions) is necessary, along with

a focus on the role of both mothers and fathers (Bögels & Brechman-Toussaint, 2006). Suveg and colleagues (2005) noted the importance of understanding the nature of emotion socialisation processes in families of anxious children, as evidence for emotion-related deficits in anxious children was starting to build (e.g., Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004). As such, Suveg and colleagues examined emotion discussions in families with anxiety-disordered children and families with non-anxious children and discovered important differences between the two groups. Namely, that parents of anxious children were less engaged in emotion discussions with their child, less emotionally expressive and discouraged the discussion of emotion more than parents of non-anxious children. Since then, a small subset of studies on emotion socialisation in families of anxious children has emerged (e.g., Hudson, et al., 2008; Suveg, et al., 2008). This research has helped develop our understanding of other ways parenting might contribute to the development and/or maintenance of child anxiety. This thesis will now review more extensively the research on parental emotion socialisation practices and children's emotion functioning.

Parenting and Children's Emotion Functioning

Emotions, like fear and anxiety, serve important social and communicative purposes, which from a functionalist perspective, help to motivate and influence behaviour and promote adaptive functioning (Campos, Campos, & Barrett, 1989; Thompson, 1990). In addition, developmental research and theory asserts that learning how to adaptively manage emotions and associated behaviours in a socially or culturally appropriate way is a critical for children's healthy development (Denham, et al., 2003; Eisenberg & Fabes, 1992; Halberstadt, Denham, & Dunsmore, 2001; Saarni, 1990). While biological factors (e.g. temperament) contribute to how well children self-regulate, express and deal with emotional experiences (see Nelson, Kendall, & Shields,

2013), children's emotional development is largely socialised, with parents exerting an especially important influence (Eisenberg, Cumberland, & Spinrad, 1998; Morris, et al., 2007; Saarni, 1999). This section will provide a general overview of parenting as it relates to children's emotion functioning, and in particular, emotion regulation. But first, the thesis will define and discuss emotion regulation, and then review the link between anxiety and emotion regulation.

Emotion regulation

Thompson's (1994) definition of emotion regulation encompasses several inter-related characteristics of emotion regulation. These include processes of maintaining, enhancing or inhibiting emotional arousal, social contexts in which emotion is managed (e.g., parental teaching, sympathising with others), acquisition of responses that are associated with altering the intensity, duration and range of an emotional experience (i.e., temporal features) and the goal or purpose for which regulation is being employed (i.e., regulating an emotion to function in a particular situation).

Further to this definition, Thompson (1994) discusses several ways in which emotion is regulated: (1) *neurophysiological components* – process within the nervous system (inhibitory and excitatory) that regulate emotional arousal and physiological reactivity; (2) *attention processes* – managing the intake of emotionally-arousing stimuli (i.e., shifting attention, behaviourally distracting oneself, thinking pleasant thoughts); (3) *attributions* – changing the interpretation of a situation or internal cue (e.g., reinterpreting outcomes of a frightening situation; seeing the benefits of heighted physiological arousal, for instance, during a performance); (4) *coping resources* – enhancing access to support from others (e.g., talking to family or friends) or material comfort (e.g., reading a favourite book); (5) *regulating familiar settings* – selecting and

creating an environment that assists with emotional demands (e.g., routines in a family household; occupational settings); and (6) *response selection* – choosing alternative emotional or behavioural responses that help with enhancing a positive outcome/achieving a goal (e.g., using anger to problems-solve an interpersonal problem, rather than reacting with insults or aggression).

As is evident, the implications of emotion regulation could be wide and varied and may influence multiple life domains (e.g. peer relationships, academic coping; Gross & John, 2003; Thompson, 1994). For example, the effects on areas such as interpersonal functioning and personal well-being has been highlighted by Gross and John (2003), who show that individuals who tend to suppress their emotions, i.e., reluctant to share emotions with others, report more avoidance in their relationships and have lower levels of social support. It was also shown that emotion suppression is linked to higher symptoms of depression, lower self-esteem, less optimism and lower life satisfaction, thus having a negative impact on individuals' sense of well-being.

Emotion regulation and anxiety

The ability to regulate emotion, as defined above, in a socially appropriate, flexible and adaptive manner, is essential for the accomplishment of various developmental tasks throughout the lifespan (e.g., social, academic, family; see Saarni, Campos, Camras, & Witherington, 2006 and Thompson, 1994 for reviews). When these regulatory functions fail to operate in these ways, *emotion dysregulation* is purported to result (Cole, Michel, & Teti, 1994). Theory asserts that emotion dysregulation is a central feature of most forms of psychopathology (e.g. Cole, et al., 1994; Casey, 1996) and Bradley (2000) suggests that common risk factors (e.g. trauma, attachment difficulties, temperament) share the same vulnerability that lead to maladaptive regulation. Although the study of

emotion regulation in clinical populations has been relatively limited in comparison to nonclinical samples, there has been a noticeable shift in focus among researchers to increasingly consider the role of emotion regulation, as both an aetiological and maintaining factor, in psychopathology and especially in the anxiety disorders (Cisler & Olatunji, 2012).

The link between poor emotion regulation and anxiety has become increasingly apparent (e.g., Amstadter, 2008; Cisler, et al., 2010), with anxiety-disordered children and adults characterised by several maladaptive coping strategies (e.g., over-reliance on suppression, poor use of reappraisal, dysregulated expression; Campbell-Sills, Barlow, Brown, & Hofmann, 2006; Carthy, Horesh, Apter. Edge, & Gross, 2010; Suveg & Zeman, 2004). Weems (2008) takes a particularly definitive stance, arguing that sub-classifications of anxiety disorders (e.g., separation anxiety disorder; generalised anxiety disorder; GAD) should be considered secondary to the core features of dysfunctional emotion regulation. In addition, emotion dysregulation models have emerged to help explain potential pathways through which anxious symptomology and disorders may develop (e.g., Mennin, Turk, Heimberg, & Carmin, 2004; Suveg, Morelen, Brewer, & Thomassin, 2010). For instance, in adults with GAD, Mennin, Heimberg, Turk and Fresco (2005) provide evidence for a model, that a combination of poor emotion understanding and a tendency to experience emotions intensely and quickly, leads to more aversive emotional reactions and the subsequent use of maladaptive coping strategies (i.e., excessive control and avoidance). Mennin and colleagues (2005) further found that composite emotion regulation scores predicted the presence of GAD, over and above measures of anxiety, worry and depressive symptoms. More recently, Suveg and colleagues (2010) investigated a dysregulation model through assessing retrospective accounts of young adult's temperament

(behavioural inhibition) and family environment (emotional climate and expressiveness) and their current self-reported emotion regulation and anxiety symptoms. Suveg's results showed that emotion dysregulation fully mediated the relationship between behavioural inhibition and anxiety and partially mediated the relationship between the family environment and levels of anxiety. Thus, emotion dysegulation is one mechanism through which, high levels of behavioural inhibition and restrictive family expressiveness at least, exerts its influence on anxiety symptomatology.

Among anxious children, a growing line of research shows they have fundamental difficulties regulating emotion. One of the first known empirical studies to examine this was conducted by Southam-Gerow and Kendall (2000). In a sample of 7 to 15 year old children, they found that anxious youth scored lower on measures assessing their ability to both hide and change their emotions. Questions such as, "Can you change your feelings?" and "How do you hide your feelings from others?" were asked to examine children's knowledge and strategies involved with regulating emotion. The results revealed that anxious children possessed similar knowledge regarding emotions and cues for feelings to non-clinical children, yet their reported ability to modify or regulate emotions was inferior. In a subsequent study conducted by Zeman, Shipman and Suveg (2002), links were drawn between emotion regulation difficulties and internalising symptoms in children. Although the sample for this particular study did not include a clinical group, the results nonetheless revealed a strong link between difficulties managing emotions and anxiety symptoms. Specifically, poor emotional awareness, inhibited anger, dysregulated expression of anger and sadness, and poor coping with anger related to symptoms of anxiety, as well as depression.

In a later study that included a clinically anxious group, Suveg and Zeman (2004) found that compared to nonclinical children, anxiety-disordered children reported significant difficulty regulating the emotions of fear, sadness and worry and reported experiencing the emotions of anger and worry in more intense ways. Maternal reports of children's emotion regulation also paralleled these findings, revealing that mothers in the clinical group perceived their children having greater difficulties managing negative emotions and as being more emotionally labile and dysregulated (e.g., slammed doors when mad). In addition, Suveg and Zeman interviewed the children about their degree of self-efficacy for managing worry, sadness and anger (e.g. "How much would you be able to make yourself feel better in this situation?"). For all three emotions, anxious children reported themselves as significantly less self-efficacious than non-anxious children. Similarly, it has further been shown that anxious children engage in more maladaptive and fewer problem-solving strategies than nonclinical children when experiencing unpleasant emotion (Carthy, et al., 2010; Suveg, et al., 2008). For example, in a study with 10 to 17 year old youth, Carthy and colleagues examined the use of reappraisal to regulate emotional reactions associated with viewing threatening images (e.g., angry faces, dangerous animals). They found that clinically anxious children used reappraisal less often than non-anxious children to reduce the level of threat. Carthy also found that anxious children reported less frequent reappraisal in everyday situations, thus highlighting regulatory mechanisms that may be associated with the maintenance of child anxiety.

Taken together, these studies highlight aspects of emotion regulation difficulties in clinically anxious children and illustrate how these difficulties potentially contribute to the nature of their psychopathology (e.g., hyper-arousal, limited use of reappraisal; Carthy, et al., 2010). Whilst understanding the management of fear and worry is

naturally relevant to the study of child anxiety problems, a broader examination of emotion is needed, such as anger and sadness, in addition to the parent-related processes that might be linked (see Morris, et al., 2007). For instance, there are aspects of deficient emotion-related functioning (e.g. frequency of negative affect, poor emotional awareness) that appear common to both anxiety and depression (Kerns, Comer, & Zeman, 2014; Suveg, Hoffman, Zeman, & Thomassin, 2009), and further research may help to explain the high rates of co-morbidity between the two disorders (Garber & Weersing, 2010). Whilst initial research has indeed made a significant contribution to improving our understanding (e.g., Hudson, et al., 2008; Southham-Gerow & Kendall, 2000; Suveg & Zeman, 2004), there is still a distinct lack of research in child anxiety compared to the normative / developmental psychology literature. Given the high prevalence rates of childhood anxiety disorders (Merikangas, et al., 2009) and the emotion dysregulation problems that appear to underlie them (Southam-Gerow & Kendall, 2002; Suveg, et al., 2010), this area of study is worthy of more attention as it may help to understand the aetiological factors associated with child anxiety, and ultimately enhance prevention and treatment.

In sum, theoretical and empirical perspectives on poor emotion regulation (or emotion dysregulation) strongly advocate this as being not only a core feature of anxiety disorders, but as perhaps a primary vulnerability that elevates the risk of developing an anxiety disorder. So then, it is important to further the study of emotion regulation in anxious children and the factors that may contribute to the deficits.

Parenting and emotion regulation

The process of emotion socialisation begins in infancy through the infant-caregiver relationship (Kopp, 1989) and continues throughout childhood (Saarni, 1999). Although

there are various ways in which parents might socialise their children's emotions, Eisenberg and colleagues (1998) have identified three primary methods: (a) parent reactions to children's emotions, (b) parent-child discussion of emotion and (c) parental expression of emotion.

Parent reactions. The way in which parents react to their children's emotional displays, are posited to influence children's developing emotion management skills in a direct fashion. When parents respond in supportive ways, they tend to show empathy and a willingness to understand their child's situation, help them work through upsetting emotions (e.g. provide comfort, teach, offer strategies), assist with problem-solving and allow their child to express how they are feeling in a validating and sensitive manner (Eisenberg, et al., 1998; Eisenberg, Fabes, & Murphy, 1996; Gottman, et al., 1996). In contrast, parents who respond to their children's emotions in non-supportive ways are more inclined to display negative emotion themselves (e.g. become distressed, show annoyance), attempt to restrict their child's emotion expression, minimise or dismiss their child's feelings or resort to punitive measures to quickly 'shut-down' negative emotion (Eisenberg, et al., 1998; Gottman, et al., 1996). Buck (1989) hypothesised that children who receive negative parental reactions to displays of emotion learn to hide their feelings, but will go on to experience heighted internal physiological symptoms (such as anxiety) as a result. Some evidence for this theory has been provided by Gottman and colleagues (1996) who showed links between supportive / positive parenting and lower physiological stress levels in children. Additionally, longitudinal research by Eisenberg and colleagues (1999) showed that non-supportive parental reactions (punitive and distress reactions) to children's emotions (at age 6-8) predicted later regulation problems (at age 10-12). Thus taken together, research agrees that supportive responses lead to better outcomes for children, by fostering their

appropriate emotional expression, communication and regulation, and non-supportive responses to poorer outcomes in children, such as increased emotional inhibition, dysregulated affect and lower levels of socio-emotional competence (Eisenberg & Fabes, 1992; Eisenberg & Fabes, 1994; Eisenberg et al., 1996; Gottman, 1997; Jones, Eisenberg, Fabes, & Mckinnon, 2002).

Parent-child discussion of emotion. Emotion-related discussions between parents and children help to foster an environment where children feel supported and encouraged to express and communicate their feelings (Malatesta & Haviland, 1985). Naturally, emotion-discussions might occur in the same context as parents reacting to children's displays of emotion (as discussed above), but may also take place during every-day situations that may or may not involve the child's emotion. For instance, parents may initiate a conversation relating to their own emotion or a situation that is perhaps emotionally evocative. In such scenarios, parents use the conversation as an opportunity to share knowledge, teach and discuss possible methods of resolution. Not surprisingly, consequences of parent-child emotion discussions on children's emotional development are positive, with enhancements to areas such as emotion-related knowledge, language and skills (Denham, 1998; Dunn, Brown & Beardsall, 1991; Eisenberg et al., 1998; Gottman, et al., 1997).

Parental expression of emotion. By observing how parents express their emotions and the type of emotion they choose to display, children develop ideas around what is normal or expected and form emotion-related 'schemas' that help guide their own emotional expression and management (see Dunsmore & Halberstadt, 1997, for a review). In general, research supports the view that positive parental expression of emotion contributes to better emotion regulation in children, prosocial behaviours, fewer negative emotional displays, social competence and positive parent-child

relationship (e.g., Cumberland-Li, Eisenberg, Champion, Gershoff, & Fabes, 2003; Dunn & Brown, 1994; Garner, 1995; Garner & Power, 1996). For example, in a community sample of four to eight year old children, Eisenberg and colleagues (2001) explicitly tested links between maternal emotional expression and children's emotion regulation and measures of social and emotional competence. Based on self-reported emotion expression and observed mother affective displays during interactions with their children, Eisenberg found that positive emotional expression related to better child emotion regulation, which in turn related to low levels of internalising and externalising problems and to higher levels of social competence (e.g., socially appropriate behaviour, popularity). In contrast, high levels of negative affect expressivity related negatively to children's emotion regulation, which was in turn related to higher externalising behaviours and lower social competence.

Another, highly notable, perspective on emotion socialisation concerns the work of Gottman and colleagues (1996) who pioneered and empirically validated the construct known as *meta-emotion philosophy*. This refers to an organised set of feelings and thoughts that parents have about their own emotions and one's children's emotions. This philosophy is purported to influence the way in which parents socialise their children's experience and expression of emotion and has been helpful in understanding typical child emotion functioning. More recently, meta-emotion philosophy has become a focus for studies involving clinical populations, such as children with conduct problems (Katz & Windecker-Nelson, 2004) and adolescents with depression (Hunter, et al., 2011; Katz, et al., 2014).

According to this philosophy, there are two main parenting styles: (1) *emotion coaching* – these parents are comfortable with emotions in themselves and in their children, view negative emotion in their children as an opportunity for bonding,

teaching, exploration and encouragement of expression and tend to be more aware of emotions in themselves and in their children; (2) *emotion dismissing* – these parents are concerned that negative emotions are harmful and, as such, will employ strategies to quickly change their child's emotions (such as dismissing, minimising or ignoring). Data on these two parenting styles supports the use of emotion coaching behaviours as highly favourable for a range of children's socio-emotional outcomes (e.g., peer relationships, self-esteem, physiological stress; Gottman, et al., 2006; Katz & Hunter, 2007; Katz & Windecker-Nelson, 2006; Shortt, Stoolmiller, Smith-Shine, Eddy, & Sheeber, 2010; Stocker, Richmond, & Rhoades, 2007). For instance, Gottman and colleagues (1996) examined links between parenting practices and children's emotion regulation and socio-emotional outcomes in a longitudinal study involving 56 families. Based on parent interviews and parent-child observations, Gottman found that children of parents who were characterised as high on emotion coaching at age 5, showed better regulation capabilities, positive peer relations, less illness and higher academic scores (e.g., mathematics and reading) at age 8, compared to children of parents who were lower on emotion coaching. Among clinical populations, emotion coaching has further distinguished families of children with and without indicators of psychopathology (Katz, et al., 2014; Katz & Windecker-Nelson, 2004). For example, Katz and Windecker-Nelson (2004) examined emotion coaching and parental awareness of emotion in 130 families of children aged 4 to 6 years. Their results showed that parents of children with conduct problems were both less coaching and less aware of their own emotions than parents of children within the control group. Katz and Windecker-Nelson also showed that children of parents who were more emotion coaching and better aware of emotions (of their own and children's emotions) demonstrated better peer

relationships (e.g., more pleasant play, less negative affect), regardless of children's group status (conduct problems vs. control).

Though supportive / emotion-coaching parenting practices in the context of child emotion are convincingly associated with positive socio-emotional outcomes in children, there is a stark lack of research on these variables in families of anxiety-disordered children. Moreover, the fundamental emotion-beliefs in parents of anxious children, i.e., their 'meta-emotion structure', is unknown, and thus investigating this construct could provide unique insight into how they socialise their children's emotions and areas potentially in need of amelioration (i.e. parental interventions).

The Role of Emotion Regulation and Socialisation in Treatment

In addition to the role in development and maintenance of child anxiety disorders, emotion regulation and parental socialisation of emotion may also have implications for treatment. This is relevant to cognitive behavioural therapy (CBT), since exposure to feared situations requires an inevitable degree of tolerance to negative emotion. Based on emotion regulation theory and psychopathology (e.g., Mennin, 2004), one could assume that children who are better regulated at pre-treatment will be able to tolerate the requirements of exposure better than children who are poorly regulated, and thus more likely to adhere and complete their exposure regime. Similarly, parents who at pre-treatment espouse more supportive emotion socialisation practices (i.e., emotion coaching, as defined above), may also be better at tolerating negative emotion in their child and therefore more able to adaptively assist them as they face anxiety-provoking situations.

Cobham and colleagues (2012) highlight the importance of including parents in the treatment of child anxiety and document ways that parental involvement may either

help or hinder children's progress, such as practicing skills with their child, holding particular beliefs about their child's coping and parents learning how to apply anxiety-management skills in their own lives. Cobham also notes the importance of research attempting to better understand child-specific and family factors that contribute to enhancing treatment outcome. Recently in an individual patient data meta-analysis, Manassis and colleagues (2014) found that when active parental involvement (e.g., encouraging children to confront feared situations) is included in treatment, outcomes for anxious children improve. Potentially then, parents who are supportive in their emotional styles and more willing to allow their child to express negative emotion, may be more disposed to engage with the active CBT involvement and thus facilitate their child's engagement with the more challenging aspects of treatment (i.e., exposure) than parents who are less emotionally supportive.

The interest in pre-treatment predictors of outcome for anxious children has increased over recent years, as there are substantial numbers of children who remain impaired by their symptoms following treatment (see James, James, Cowdrey, Soler, & Choke, 2013). Frequently examined variables have included parental psychopathology and family factors (e.g., Cobham, Dadds, Spence, & McDermott, 2010; Lundkvist-Houndoumadi, Hougaard, & Thastum, 2014), diagnostic features (e.g. comorbidity; Kendall, Brady, & Verduin, 2001) and demographic characteristics (e.g., age and gender; see Hudson, 2005). However, there continues to be a lack of consistency with regard to the predictor variables, as findings are mixed across the studies (see Knight, McLellan, Jones, & Hudson, 2014). It is therefore important that research continue the investigation of pre-treatment predictors of outcome, so that children at risk of poorer response can be identified prior to therapy and for treatment strategies to be refined and enhanced.

Emotion regulation in the context of CBT has been examined on two previously known occasions. The first was in a study conducted by Suveg, Sood, Comer and Kendall (2009) who investigated changes in emotion functioning following CBT in a sample of clinically anxious children, ages 7 to 15 years. They found that treated children showed improvements in the areas of emotion awareness, increased anxiety self-efficacy and reductions in worry dysregulation. In addition, changes in worry regulation as a result of treatment significantly predicted change to children's anxiety symptoms. Based on these findings, Suveg and colleagues noted the importance of not only equipping anxious children with more *adaptive* methods of managing their worried feelings, but that treatment should also aim to help children reduce their reliance on *maladaptive* emotion management strategies (e.g., crying and carrying on). The second study to demonstrate links between emotion regulation and treatment outcomes was conducted in a sample of socially anxious children (Kley, Heinrichs, Bender & Tuschen-Caffier, 2012). A range of predictors of treatment outcome (e.g., pre-treatment severity, parental psychopathology) and pre- and post-treatment measures of child emotion regulation were examined. Kley and colleagues showed that, in addition to higher pre-treatment severity scores predicting a greater reduction in socially anxious symptoms at post-treatment, a reduction in children's self-reported maladaptive emotion regulation strategies (e.g., withdrawing into oneself) also predicted a reduction in anxiety symptoms. However, as both these studies focused on changes in children's emotion regulation, the contribution of pre-treatment emotion regulation to symptom change is unclear. In particular, it remains unclear the extent to which pre-treatment emotion regulation contributes to symptom change over and above initial anxiety severity.

In sum, emotion regulation is becoming a pertinent factor in the treatment of anxiety disorders. Models of emotion regulation therapy have emerged for the treatment of adult anxiety disorders and are currently under further investigation (see Fresco, Mennin, Heimberg, & Ritter, 2013). For anxious children, there are now enhanced treatment approaches that may be used to specifically target children's emotion regulation and related areas of functioning (see Southam-Gerow, 2013). A recent study on hyperactive and oppositional preschoolers showed that a parent intervention that taught parents how to respond more supportively to their children's emotions, not only improved parental emotion socialisation practices, but showed that improvements to parenting translated to less emotional lability and hyperactive/oppositional symptoms among the children (Herbert, Harvey, Roberts, Wichowski, & Lugo-Candelas, 2013). However, little is know about how pre-treatment parental emotion socialisation practices influence outcomes following CBT for childhood anxiety disorders.

Overall Aim and Structure of This Thesis

This thesis sought to examine the way in which emotion socialisation practices may contribute to emotion regulation skills in children with anxiety disorders. Growing evidence supports a link between child anxiety and emotion regulation difficulties (e.g., Bender, Reinholdt-Dunne, Esbjørne, & Pons, 2012; Suveg, et al., 2010) and sufficient empirical evidence supports the influence of parenting on children's emotional development (Eisenberg, et al., 1998; Gottman, et al., 1996). Yet surprisingly, the study of emotion-related parenting in clinical populations remains relatively scant. Given the prevalent and chronic nature of childhood anxiety disorders (Costello, et al., 2003; Kessler, et al., 2005) and ongoing risk for comorbidity (e.g., Angold, et al., 1999), it is crucial that our knowledge base concerning development and maintenance factors is expanded upon and refined. Doing so will help to enhance prevention and treatment

programmes and ultimately the improvement of outcomes for clinically anxious children. The first three papers of this thesis focus on parental emotion socialisation of children's emotions in three independent nonoverlapping samples, and consider the implications this has on children's emotion functioning. The final paper concerns the role of child emotion regulation and parental socialisation of emotion as potential predictors of treatment outcome for childhood anxiety disorders.

The main objective of the study reported in Chapter Two was to identify how parent reactions to children's negative emotions differ between parents of anxious and non-anxious children, and to consider possible links between parent reactions and children's emotion regulation. Since studies on parenting are typically conducted with mothers, this study sought to examine the role of fathers and so maternal and paternal emotion socialisation practices were examined separately. Both parent- and child-reported aspects of child emotion regulation were assessed, with the aim of obtaining specific insight into areas of emotion-related functioning among clinically anxious children. This chapter has been accepted for publication in *'Journal of Anxiety Disorders'* for the January 2015 issue (see Appendix A).

The study that follows in Chapter Three examined the influence of child and maternal anxiety status on maternal emotion socialisation practices. Using key emotion socialisation variables of supportive and non-supportive reactions (Eisenberg, et al., 1998), the study aimed to shed light on how mothers respond to their children during anxiety-provoking situations and whether or not these responses vary according to the presence of anxiety in either the mother, child or both members of the dyad. As this study used pre-existing data from Gar and Hudson (2008), the focus was on mothers because data collected from this earlier study included mothers only. This chapter has

been submitted for consideration for publication in *'Journal of Clinical Child and Adolescent Psychology'*.

Chapter Four reports a study that investigated the underlying belief structures and associated behaviours that are purported to influence how parents socialise their children's emotions (Gottman, et al., 1996). Specifically, parental awareness and coaching of emotions were examined in parents of anxious and non-anxious children, and children's emotion regulation were assessed across different emotion types. This study utilized a combination of observation, interview and self-report methods to gather information on parenting and child emotion regulation. This study provides unique insight into the emotion socialisation practices in families of clinically anxious children. This chapter has been submitted for consideration for publication in *'Journal of Abnormal Child Psychology'* and was presented at the World Congress of Behavioural and Cognitive Therapies (Lima, Peru, July 2013).

The final study that is reported in Chapter Five concerns the investigation of child emotion regulation and socialisation practices as predictors of treatment outcome for clinically anxious children. The findings highlight how these pre-treatment variables may influence change in child anxiety symptoms and the remission of anxiety disorders following cognitive behavioural therapy. The implications of the findings are discussed. This chapter has been submitted for consideration for publication in *'Behaviour Research and Therapy'* and was presented at the European Association for Behavioural and Cognitive Therapies (The Hague, The Netherlands, September 2014).

The results of these studies are presented as four individual papers, resulting in an inevitable degree of overlap. Despite the presence of some repetition throughout the thesis, every effort has been made to keep this to a minimum.

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CHAPTER TWO

PARENTAL REACTIONS TO CHILDREN'S NEGATIVE EMOTIONS: RELATIONSHIPS WITH EMOTION REGULATION IN CHILDREN WITH AN ANXIETY DISORDER

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Abstract

Research has demonstrated that parental reactions to children's emotions play a significant role in the development of children's emotion regulation (ER) and adjustment. This study compared parent reactions to children's negative emotions between families of anxious and non-anxious children (aged 7-12) and examined associations between parent reactions and children's ER. Results indicated that children diagnosed with an anxiety disorder had significantly greater difficulty regulating a range of negative emotions and were regarded as more emotionally negative and labile by their parents. Results also suggested that mothers of anxious children espoused less supportive parental emotional styles when responding to their children's negative emotions. Supportive and non-supportive parenting reactions to children's negative emotions related to children's emotion regulation skills, with father's non-supportive parenting showing a unique relationship to children's negativity/lability.

Key Words: emotion; emotion regulation; parenting; child anxiety

Parental Reactions to Children's Negative Emotions: Relationships with Emotion Regulation in Children with an Anxiety Disorder

1. Introduction

Difficulty regulating negative emotion is emphasised in etiological and maintenance models of anxiety (Mennin, Heimberg, Turk, & Fresko, 2005; Southam-Gerow & Kendall, 2002; Suveg, Morelan, Brewer & Thomassin, 2010; Thompson, 2001). Evidence of these difficulties has been reported in studies comparing children with an anxiety disorder (AD) to youth with no psychopathology. Specifically, AD children are found to have less understanding of hiding and changing emotions (Southam-Gerow & Kendall, 2000), experience negative emotion more intensely (Carthy, Horesh, Apter, Edge, & Gross, 2010; Suveg & Zeman, 2004), are more dysregulated in their expression of emotion (Suveg & Zeman, 2004), and engage in more maladaptive and fewer problem-solving emotion regulations (ER) strategies (Carthy, et al., 2010; Suveg, et al., 2008; Suveg & Zeman, 2004). In addition, emotional awareness, a specific facet of ER, has been shown to correlate with other emotional symptoms (e.g. depression) in children with ADs (Kerns, Comer, & Zeman, 2014). Evidence in support of the relationship between ER difficulties in anxious children and other important life domains is also starting to emerge (e.g. social functioning; Jacob, Suveg, & Whitehead, 2014).

Research examining family influences on anxiety disorders has been a steady focus for more than a decade. The study of emotion socialisation and related parenting styles, in particular, have provided insight into the practices that might contribute to AD children's emotion functioning. For example, in studies involving observations of family emotion discussions, parents of AD children tend to discourage their children's

emotion discussions, engage in less explanation of emotions and espouse a less positive interaction style than parents of ND children (Suveg, et al., 2008; Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005). Similarly, observed parental responses to children's affect differ between nonclinical and clinical families, with mothers of AD children behaving more intrusively and with less warmth in response to child negative affect than mothers of ND children (Hudson, Comer, & Kendall, 2008). In the study conducted by Hudson and colleagues (2008), no significant group differences emerged for observed parental responses to positive child affect, suggesting that parents of AD children have particular difficulty coping with their children's negative emotion. This study focused on observed reactions to discrete episodes of emotion that emerged during the experimental session. To date, we have limited information in clinically anxious children about parent's response to negative emotions outside the laboratory setting.

1.1. Emotion Socialisation within the Family

There is substantial empirical evidence to support the notion that parental coping with children's emotions relate to children's overall emotion socialisation and the quality of their emotional competencies (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Denham & Kochanoff, 2002; Fabes, Poulin, Eisenberg & Madden-Derich, 2002; Hooven, Gottman, & Katz, 1995). Amongst nonclinical populations, research demonstrates a significant relationship between parental reactions and children's ER skills and coping (e.g. Davidov & Grusec, 2006; Eisenberg, Fabes, & Murphy, 1996), with a strong emphasis on emotion socialisation practices that involve emotion-discussion, validation and problem solving (Gottman, 1997).

Research further suggests a number of pathways through which emotion socialisation processes can occur. These include direct pathways (e.g. emotion discussion, coaching) and indirect pathways (e.g. modelling). It is considered that children's ER, an important skill underlying emotional competence, also develops through these pathways (Morris, Silk, Myers & Robinson, 2007; Saarni, 1999) and is fundamental to healthy psychological adjustment (Cicchetti, Ackerman & Izard, 1995). According to Eisenberg, Cumberland and Spinrad (1998), there are three main ways by which parents can socialise their children's emotions: emotion discussion, parent reactions to children's emotions and family expressiveness. With regard to parent-child discussion of emotion, both direct and indirect mechanisms are purported to assist children's development of emotion-related knowledge, language and skills (Denham, 1998; Dunn, Brown & Beardsall, 1991; Eisenberg et al., 1998; Gottman, Katz & Hooven, 1997). When parents are available to discuss emotions with their children and use these opportunities to impart both knowledge and ways to manage them, children's developing emotional awareness and regulation appears to benefit. Similarly, parent reactions to children's emotions can directly influence children's developing emotion management styles, such that supportive responses tend to facilitate appropriate emotional expression, communication and ER, and non-supportive responses to children's greater use of emotional inhibition and dysregulated affect (Eisenberg & Fabes, 1992; Eisenberg & Fabes, 1994; Eisenberg et al., 1996; Gottman, 1997). Finally, the frequency, intensity and type of emotional expression that occurs in families is suggested to contribute to children's developing emotion-related schemas, such as which emotions to express or inhibit, when to express them and the manner in which to regulate them (for a review see Dunsmore & Halberstadt, 1997). Finally,

positive family expressivity has been associated with better ER strategies and fewer negative emotional displays in children (Garner, 1995; Garner & Power, 1996).

1.2. Parental Emotional Styles and Child Emotion Regulation

In regard to the direct pathways of emotion socialisation, research to date has correlated specific parental reactions to some important child outcomes. For instance, children whose parents react in non-supportive ways (e.g. punitive, dismissing or minimising) tend to display more maladaptive, avoidant or inappropriate methods of ER and coping (Eisenberg, Fabes, Carlo & Karbon, 1992; Eisenberg, et al., 1996) and tend to exhibit lower levels of socio-emotional competence (Jones, Eisenberg, Fabes, &MacKinnon, 2002). In contrast, children whose parents react in supportive ways (e.g. emotion-and-problem-focused and encourage emotional expression) tend to be higher in levels of socio-emotional competence (e.g., Eisenberg & Fabes, 1994; Eisenberg et al., 1996; Roberts & Strayers, 1987).

Similarly, Gottman (1997; Gottman and colleagues, 1997) proposes that parents who respond to their children's emotions in an accepting, sensitive and supportive manner will enhance the development of ER skills in their children. Research on this *emotion-coaching* parental style has yielded positive outcomes in relation to children's ER and other socio-emotional areas of competence, such as self-esteem and peer relationships (Gottman, 1997; Gottman et al., 1997). In contrast, parents who ascribe an *emotion-dismissing* parental style tend to offer little guidance regarding emotions and refrain from using emotional experiences as opportunities to bond or problem-solve with their child. This latter style has been associated with poorer outcomes for children, such as poorer ER skills, poorer academic coping and lower levels of socio-emotional competence (Gottman, 1997; Gottman et al., 1997).

Amongst other clinical populations, research also shows the benefits of providing children with emotionally sensitive and supportive parenting. For instance, in children diagnosed with oppositional defiant disorder (ODD), parental emotion-coaching behaviours are related to greater child ER and more adaptive behaviours (Dunsmore, Booker, & Ollendick, 2013) and to better peer relations (Katz & Windecker-Nelson, 2004). In a sample of depressed adolescents, youth whose mothers held more proactive, coaching and insightful emotion beliefs, tended to have more adaptive emotion beliefs themselves (Hunter, et al., 2011). In addition, younger children with symptoms of attention-deficit hyperactivity disorder (ADHD) showed improvements to their ER skills and hyperactivity when mothers were taught emotion socialisation skills, such as emotion coaching (Herbert, et al., 2013). Thus, whilst parents of clinically disordered children appear to espouse less optimal emotion socialisation practices than parents of non-disordered children (e.g. Katz & Windecker-Nelson, 2004; Katz, et al., 2014; Suveg, et al., 2008; 2005), evidence indicates that for children high in emotional lability, supportive parental emotional styles may reduce the risk of worsening emotional and behavioural difficulties (see Dunsmore, et al., 2013) and may also help to attenuate symptoms. As such, a greater focus on emotion-related responses of parents may serve to guide intervention programs for anxious children. Indeed, recent preliminary evidence from a study that coached parents to model effective ER strategies and respond adaptively to children's negative emotion showed improvements in clinical outcomes of AD children (Lebowitz, Omer, Hermes, & Scahill, 2014).

In sum, findings on ER in anxious children indicate they have fundamental difficulties managing negative emotions, over and above that reported by non-anxiety

disordered children. The study of parent-reported reactions to children's negative emotions more generally in daily life is yet to receive full attention in the study of childhood anxiety disorders. Parent reactions have otherwise been documented in the normative literature (e.g. see Eisenberg, et al., 1998; Fabes, et al., 2001; Fabes, et al., 2002; Morris et al., 2007) and in studies of at-risk children (Shaffer, Suveg, Thomassin, & Bradbury, 2012; Suveg, Shaffer, Morelan, & Thomassin, 2011). Thus, further research is needed to incorporate the emotion-related variables of supportive (problem-focused, emotion-focused and encouragement of emotional expression) and non-supportive (minimisation, punitive and distress reactions) parental reactions in clinically anxious children. These variables further stem from emotion socialisation theory and research, having shown links with children's emotion functioning (Eisenberg, et al., 1998; Fabes, Leonard, Kupanoff, & Martin, 2001; Fabes, et al., 2002).

1.3. The Current Study

Parent-report of reactions to children's negative emotions has not yet been assessed in a sample of children diagnosed with an anxiety disorder. Previous work has employed observation methods to capture parental behaviours and interaction/communication styles in the context of child emotion (e.g. Hudson, et al., 2008; Suveg et al., 2005; 2008), but have not directly asked parents about their typical responses to child emotion. This study attempted to fill this gap by comparing self-reported parental responses of clinically anxious children to children with no psychopathology.

Given the empirical links between ER difficulties and psychopathology (Casey, 1996; Southan-Gerow & Kendall, 2000; Suveg & Zeman, 2004; Zeman, Shipman, &

Suveg, 2002) and that anxious children are among the clinical groups to be especially at risk of ER difficulties (Suveg & Zeman, 2004), it was of interest to determine whether parenting practices relate to ER using a sample of clinically anxious children, in particular, the role of 'supportive' and 'non-supportive' parental emotional styles, in response to children's negative emotions (e.g., fear, sadness and anger).

It was hypothesised that in contrast to parents of ND children, parents of AD children would display greater use of non-supportive parental reactions and less use of supportive strategies. Consistent with previous findings, it was also expected AD children would display poorer ER skills and higher levels of dysregulated emotion than children without an anxiety disorder. Finally, it was expected that parental emotional styles involving supportive reactions would relate to and predict better ER skills in children.

2. Method

2.1. Participants

Participants in the study were 134 children between the ages of 7 and 12 years and their biological parents. The sample was primarily of middle-class socioeconomic status (SES). The clinical group consisted of 36 girls (*M* age = 10, *SD* = 0 months) and 33 boys (*M* age = 9, *SD* = 3 months), who presented with their parents for treatment at the Emotional Health Clinic, Macquarie University, Sydney. Trained postgraduate clinical psychology students and Clinical Psychologists assessed the children using the semi-structured clinical interview, the Anxiety Disorders Interview Schedule for DSM-IV - Child and Parent Version (ADIS-IV-C/P: Silverman & Albano, 1996), resulting in the following principal diagnoses: generalised anxiety disorder 43%, social phobia 20%, separation anxiety disorder 13%, obsessive-compulsive disorder 4% and specific

phobia 2%. Forty percent of the children were diagnosed with an additional anxiety disorder, the most common being social phobia. Three children also met criteria for an additional diagnosis other than anxiety: mood disorder (n = 2) and oppositional defiant disorder (n = 1).

The nonclinical group consisted of 35 girls (age *M* = 9 years, *SD* = 6 months) and 30 boys (age *M* = 9 years, *SD* = 9 months) who had never sought treatment from a mental health professional. Children in the control group did not meet diagnostic criteria for a psychological disorder based on the ADIS-IV and scored within the normative range on both the Spence Child Anxiety Scale – Child and Parent Versions (SCAS-C/P) and the Strengths and Difficulties Questionnaire (SDQ). Nonclinical families were recruited from the community via advertisements in local sporting and recreational organisations, community noticeboards and local independent schools. To ensure comparable SES, nonclinical families were recruited from the same geographical area as the clinical group.

2.2 Measures

2.2.1 Psychopathology

Anxiety Disorders Interview Schedule for DSM-IV, Child and Parent Versions (ADIS-IV-C/P; Silverman & Albano, 1996). The ADIS-IV Child and Parent versions consists of child and parent semi-structured clinical interviews that makes diagnoses based on the criteria set out in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994). Children were assigned a diagnosis if either the parent or child reported that symptoms were causing significant interference in functioning and if the Clinical Severity Rating (CSR) of 4 or more was assigned (as outlined in the clinician's manual of the ADIS-IV by Silverman and Albano, 1996). The ADIS-IV-C/P has demonstrated good

psychometric properties of inter-rater and test-retest reliability (Silverman & Albano, 1996; Silverman, Saaverda, & Pina, 2001; Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). Research from our clinic has demonstrated excellent reliability for the ADIS with interrater agreement of kappa = 1.00 for an overall anxiety disorder diagnosis and between Kappa = .80 and Kappa = .93 for specific anxiety diagnoses (Lyneham, Abbott, & Rapee, 2007).

Spence Children's Anxiety Scale, Parent and Child Report (SCAS; Spence, 1998). The SCAS is a 38-item measure of anxiety symptoms on 6 subscales: Generalised Anxiety Disorder; Obsessive-Compulsive Disorder; Specific Phobia; Panic and Agoraphobia; Separation Anxiety; and Social Anxiety. The measure contains an additional six positive 'filler items' to reduce negative response bias. Respondents indicate the frequency with which each symptom occurs on a 4-point scale from 0 (*never*) to 3 (*always*). Sound psychometric properties have been reported, including adequate test-retest reliability, high internal consistency and high concurrent validity (Nauta, Scholing, Rapee, Abbott, Spence, & Waters, 2004; Spence, 1998, Spence, Barrett, & Turner, 2003). Internal consistency for the total SCAS score in this study was Cronbach's alpa .94 and .67 (Cronbach's alpha) for mothers' and fathers' reports, respectively.

Strengths and Difficulties Questionnaire, Parent and Child Report (SDQ; Goodman, 1997). The SDQ is a 25-item behavioural screening questionnaire that is divided into 5 scales: Emotional Symptoms; Conduct Problems; Hyperactivity/Inattention; Peer Relationship Problems; and Pro-social Behaviour. Respondents indicate on a 3-point Likert scale, 1 (*not true*), 2 (*somewhat true*), or 3 (*certainly true*), how each attribute applies to the child. This measure is found to have good psychometric properties, including an ability to distinguish between clinical and

nonclinical samples, high construct validity, as evidenced by convergence with established measures of child psychopathology (e.g. Achenbach, 1991), predictive validity, internal reliability and retest reliability (Goodman & Goodman, 2009; Goodman, Meltzer & Bailey, 1998; Goodman & Scott, 1999). Internal consistency for the SDQ in this sample was Cronbach's alpa = .59 and 1 for mothers and fathers, respectively.

Depression Anxiety Stress Scales-21 (DASS; Lovibond & Lovibond, 1995). The DASS-21 was included as an adult measure of depression, anxiety and stress. Parents rated each of the 21 items using a 4-point Likert scale from 0 (*not at all*) to 3 (*most of the time*). The DASS-21 has been assessed as a reliable and valid instrument in both community and clinical samples, with high internal consistency, and good convergent and discriminant validity (Antony, Bieling, Cox, Enns & Swinson, 1998; Clara, Cox & Enns, 2001; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). Internal consistency was Cronbach's alpha of .93 and 1, for mothers and fathers respectively.

2.2.2. Emotion Regulation

Emotion Expression Scale for Children (EESC; Penza-Clyve & Zeman, 2002). This 16-item self-report questionnaire was included to measure aspects of deficient emotional expression. It has two subscales: (a) Poor Awareness – difficulty labelling internal emotional experiences (e.g., "I often do not know why I am angry") and (b) Expressive Reluctance – lack of motivation or willingness to communicate or express negative emotional states to others (e.g., "I prefer to keep my feelings to myself"). The EESC uses a 5-point Likert scale from 1 (*not at all true*) to 5 (*extremely true*). The EESC has yielded acceptable psychometric properties, including high internal consistency, retest reliability and construct validity as evidenced by convergence with

other measures of emotion management (Penza-Clyve & Zeman, 2002). The internal consistency in this sample was Cronbach's alpha = .88.

Children's Emotion Management Scales (CEMS; Zeman, Shipman, & Penza-Clyve, 2001). The CEMS assesses children's self-reported sadness (12 items) and anger (11 items) management skills. It is comprised of three subscales: (a) Inhibition, suppression of emotional experience (e.g., "I get sad inside but don't show it"); (b) Dysregulated Expression, culturally inappropriate emotional expression (e.g., "I say mean things to others when I am mad"); and (c) Emotion Regulation Coping, adaptive methods of emotion management (e.g., "When I am feeling sad, I do something totally different until I calm down). The CEMS uses a Likert scale of 1 (*hardly ever*), 2 (*sometimes*), or 3 (*often*). Adequate psychometric properties have been demonstrated, with coefficient alphas ranging from .60 to .77 and test-retest reliability ranging from .63 to .80 and evidence of convergent and discriminant validity with measures of emotion awareness, regulation, social functioning and psychopathology (Zeman, et al., 2001). In the current study, internal consistency for sadness was Cronbach's alpha of .71, .57 and .66 for Inhibition, Emotion Regulation Coping and Dysregulated Expression, respectively. For anger, internal consistency was Cronbach's alpha of .80, .72 and .69 for Inhibition, Emotion Regulation Coping and Dysregulated Expression, respectively. Although the alpha for the subscale Emotion regulation coping is low, we decided to retain the scale as the reliability is comparable to previously reported data (e.g. McAuliffe, et al., 2007; Suveg, Sood, Comer, & Kendall, 2009), It is not uncommon for psychometric properties to be affected by factors such as test length (Kline, 2000) and since the ER subscale (sadness) is comprised of only five items, this may have contributed to the low alpha value. The argument to discard a subscale on the

basis of a low Cronbach alpha alone has been criticised in discussions on psychometric theory and practice (e.g. Kline, 2000; McCrae, Kurtz, Yamagata, & Terracciano, 2011).

Emotion Regulation Checklist (ERC; Shields & Chicchetti, 1997). The ERC is a 24-item adult-report measure (4-point Likert scale; 1 = *never* to 4 = *always*) of children's typical methods of managing emotional experiences, which was administered to both mothers and fathers. The checklist has two subscales: (a) Emotion Regulation – measures appropriate emotional display, empathy and emotional self-awareness (e.g., "Is empathetic towards others") and (b) Lability/Negativity – represents a lack of flexibility, mood lability and dysregulated negative affect (e.g., "Exhibits wide mood swings"). Shields and Chiccetti (1997) report high internal consistency for both subscales (emotion regulation = .83; lability/negativity = .96), strong construct validity with established measures of emotion regulation, strong discriminate validity and the ability to differentiate between well-regulated and poorly-regulated groups (Shields & Chiccetti, 1997). In this study, internal consistency was Cronbach's alpha of .61 and .74 for mothers and .60 and .70 for fathers, respectively for Emotion Regulation and Lability/Negativity scales. Although the reliability coefficients for the Emotion Regulation scales were acceptable, the current values are lower in comparison to values reported in validation studies (Shields & Chiccetti, 1997), it was decided to retain the use of the subscale on the basis of previous research having employed the measure in studies of child anxiety (e.g. Suveg & Zeman, 2004).

2.2.3. Parental Reactions to Children's Negative Emotions

Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, and Bernzweig, 1990). The CCNES is a self-report questionnaire that assesses parental behaviours in response to children's negative emotions (e.g. anger, fear, anxiety). Parents are presented with 12 hypothetical vignettes that depict a typical childhood

incident that causes child distress. Parents rate each vignette according to how likely they would be to respond in a given way, from 1 (*very unlikely*) to 7 (*very likely*). Ratings are coded according to the six following: Problem Focused (PF), e.g., "help my child think of places he/she hasn't looked yet"; Emotion Focused (EF), e.g., "distract my child by talking about happy things"; Expressive Encouragement (EE), e.g., "encourage my child to talk about his/her fears"; Minimisation Responses (MR), e.g., "tell my child that he/she is over-reacting"; Punitive Reactions (PR), e.g., "send my child to his/her room to cool off"; and Distress Reactions (DR), e.g., "feel upset and uncomfortable because of my child's reaction". Adequate psychometric properties have been reported, with internal reliability estimates ranging from .69 to .85 and acceptable test-retest reliability (Fabes et al., 2002). In this study, mothers' CCNES had Cronbach's alphas of .54, .70, .82, .80, .80 and .77 respectively for DR, PR, MR, EE, EF and PF scales. For fathers, Cronbach's alphas were .47, .75, .82, .89, .85 and .83 respectively for DR, PR, MR, EE, EF and PF scales. Due to the comparatively low Cronbach's alphas in both mother and father DR, no further separate analyses were used with this subscale.

In line with the initial validation paper (Fabes et al., 2002) and subsequent research (e.g. McElwain, Halberstadt & Volling, 2007; Suveg et al., 2011), the subscales of the CCNES were combined to form new composites of *supportive reactions* and *non-supportive reactions*. Through Principal Components Analysis (PCA) extraction method with Varimax rotation, the CCNES for both mother and father responses resulted in a two-factor solution: (i) Supportive Parenting, which comprised the subscales of EF, PF and EE and (ii) Non-supportive Parenting, which comprised the subscales of DR, PR and MR. Internal consistency for Supportive Parenting was Cronbach's alphas of .91 and .93 for mothers and fathers, respectively. Internal

consistency for Non-supportive parenting was Cronbach's alphas of .89 and .84 for mothers and fathers, respectively.

2.3. Procedure

After obtaining informed written consent from parents and verbal assent from children, a trained clinical psychologist or intern clinical psychologist administered the ADIS-IV-C/P. During the parent interview, children completed measures of symptomatology and emotion regulation. During the child interview, parents completed measures of symptomatology, emotion-related parenting styles and child emotion regulation. All clinical families went on to receive treatment at the clinic. Nonclinical families were reimbursed $50 for time and travel expenses.

2.4. Data Analysis

A series of t tests were used to examine group differences on the descriptive measures and parental reactions to children's negative emotions. The Bonferroni correction was applied to protect against an increased risk for a Type 1 error (critical alpha level = .05/6 = .01). To examine the influence of parent reactions on children's ER skills, separate multiple regression analyses (using General Linear Model procedures; GLM) were performed for each of the dependent variables. Each model contained the following predictor variables: CCNES (supportive parenting and non-supportive parenting), age, sex, parent psychopathology (total DASS score) and group (anxious and non-anxious). The dependent variables were divided into parent reported ER (ERC – subscales of Emotion Regulation and Negativity/Lability) and child reported ER (EESC – total score and CEMS – subscales of Sadness and Anger Inhibition, Sadness and Anger Regulation and Sadness and Anger Dysregulation). Not all variables met the assumption of normality in which case a logarithmic (Lg10)

transformation was conducted. These were applied to the parental DASS and ERC measures and maternal-reported reactions for the Punitive, Minimising and Problem-Focused subscales of the CCNES. There were no changes to the findings following the transformation and so all results presented are from non-transformed data.

3. Results

3.1. Descriptive Measures

There were no differences in mean age between anxious children and nonclinical children, $t(132) = -0.11$, $p > .05$ (anxious $M = 9.59$ years, $SD = 1.84$, nonclinical $M = 9.63$ years, $SD = 1.91$). A Chi-square test for independence (with Yates Continuity Correction, used to reduce the error in approximation) indicated that children's gender did not differ between the clinical and nonclinical groups, $\chi^2(1, N = 134) = .0$, $p > .05$ (clinical = 48% male, 52% female; nonclinical = 46% male, 35% female). There were also no differences in family income between the clinical and nonclinical groups, $\chi^2(3, N = 126) = .54$, $p > .05$ (clinical = 75% of families earn over $80, 000; nonclinical = 78% of families earn over $80,000).

The mean scores for both child and parent measures of symptomatology for the clinical and nonclinical groups are presented in Table 1 and Table 2, respectively. Anxious children were found to have significantly higher scores on the SCAS and the SDQ than nonclinical children. For the DASS, mothers and fathers of anxious children had significantly higher stress scores than mothers of nonclinical children. In addition, fathers of anxious children reported significantly higher symptoms of depression than fathers of nonclinical children. Differences between groups on the symptom measures provide support for the distinction between the clinical and nonclinical groups.

Table 1.
Means and Standard Deviations for Measures of Symptomatology Across Groups

	Clinical		Nonclinical	
Questionnaire	*M*	*SD*	*M*	*SD*
SCAS - Mother	34.61[a]	14.35	9.27[b]	6.04
SCAS - Father	32.17[a]	13.22	10.02[b]	16.21
SDQ – Mother	15.08[a]	6.80	5.43[b]	4.13
SDQ - Father	15.13[a]	7.20	5.10[b]	3.50
	Clinical		Nonclinical	
	M	*SD*	*M*	*SD*
Mothers				
Depression	7.2[a]	6.48	5.1[a]	5.72
Anxiety	5.46[a]	5.82	4.64[a]	6.28
Stress	14.28[a]	9.46	10.26[b]	6.9
Fathers				
Depression	7.94[a]	8.9	4.86[b]	5.38
Anxiety	3.9[a]	5.84	3.12[a]	4.14
Stress	14.26[a]	8.44	9.88[b]	6.02

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). SCAS = Spence Child Anxiety Scale Scales; SDQ = Strengths and Difficulties Questionnaire (Total Difficulties).

Table 2.
Means and Standard Deviations for Parent Reactions Across Groups

	Clinical		Nonclinical	
CCNES Subscale	*M*	*SD*	*M*	*SD*
MOTHERS				
Punitive Reactions	29.76[a]	8.61	28.39[a]	7.92
Minimisation Reactions	30.71[a]	11.34	32.66[a]	10.69
Emotion-Focused	64.86[a]	9.22	70.45[b]	8.30
Problem-Focused	67.09[a]	8.98	72.95[b]	5.73
Expressive Encouragement	55.88[a]	12.38	60.60[a]	10.25
FATHERS				
Punitive Reactions	30.31[a]	7.95	27.40[a]	8.75
Minimisation Reactions	36.64[a]	10.96	35.49[a]	12.45
Emotion-Focused	62.47[a]	10.19	65.28[a]	11.26
Problem-Focused	63.29[a]	9.39	67.00[a]	10.80
Expressive Encouragement	50.90[a]	14.00	48.35[a]	16.80

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). CCNES = Coping With Children's Negative Emotions Scale.

3.2. Parental Reactions to Children's Negative Emotions

Examination of maternal reactions revealed significant differences between mothers of anxious children and mothers of nonclinical children on the Emotion Focused (EF) subscale, $t(128) = -3.60$, $p < .01$; $d = 0.6$ and the Problem Focused (PF) subscale, $t(126) = -4.34$, $p < .01$; $d = 0.8$. Results indicated that mothers of non-anxious children reported using more Emotion-and Problem-Focused Reactions than mothers of anxious children. Comparisons of fathers between the clinical and nonclinical groups revealed no significant differences on any of the subscales of the CCNES. The mean scores for both mothers and fathers on the subscales of the CCNES are presented in Table 2.

Supportive and non-supportive parenting variables were also examined to compare maternal and paternal responses. Results within-groups revealed that mothers ($M = 194.24$, $SD = 25.09$) reported significantly more supportive reactions than fathers ($M = 178.83$, $SD = 31.72$), $t(98) = 4.02$, $p < .0005$ (two-tailed); $d = 0.8$. No difference was found between mothers and fathers for non-supportive parenting. A mixed between-within subjects analysis of variance was also conducted to examine the influence of group (Anxious, Non-Anxious) on parental reactions, across mothers and fathers. For supportive parenting, there was a substantial main effect, Wilka Lambda = .85, $F(1, 97) = 17.81$, $p < .00005$, partial eta squared = .16, with both groups showing less supportive parenting from fathers. The main effect comparing groups was also significant, $F(1, 97) = 5.962$, $p < .05$, partial eta squared = .058, suggesting higher levels of overall parental support to non-anxious children compared to anxious children. No significant findings emerged for non-supportive parenting.

Effects of child sex on parent reactions for mothers and fathers were also examined. No significant differences emerged between girls and boys for maternal

supportive and non-supportive parenting, $F(1, 83) = 1.64$, $p > .05$, partial eta squared = .02 and $F(1, 83) = 1.47$, $p > .05$, partial eta squared = .02, respectively. There were also no significant differences between girls and boys for paternal supportive and non-supportive parenting, $F(1, 83) = 2.18$, $p > .05$, partial eta squared = .03 and $F(1, 83) = .683$, $p > .05$, partial eta squared = .01, respectively.

3.3. Children's Emotion Regulation

The mean scores and standard deviations for both parent- and self- reported ER skills are seen in Table 3. For the Regulation subscale on the ERC, both mothers and fathers in the clinical group rated their children as having greater difficulty regulating their emotions than mothers and fathers in the nonclinical group, $t(134) = -7.45$, $p < .01$; $d = 1.29$ and $t(115) = -5.82$, $p < .01$; $d = 1.09$, respectively. On the Negativity/Lability subscale, mothers and fathers of anxious children rated their children as being more inflexible, labile and emotionally negative than parents in the nonclinical group, $t(121) = 7.12$, $p < .01$; $d = 1.29$ and $t(112) = 7.01$, $p < .01$; $d = 1.32$, respectively. For the EESC, anxious children rated themselves as significantly less aware of their emotions on the Poor Awareness subscale, $t(127) = 6.82$, $p < .01$; $d = 1.21$. Anxious children were also less likely to express their emotions on the Expressive Reluctance subscale compared to ratings of non-anxious children, $t(127) = 4.59$, $p < .01$; $d = 0.81$. Using the CEMS, anxious children rated themselves on the Regulation subscales as having greater difficulty regulating feelings of both sadness and anger than non-anxious children, $t(129) = -3.84$, $p < .01$; $d = 0.68$ and $t(129) = -5.94$, $p < .01$; $d = 1.05$, respectively. For the Dysregulated subscales, anxious children rated themselves as significantly more dysregulated in their expression of both sadness and anger compared to non-anxious children, $t(128) = 3.35$, $p < .01$; $d = 0.59$ and $t(134) = 2.95$, $p < .01$; $d = 0.51$, respectively. No differences on the Inhibition subscales for sadness and anger

were found between anxious and non-anxious children, $t(129) = 1.63$, $p > .01$; $d = 0.29$ and $t(131) = -1.28$, $p > .01$; $d = 0.22$, respectively.

Table 3.
Means and Standard Deviations for Child Emotion Regulation Across Groups

	Clinical		Nonclinical	
Questionnaire / Subscale	*M*	*SD*	*M*	*SD*
ERC – Mother				
Emotion Regulation	24.42[a]	3.66	28.63[b]	2.83
Lability/Negativity	31.15[a]	6.86	23.48[b]	5.03
ERC – Father				
Emotion Regulation	24.94[a]	3.50	28.35[b]	2.60
Lability/Negativity	31.38[a]	5.73	24.04[b]	5.29
EESC – Child				
Poor Awareness	20.73[a]	6.15	13.82[b]	5.28
Expressive Reluctance	20.91[a]	5.55	16.37[b]	5.67
CEMS – Child				
Sadness Inhibition	7.66[a]	2.10	7.05[a]	2.17
Anger Inhibition	6.89[a]	2.07	7.38[a]	2.33
Sadness Regulation	9.49[a]	1.91	10.95[b]	2.37
Anger Regulation	7.38[a]	2.05	9.45[b]	1.88
Sadness Dysregulation	5.66[a]	1.60	4.73[b]	1.55
Anger Dysregulation	5.45[a]	1.73	4.60[b]	1.60

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). ERC = Emotion Regulation Checklist; EESC = Emotion Expression Scale for Children; CEMS = Child Emotion Management Scales.

3.4. Analysis of Parent Reactions to Children's Negative Emotions in Relation to Child Emotion Regulation Skills

Since mothers and fathers of anxious children respectively reported higher stress and depression scores on the DASS than parents of non-anxious children, correlations between parental psychopathology and the CCNES were examined to determine if it was an appropriate covariate. Results of the bivariate correlations between the Stress and Depression subscales of the DASS and the six subscales of the CCNES revealed no significant relationships. However, it was decided to include parental psychopathology in order to control for the influence of parent symptomatology on children's ER. In regards to parent reactions on the CCNES, correlation analyses showed that only three of the subscales were correlated between mother and father responses: Distress Reactions, Minimisation Reactions and Emotion-Focused Reactions. Due to a lack of agreement between mothers and fathers on every scale of the CCNES, it was decided to examine each GLM model separately for mothers and fathers.

3.5. GLM models examining parent reactions with parent-reported child emotion regulation.

The Emotion Regulation and Negativity/Lability subscales from the ERC were used as the dependent variables. For the models examining maternal responses, the R squared values were .39 and .45 for Emotion Regulation and Negativity/Lability, respectively. For the models examining paternal responses, the R squared values were .32 and .43 for Emotion Regulation and Negativity/Lability, respectively. Only maternal supportive parenting significantly predicted children's Emotion Regulation, $b = .038$, $t(98) = 2.84$, $p < .01$, partial eta squared = .07, such that higher levels of supportive parenting was associated with higher children's ER skills. Father's non-supportive parenting significantly predicted both child's Negativity/Lability, $b = 0.067$,

$t(85) = 2.80$, $p < .01$, partial eta squared = .079 and Emotion Regulation, $b = -.03$, $t(88) = -1.98$, $p < .05$, partial eta squared = .04, respectively. However, mother's non-supportive parenting did not predict either children's Negativity/Lability or Emotion Regulation. Group was also a significant predictor for maternal-reported ER on the Emotion Regulation subscale, $b = -3.36$, $t(98) = -3.67$, $p < .0005$, partial eta squared = .12 and Lability/Negativity subscales, $b = .8.75$, $t(98) = 4.88$, $p < .0005$, partial eta squared = .22. For paternal-reported child ER, group was a significant predictor for both the Emotion Regulation subscale, $b = -3.74$, $t(88) = -4.59$ $p < .0005$, partial eta squared = .20 and Lability/Negativity subscales, $b = 6.93$, $t(85) = 4.14$, $p < .0005$, partial eta squared = .18. For parent psychopathology, both maternal and paternal symptoms were found to be a significant predictor for the Lability/Negativity subscales, $b = 0.18$, $t(98) = 2.34$, $p < .05$, partial eta squared = .03 and $b = 0.15$, $t(85) = 2.15$, $p < .05$, partial eta squared = .07, respectively, such that higher scores on the DASS related to higher levels of child dysregulated emotion. Parent psychopathology was not found to be a significant predictor for the Emotion Regulation subscale. Age and sex were not found to be significant predictors for the ERC subscales (ps > .05).

3.6. GLM models examining parent reactions with child-reported emotion regulation.

Results for supportive and non-supportive parental reactions on children's self-reported ER skills are presented in Table 4 for mothers and Table 5 for fathers. The individual subscales were examined separately in the GLM analyses, with the exception of EESC that provides an interpretable total scale score.

In the GLM models examining maternal supportive and non-supportive reactions, a number of significant predictors emerged for children's self-reported ER (See table 4). In all cases, child sex was not found to be a significant predictor ($p < .05$). For Sadness Inhibition (CEMS-SI), supportive parenting was a significant predictor

such that higher levels of supportive parenting were associated with lower inhibition of sadness. For Anger Inhibition (CEMS-AI), age was a significant predictor, suggesting reduced inhibition of anger with increasing age. For Sadness Regulation (CEMS-SR), non-supportive parenting, group and age were significant predictors such that higher levels of non-supportive parenting and clinical group membership related to less regulation for sadness, whereas increasing age related to higher regulation for sadness. For Anger Regulation (CEMS-AR), group was found to be the only significant predictor. There were no significant predictors for Sadness Dysregulation (CEMS-SD). For Anger Dysregulation (CEMS-AD), supportive parenting and psychopathology were significant predictors such that higher levels of supportive parenting related to less dysregulated anger, whereas a higher DASS score was associated with increased dysregulation for anger. For children's awareness of and willingness to express emotion (EESC), supportive parenting and group were significant predictors, relating to better awareness and expression of emotions for supportive parenting and less awareness and expression of emotions for clinical group membership.

For the GLM models examining paternal reactions, non-supportive parenting was found to be significant predictor for Sadness Regulation (CEMS-SR) such that increasing levels of non-support related to poorer regulation for sadness. For inhibition of sadness (CEMS-IS), neither supportive or non-supportive, nor group, age, sex or psychopathology were significant predictors. For inhibition of anger (CEMS-IA), age was the only significant predictor such that inhibition for anger increased with age. For Anger Regulation (CEMS-AR), group was a significant predictor such that clinical group membership related to poorer regulation. For Sadness Dysregulation (CEMS-SD) and Anger Dysregulation (CEMS-AD), there were no significant predictors. For children's awareness of and willingness to express emotion (EESC), group and parent

psychopathology were significant predictors, relating to less awareness and expression of emotions for higher paternal DASS scores and clinical group membership.

Table 4.
Summary of GLM Analyses for Child Emotion Regulation with Maternal Supportive and Non-Supportive Reactions, Group, Age and Parent Psychopathology

	Supportive Parenting				Non-Supportive Parenting				Group				Age				Parent Psychopathology				
Dependent Variables	*B*	t	*p*	η_p^2	*B*	t	*p*	η_p^2	*B*	t	*p*	η_p^2	*B*	t	*P*	η_p^2	*B*	t	*p*	η_p^2	R^2
CEMS																					
Sadness Inhibition	-.02	-2.30	.02*	.06	-.01	-1.30	.20	.02	.06	.09	.93	.00	.15	-1.17	.24	.03	-.02	-.70	.49	.01	.10
Anger Inhibition	-.01	-.63	.53	.00	-.01	-1.40	.16	.02	-.87	-1.82	.20	.02	.35	2.75	.01**	.08	-.02	-.85	.40	.01	.13
Sadness Regulation	.01	.99	.33	.01	-.03	-3.22	.00***	.12	-1.36	-2.18	.03*	.05	.25	2.04	.04*	.05	-.03	-1.2	.23	.02	.28
Anger Regulation	.01	1.45	.15	.02	-.01	-1.41	.16	.02	-2.26	-3.75	.00***	.14	.22	1.79	.08	.04	-.01	-.45	.66	.04	.33
Sadness Dysregulation	-.01	-.95	.35	.01	.01	1.10	.28	.01	.86	1.81	.07	.04	-1.1	-1.43	.16	.02	.01	.75	.45	.01	.17
Anger Dysregulation	-.02	-2.31	.02*	.06	.00	.05	.96	.00	.46	.96	.34	.01	.01	.09	.93	.00	.04	2.4	.02*	.06	.20
EESC	-.11	-2.45	.02*	.07	-.05	-.88	.38	.01	9.45	3.04	.00***	.10	.32	.54	.59	.00	.04	.40	.69	.00	.30

Note. CEMS = Child Emotion Management Scales; EESC = Emotion Expression Scale for Children. Overall R^2 also includes Sex in the model.
*$p < .05$, ** $p < .01$, *** $p < .001$

Table 5.
Summary of GLM Analyses for Child Emotion Regulation with Paternal Supportive and Non-Supportive Reactions, Group, Age and Parent Psychopathology

	Supportive Parenting				Non-Supportive Parenting				Group				Age				Parent Psychopathology				
Dependent Variables	*B*	t	*p*	η_p^2	*B*	t	*p*	η_p^2	*B*	t	*p*	η_p^2	*B*	t	*p*	η_p^2	*B*	t	*p*	η_p^2	R^2
CEMS																					
Sadness Inhibition	.00	.22	.83	.00	-.00	-.40	.69	.00	.92	1.44	.16	.02	.18	1.45	.15	.04	.02	.52	.61	.00	.07
Anger Inhibition	-.00	-.30	.77	.00	.00	.40	.74	.00	-.90	-1.33	.19	.02	.31	2.43	.02*	.07	-.04	1.20	.24	.02	.12
Sadness Regulation	-.01	-.75	.46	.01	-.03	-2.44	.02*	.07	-.90	-1.38	.17	.02	.26	2.40	.06	.05	.02	.53	.60	.00	.21
Anger Regulation	-.01	-1.88	.08	.04	-.00	-.12	.91	.00	-1.84	-2.80	.01**	.1	.21	1.59	.12	.03	-.00	-.1	.92	.00	.22
Sadness Dysregulation	.00	.32	.75	.00	.01	.98	.33	.01	.09	.19	.85	.00	-.14	-1.65	.10	.03	-.01	-.35	.73	.03	.09
Anger Dysregulation	.01	1.52	.13	.03	.00	.54	.59	.00	-.02	-.04	.97	.00	-.06	-.55	.59	.00	.04	1.52	.13	.00	.06
EESC	.03	.66	.51	.01	-.00	-.02	.98	.00	10.78	3.28	.00***	.13	.96	1.52	.13	.03	.34	2.28	.03*	.07	.31

Note. EESC = Emotion Expression Scale for Children; CEMS = Child Emotion Management Scales. Overall R^2 also includes Sex in the model.
*$p < .05$, ** $p < .01$, *** $p < .001$

4. Discussion

The results from this study provide further support for (a) ER difficulties in children with an anxiety disorder; (b) differences in parent reactions between parents of anxious children and parents of non-anxious children; and (c) a link between parental emotional styles and ER difficulties in children using parent-reported data. Results also document differences in parenting practices between mothers and fathers.

4.1. Emotion Regulation in Children with Anxiety

The hypothesis that anxious children would exhibit poorer ER skills than non-anxious children was supported. Mothers and fathers in the clinical group rated their children as having greater difficulty regulating their emotions and as being more inflexible, labile and emotionally negative than did mothers and fathers in the nonclinical group. From self-report, anxious children also indicated that they were less aware of their emotions and as less likely to express and communicate their emotions to others compared to non-anxious children. This is consistent with earlier findings showing that mothers of anxious children perceive their children as having greater difficulty regulating negative affect and with anxious children also rating themselves as having greater difficulty in this area (Suveg & Zeman, 2004). The finding that anxious children in the current study also rated themselves as poorer in ER skills provides some level of convergent evidence for their emotion management difficulties.

For the specific emotions of anger and sadness, children with an anxiety disorder indicated higher dysregulated expression and less adaptive coping than children in the control group. However, anxious children were equally likely to suppress their emotions as non-anxious children. This is a surprising result and seemingly inconsistent with the finding that anxious children in this study were more

reluctant to express their emotions (as measured by the EESC) and with typical perceptions of anxious children as being inhibited. However, the CEMS in comparison does not ask children about their efforts to communicate and discuss their emotions, but rather about hiding them. Interestingly, Suveg and Zeman (2004) also found a lack of group differences for emotional inhibition on this same scale and they also included a measure for worry. Perhaps anxious children are less motivated to communicate their negative emotions, but do not necessarily 'mask' them. On the contrary, it may seem that they are quickly venting their emotions in an attempt to cope (e.g. slam doors when mad), as evidenced by their higher scores for dysregulated expression. Such regulation difficulties may be due to anxious children's initial troubles identifying their negative emotions, as indicated by higher scores on the Poor Awareness subscale, and/or due to the intensity with which they experience such emotions. Although not examined in the current study, Suveg and Zeman (2004) found that children with an anxiety disorder reported experiencing their emotions more intensely than non-anxious children. In part, this would explain their higher levels of dysregulated emotion, since stronger emotions are inevitably more difficult to manage. Parental report of anxious children's greater lability and negativity also lends support to this notion.

4.2. Parental Reactions to Children's Negative Emotions

The hypothesis that parental emotional styles in the clinical group would be less supportive than parental emotional styles in the nonclinical group was partially supported: mothers of children in the clinical group reported significantly fewer Emotion Focused and Problem Focused reactions than mothers of children in the nonclinical group. However, the two groups were indistinguishable from each other for Expressive Encouragement, suggesting that mothers of anxious children are equally

likely to encourage their children to express their emotions as mothers of non-anxious children. This finding contrasts with previous emotion socialisation studies where mothers of anxious children were found to be more discouraging of emotion discussions compared to parents of non-anxious children (Suveg et al., 2005, 2008). Perhaps methodological differences between the studies account for this discrepancy. For instance, in the dyadic analyses of Suveg and colleagues (2005; 2008), mothers engaged in actual emotion discussions with their children. Not surprisingly, this approach may lend itself to revealing more in-depth and detailed information regarding group differences in the encouragement of emotional expression than would otherwise be captured by a self-report measure. It is further possible that the lack of group differences on this subscale be due to mothers of nonclinical children placing a stronger emphasis on and a greater involvement with Emotion-and-Problem Focused responding, rather than on encouraging their child to express their feelings. Nonclinical children in this sample also reported themselves as being significantly more motivated to express their emotions than clinical children, which may preclude the need for parents in this group to encourage their children to express emotion.

In regards to non-supportive parenting reactions, the data did not support the additional hypothesis that parents of anxious children would report higher levels of non-supportive parenting. Rather, results indicated that mothers in the clinical group are just less likely to offer support when their child is emotionally distressed, as opposed to reacting in more negative ways. This finding is somewhat surprising, as it was expected that parents of anxious children would engage in behaviours that quickly dampen down child emotion (e.g. punitive or minimising strategies). To a degree, this also contrasts with the use of maladaptive strategies that previous research identified in parents of

anxious children, such as a greater use of intrusiveness/control (Hudson, et al., 2008) that theoretically serves a similar purpose of reducing child distress.

Together, the results indicate that when confronted by displays of negative affect from their children, mothers of anxious children are less likely to respond with strategies designed to soothe their child, such as providing comfort or engaging in something fun (emotion focused) and as less likely to problem-solve strategies with their child in addressing the cause of their distress (problem focused). Observational research on emotional socialisation practices offer similar insights, whereby mothers of anxious children were less inclined to discuss negative emotions with their child and denoted a less positive and less supportive interpersonal style when discussing emotions in a family interaction task (Suveg et al., 2005, 2008). These findings are meaningful with respect to the theoretical and empirical perspectives on emotion socialisation practices, which indicate that higher levels of supportive parenting relate to better outcomes for children's overall emotional well-being (E.g. Eisenberg & Fabes, 1992; Eisenberg & Fabes, 1994; Eisenberg et al., 1996; Gottman, 1997). Furthermore, the finding that mothers of non-anxious children were more supportive in coping with their children's emotions and that non-anxious children were found to have better emotion regulation skills, points further to the important area of parental practices in the context of the child emotion.

With respect to paternal emotional styles, there was a trend for fathers of anxious children to rely more on non-supportive parenting practices, however the results did not reach statistical significance. Whilst previous research has found that fathers of anxious children tend to display more negative affect and appear less involved when discussing emotions with their children (Suveg et al., 2008), the current study did not find any group differences. Since this study employed self-report as a

means of assessing parental reactions, the situations depicted in the vignettes may not have been intense or 'real' enough to elicit these types of distress reactions, which may be particularly pertinent for fathers.

When examining differences between mothers and fathers, a unique finding for paternal reactions emerged, with fathers overall reporting significantly less supportive reactions than mothers. In part, this may explain the lack of statistical differences between fathers in the clinical and nonclinical groups, since their combined levels of supportive parenting was less than that of mothers. An earlier study using a nonclinical sample also found fathers to be less supportive than mothers when coping with their child's negative emotions (McElwain, et al., 2007), thus highlighting possible differences in emotion socialisation practices between the genders and/or father's capacity to cope with their child's negative affectivity.

For parenting reactions across groups, the results indicated that parents irrespective of their gender were much more inclined to respond to anxious children in less supportive ways. This finding appears counterintuitive, since anxious children are seemingly more in need of support, not less, when dealing with challenging situations. Yet, earlier research comparing anxious and non-anxious families found mothers of anxious children behaving more intrusively and negatively towards their children than mothers of non-anxious children (Hudson & Rapee, 2001; Hudson & Rapee, 2002). In addition, a study that compared mothers interacting with children who were not their own, found mothers of anxious children interacting in less negative ways with non-anxious children than children with an anxiety disorder (Hudson, Doyle & Gar, 2009). Thus, despite their apparent need for managing emotions and coping with challenging situations, anxious children appear to receive less support from parents comparatively to non-anxious children. Clearly, further research is needed to examine the

directionality of these parent-child factors, since it is possible that anxious children elicit less support from their parents due to frequently expressing more dysregulated emotion. On the other hand, a pattern of low parental support early on in a child's development may contribute to poorer emotion skills and resulting dysregulated affect. Whilst this latter view has been well documented in the literature (e.g. Gottman, 1997), family interaction studies that include experimental designs are needed to tease apart these dyadic factors.

4.3. Relationship Between Parental Emotional Styles and ER Difficulties in Children

The third major aim of this study was to examine the influence of parent reactions on children's ER skills. A number of significant findings emerged in the expected direction for the current study. The first of these was the relationship between supportive parental emotional styles and parent-reported children's ER. Results showed that for mothers only, higher levels of supportive reactions to children's negative emotions predicted better ER skills in children. For non-supportive parental emotional styles, only reactions from fathers were found to predict children's levels of negativity and lability, such that children's difficulty regulating negative emotions increased with higher levels of non-support from fathers. These findings are consistent with the work of Gottman (1997; Gottman and colleagues, 1997), who previously demonstrated that an emotion-coaching style of parenting predicts better ER skills in children. With respect to the current study, specific emotion-coaching behaviours are identified as those that encourage emotion expression (EE), provide comfort to the child (EF) and assist with problem-solving (PF). The current results showed that greater use of these emotion-coaching behaviours in mothers, positively related to children's ability to cope

with and manage their emotions. Gottman has similarly highlighted the relationship between emotion-dismissing behaviours and greater difficulties regulating emotions. The results of the current study also demonstrated this link, but only for fathers.

A similar pattern of findings emerged between parental reactions to children's negative emotions and children's self-reported ER skills. Maternal reactions on the whole predicted a larger set of ER skills for children than did paternal reactions. Specifically, maternal support correlated with and predicted fewer ER difficulties in the areas of inhibition for sadness, dysregulated expression of anger and children's awareness of and expression of emotions. Surprisingly, father's supportive reactions showed no relationship to nor predicted any of the child-reported ER variables. In contrast, both maternal and paternal non-supportive emotional styles predicted children's ER for sadness, so that children's ability to regulate sad feelings became increasingly more difficult when parents reported a greater use of minimising and punitive strategies or when they feel emotionally distressed (e.g. become upset).

As the findings indicated, not all areas of child ER related to parenting reactions in the same way. For instance, when parent-reported ER was examined with supportive parental emotional styles, a distinct and positive relationship emerged suggesting that children's overall abilities to regulate their emotions was predicted by greater use of emotion-and-problem focused strategies and encouraging emotional expression. However, when children reported on their own ER skills, this relationship varied according to the method of emotion management (e.g. inhibition, regulation) and the emotion itself (sad or angry). Furthermore, the results were only significant for mother's supportive parenting, whereas the effect for father's non-supportive parenting

was observed on two distinct occasions: the first was for father's report of children's levels of lability/negativity and the second for children's reported ability to regulate sad feelings. It is surprising that regulation for anger did not correlate with non-supportive parental reactions, since earlier research using normative samples have identified links between externalising negative emotions and greater use of non-supportive strategies by parents (e.g. Eisenberg, et al., 1999). Perhaps relying solely on children's self-report influenced the current findings, as opposed to ultilising parental reports and/or observational ratings that had been adopted in the earlier studies.

4.4. Conclusions

The findings of the current study support previous assertions regarding the role emotion regulation difficulties play in psychopathology. Results have highlighted the deficits associated with anxious children's emotion functioning, which appear to extend beyond that of anxiety to the inclusion of other negative emotions, such as sadness and anger. In line with the emotion socialisation literature, the current study has demonstrated the importance of responding to children's negative emotions in a supportive way and how this may be particularly important for children with an anxiety disorder.

In addition, the findings add to the literature on parenting practices that are associated with child anxiety. Specifically, results demonstrated that mothers of anxious children tend to provide less emotional and problem-solving assistance to their children during times of emotional distress. This could indicate that they experience a degree of difficulty addressing emotions directly in their child and might explain the tendency to engage in more maladpative strategies such as, encouraging avoidance and

overprotection (e.g. Barrett, Rapee, Dadds, & Ryan, 1996; Hudson & Rapee, 2001).

Although this study yielded a number of significant findings, several limitations should be acknowledged. First, parent reactions to negative emotions were assessed solely by self-report. This approach not only lends itself to the influence of social desirability, but also to the possibility of being less accurate and less objective. However, given the CCNES depicted 12 specific scenarios and parents were asked to consider each type of reaction listed on the questionnaire, the risk for inaccurate responding has been reduced (for a review see Holden & Edwards, 1989). Second, the data were based on predictive and correlational analyses that cannot permit causal conclusions. Longitudinal research is required to test causal hypotheses, particularly pertinent to examining the influence of parenting variables on childhood outcomes. Third, generalisation of the findings may not be guaranteed to families other than middles-class SES or those who are predominantly Caucasian. Fourth, the current study examined group differences on emotion socialisation practices without exploring the role of moderating and mediating variables. There is a need for future research to consider the influence of such variables in the relationship between parenting and child anxiety. Finally, there are important conceptual issues to consider when assessing ER and parenting, particularly for research on psychopathology. Weems and Pina (2010) discuss challenges associated with delineating the construct of ER from other related constructs (e.g. emotion expression/activation, clinical symptoms). Thus, future research would benefit from attending to this literature and implementing empirical designs to better discriminate these constructs.

4.5. Implications for Research, Policy and Practice

In summary, a supportive parental emotional style showed a significant and positive relationship to children's ER and was a style less adopted by mothers of anxious children. The ability for anxious children to regulate negative emotions was inferior compared to non-anxious children and this difference may be partially explained by levels of supportive parenting. As research on parenting continues to be dominated by studies involving mothers, future research is needed to delineate both joint and unique maternal and paternal influences on children's emotion functioning, particularly in the context of child anxiety where family emotion socialisation practices are demonstrating an important role. Interventions for families of anxious children is crucial because it can reduce the development of further psychopathology and assist with improving child symptomatology. Outcomes for current treatment programs for childhood anxiety might be improved by considering the findings of this research, namely (i) the benefit of parents using supportive coping strategies in reacting to children's negative emotions and (ii) equipping children with skills to better recognise and manage their emotions.

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CHAPTER THREE

SUPPORTIVE AND NON-SUPPORTIVE MATERNAL REACTIONS TO ANXIOUS CHILDREN: AN OBSERVATIONAL STUDY

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Abstract

This study examined associations between maternal emotional reactions and child and mother anxiety. Maternal supportive and non-supportive reactions were observed during a speech preparation task ($N = 89$) involving anxiety-disordered (AD) and non-AD children ages 5 to 16. Results indicated that during interactions with AD children, mothers responded with less supportive reactions in comparison to non-AD children. However, the combination of maternal and child anxiety status influenced this level of support, with non-AD mothers showing the most amount of support to children without an AD. Non-supportive parenting reactions occurred more frequently towards AD children than non-AD children, regardless of maternal anxiety. Mothers with an AD were also observed to display more non-supportive behaviours to their children in comparison to non-AD mothers. These results highlight the importance of mother and child influences on parenting behaviours. Implications in terms of AD children's emotion functioning are discussed.

Key Words: child anxiety; maternal anxiety; parenting; emotion; parent-child interactions

Supportive and Non-Supportive Maternal Reactions to Anxious Children: An Observational Study

The development and maintenance of anxiety disorders has been an important research focus over several decades (see Emmelkamp & Ehring, 2014). Motivation to better understand the contribution of environmental factors, in particular, has given rise to a growing body of research exploring the role of parenting (see Creswell, Murray, Stacey & Cooper, 2011, for a review). Observational studies on parent-child interactions show that parents of anxiety-disordered (AD) children tend to behave in a more controlling, overinvolved, critical, and less warm manner, than parents of nonclinical children (see Drake & Ginsburg, 2012; McLeod, Wood, & Weisz, 2007). In addition, certain aetiological models of anxiety emphasise a cyclical relationship between these parent behaviours, particularly overinvolvement, and child anxiety (Hudson & Rapee, 2004). Support for this relationship has been provided in experiments where child factors (e.g. anxiety symptoms) were found to elicit greater levels of adult involvement (Brunk & Henggeler, 1994; Hudson, Doyle & Gar, 2009; Williams, Kertz, Schrock, & Woodruff-Borden, 2012). This behaviour pattern is theorised to maintain child anxiety, such that repeated use of parental overcontrol prevents the child from developing adaptive coping responses and a sense of mastery over anxiety-eliciting situations (Rapee, 1997).

In experimental designs that elicit children's emotions, differences in parental behaviour between clinical and nonclinical groups are further highlighted. For instance, Hudson, Comer and Kendall (2008) found that compared to mothers in the nonclinical group, mothers of anxious children behaved more intrusively and with less warmth in

situations where the child was experiencing anger and anxiety. No differences in maternal behaviour were found for positive emotions, suggesting that child negative emotion related uniquely to parental overinvolvement. Subsequent research on emotion socialisation practices also found differences between families of anxious and nonanxious children. For negative emotion, parents of clinical children tended to be less encouraging of emotional discussions with their child, were less expressive of positive affect and at times provided less explanation of emotions (Suveg, et al., 2008; Suveg, Zeman, Flannery-Schroeder & Cassano, 2005). Including a happy scenario, Suveg and colleagues (2008) found that parents of anxious and nonanxious children did not differ in their emotion discussions and displayed equally pleasant interactions, highlighting the contribution of children's expression of negative affect on maladaptive parenting. Furthermore, in situations where mothers were observed interacting with their anxious child and a non-disordered sibling, greater levels of negative affect and criticism were expressed towards the anxious child (Lindhout, et al., 2009). Together, these findings appear to suggest that parents of anxious children have greater difficulty coping with or tolerating negative emotions in their child.

Moreover, in a sequential approach to the study of parent-child interactions, recent findings show differences in reciprocal responding of dyads involving anxious and non anxious mothers and children (Williams, et al., 2012). When an anxious child exhibited control during a task, their anxious parent was more likely to respond with aversiveness and less warmth. The opposite was observed for nonanxious dyads, with parents showing greater warmth and less aversiveness towards their child. In both groups, children reciprocated the parenting behaviours, such that anxious children responded with greater aversiveness, and nonanxious children with greater warmth. These findings not only provide further support to the notion that both parent- and

child- factors influence and perpetuate interaction styles, but also emphasise the role of parenting with respect to influencing subsequent child behaviours (e.g. avoidance). Indeed, in other clinical groups (e.g. externalising disorders), the literature supports the view that aversive parenting in response to child negativity serves to further amplify child emotion dysregulation (e.g. Scaramella & Leve, 2004; Snyder & Patterson, 1995). Thus, there is a need to extend the research on parenting behaviours as they relate to both mother and child anxiety status. Emotion dysregulation and related emotion-deficits is a growing area of concern for anxious children (see Jacob, Thomassin, Morelan, & Suveg, 2011) and has become incorporated within conceptual frameworks regarding the development, maintenance and treatment of anxiety disorders (see Aldao & Mennin, 2014, for a review). Given the importance of parenting with respect to children's developing social and emotion competencies (Eisenberg, Cumberland & Spinrad, 1998; Gottman, Katz & Hooven, 1996; Morris, Silk, Steinberg, Myers & Robinson, 2007), an examination of maternal behaviours in the context of both maternal and child anxiety status and the context of child negative emotion will assist with shedding more light on how family factors influence child functioning (Schrock & Woodruff-Borden, 2010).

Certain parental emotional styles are posited to influence childhood socio-emotional outcomes. For instance, parenting that is characterised by dismissing or punitive behaviours, are associated with children's greater difficulty regulating physiological arousal and emotional experiences (Gottman, et al., 1996), higher use of avoidant coping (Eisenberg, Fabes, & Murphy, 1996) and poorer emotion-related knowledge and skills (Denham, Mitchell-Copeland, Strandberg, Auerbach & Blair, 1997). In contrast, a supportive parental emotional style (e.g. reactions that encourage emotional expression, teaching, problem-solving and comforting) are linked to higher

levels of constructive coping in children (Eisenberg & Fabes, 1994) and better outcomes in relation to children's emotion regulation skills (Gottman, 1997; Gottman, Katz & Hooven, 1997). Moreover, longitudinal studies have shown a predictive relationship between supportive parenting and a reduced risk of children developing emotional and/or behavioural problems, higher levels of social competence and better academic functioning (see Eisenberg, et. al., 1999; Gottman, et al., 1996).

Surprisingly, few studies have examined the role of parental reactions to children's emotions among clinical populations. However, data thus far suggests that parents of children with psychopathology tend to espouse less optimal responses than parents of non-clinical children (e.g., Katz & Windecker-Nelson, 2004; Katz, et al., 2014; Suveg, et al., 2005, 2008). This has been demonstrated in research on parents of children with externalising problems (e.g. Conduct Disorder, Oppositional Defiant Disorder), who for instance are less inclined to respond to their child's negative affect with supportive behaviours, such as coaching (i.e. providing emotion information and strategies) and soothing (Katz & Windecker-Nelson, 2004). Similarly in a recent study of children with anxiety disorders, it was found that parents of clinical children reported using significantly less supportive reactions (such as problem-solving and emotion-focussed strategies) when responding to their children's negative emotions than parents of non-anxious children (Hurrell, Hudson, & Schniering, in press). This study also showed a positive association between the use of maternal supportive reactions and children's emotion regulation and a negative association between fathers' reported use of non-supportive strategies (e.g. punitive reactions, minimising emotion) and child emotion regulation and coping. In the study conducted, parent psychopathology symptoms were not associated with the parental emotional styles.

With regard to observational research on parent-child interactions in AD samples, limited attention has been given to the role of parental behaviours associated with the supportive and non-supportive reactions, as detailed above. The vast majority of studies have coded the variables of control/overprotection and warmth. Exceptions to this include the research conducted by Suveg and colleagues (2005; 2008), who found qualitative differences in emotion socialisation between parents of clinical and nonclinical children. Their results broadly showed that families of anxious children tended to be less supportive in their responses to children's negative emotion. Similarly, Hudson and colleagues (2008) from a small subset of their sample, found "in the moment" differences in the way parents reacted to discrete displays of child emotion. Specifically, parents of anxious children showed greater use of non-supportive behaviours (e.g. becoming upset, criticising, disagreeing) in response to their child's negative affect than parents of nonanxious children. This finding was consistent across parents with or without an anxiety disorder.

Taken together, data from research on self-reported and observed emotion-related parenting of AD youth, indicate an association between child negative emotion and reduced supportive strategies by their parents. Furthermore, previous research (e.g. Hudson, et al., 2008) indicates that the use of non-supportive parenting (i.e. more negative reactions) is used more frequently amongst parents of AD youth, but further study is needed to clarify whether these reactions are related to parental anxiety status. Indeed, research on the association between parental anxiety and parenting reactions in general (e.g. negativity, control) has so far produced inconsistent results (Bogels & Brechman-Toussant, 2006; McLeod, et al., 2007). Therefore, further study is needed on the relationship between these variables to help clarify the mixed findings. Moreover, experimental designs that involve emotionally-charged situations (e.g. parent-child

discussions) might be better at detecting parental differences (Hudson, et al., 2008; Whaley, Pinto, & Sigman, 1999) compared to nonemotionally-charged situations (e.g., 'risky' play; Turner, Beidel, Roberson-Nay, & Tervo, 2003), as they appear to elicit maladaptive parenting in those with psychopathology (Woodruff-Borden, Marrow, Bourland, & Cambron, 2002).

Given the literature on supportive and non-supportive parental reactions to children's emotions (e.g. Eisenberg, et al., 1998; Gottman, et al., 1996), both aspects of parenting are also likely to have repercussions for the socio-emotional development of children with an anxiety disorder. This is particularly relevant, given both the high rate of co-morbidity among childhood anxiety disorders and the increased risk for developing further psychopathology (Kendall, et al., 2010; Kendall, Safford, Flannery-Schroeder, & Webb, 2004; Pine, et al., 1998). Therefore, identifying parenting reactions that could be awry in families of anxious children and associations with parental anxiety, may inevitably lead to improved treatment outcomes and the prevention of related emotional difficulties (e.g. clinical depression). Moreover, in other clinical groups (e.g. AD/HD), evidence suggests that teaching parents to respond more supportively to children's emotions can aid with improving both child emotion regulation and their diagnostic symptoms (e.g. Herbert, et al., 2013). The scope to extend this line of inquiry to samples of anxious youth is promising, since preliminary data suggests that children with poorer emotion regulation tend to respond less well to treatment (Hudson & Hurrell, 2014). This would suggest then that targeting parenting in the process of improving AD children's emotion functioning could assist with ameliorating symptoms and their overall prognosis.

The Current Study

The aim of the current study was to investigate the influence of child or mother anxiety status on parenting behaviours during an anxiety-eliciting task. The study was comprised of children (anxious / non-anxious) and their mothers. Mothers' anxiety status was also determined. It was expected that maternal emotional styles would discriminate the groups based on anxiety status, such that higher levels of non-supportive parenting would be observed for dyads where either the child or mother was anxious, than for dyads where both members were anxiety-free. It was further expected that higher levels of supportive parenting would be found in the non-anxious dyads compared to dyads where either mother or child was anxious.

Method

Participants

Participants in the study were 89 children between the ages of 5 and 16 years and their biological mother. The sample was primarily of middle-class socioeconomic status (SES) and the ethnicity predominantly Caucasian. The anxious child group (25 clinic-referred; 16 nonclinic-referred) consisted of 16 girls and 25 boys with a mean age of 10.05 years (SD = 2.52). The clinic-referred children presented with their parents for treatment at the Emotional Health Clinic, Macquarie University, Sydney. The non-clinic referred anxious children were recruited through local newspaper and school advertisements targeting children and parents who were suffering from anxiety. The anxious parent group consisted of 48 mothers. Trained postgraduate clinical psychology students and Clinical Psychologists assessed the children using the semi-structured clinical interview, the Anxiety Disorders Interview Schedule for DSM-IV - Child and

Parent Version (ADIS-IV-C/P: Silverman & Albano, 1996). Non-clinic referred children and mothers were assessed over the telephone with the ADIS-IV-P. Administration of the ADIS-P over the telephone has been shown to be a valid method of diagnosing disorders (Lyneham & Rapee, 2005). All diagnosticians received supervision for each assessment. Research from our clinic has demonstrated excellent reliability for the ADIS with interrater agreement of kappa = 1.00 for an overall anxiety disorder diagnosis and between kappa = .80 and kappa = .93 for specific anxiety diagnoses (Lyneham, Abbot, & Rapee, 2007). All parent interviews were recorded (audio or video) and 25% were selected at random and scored by a second clinician for the purpose of diagnostic reliability. Results yielded excellent inter-rater reliability (k = .88) for mother's primary diagnosis. Children were assigned a diagnosis if either the parent or child reported that symptoms were causing significant interference in functioning and if the Clinical Severity Rating (CSR) of 4 or more was assigned. Based on criteria set out in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994), the interviews resulted in the following principal diagnoses for children of the anxious group: generalised anxiety disorder 50%, social phobia 19%, separation anxiety disorder 19%, obsessive-compulsive disorder 2% and specific phobia 2%. Fifty two percent of the children were diagnosed with an additional anxiety disorder, the most common being social phobia (10%). Nine children also met criteria for an additional diagnosis other than anxiety: attention deficit / hyperactivity disorder (ADHD; n = 6), oppositional defiant disorder (ODD; n = 2) and mood disorder (n = 1). Mothers of children in both anxious and non-anxious groups were also assessed for the presence of a clinical anxiety disorder using the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown, Di Nardo, & Barlow, 1994). This semi-structured interview assesses

diagnostic criteria of all anxiety disorders and additional commonly co-occurring disorders according to the DSM-IV (American Psychiatric Association, 1994). The ADIS-IV demonstrates good to excellent inter-rater reliability of anxiety diagnoses (Brown, et al., 2001). Forty-two (47%) of mothers of anxious children met criteria for an anxiety disorder and 27 (30%) of mothers of nonanxious children met criteria for an anxiety disorder. For mothers of the anxious group, the following principal diagnoses included: generalised anxiety disorder 33%, social phobia 29%, panic disorder with agoraphobia 8%, anxiety disorder not otherwise specified 4%, agoraphobia without panic 4% and specific phobia 2%. Forty eight percent of mothers were diagnosed with an additional anxiety disorder, the most common being generalised anxiety disorder. Eight mothers also met criteria for an additional diagnosis other than anxiety: bipolar disorder (n = 4), dysthymia (n = 2), adjustment disorder (n = 1) and hypochondriasis (n = 1).

The nonanxious child group consisted of 25 girls and 22 boys with a mean age of 9.74 years (SD = 3.01) who had never sought treatment from a mental health professional. The nonanxious parent group consisted of 41 mothers. Seven percent met criteria for a mood disorder. Non-anxious children did not meet diagnostic criteria for an anxiety disorder based on the ADIS-IV and scored within the normative range on both the Spence Child Anxiety Scale – Child and Parent Versions (SCAS-C/P). Six percent of nonanxious children met diagnostic criteria for ADHD and 2% for ODD. Nonclinical families were recruited from the community via advertisements in local newspapers and school newsletters. To ensure comparable SES, nonclinical families were recruited within the same geographical area as the clinical group.

Task

Mothers and children were observed interacting during a speech preparation task. They were seated together in a room and the experimenter read the following instructions prior to commencing the task:

To the child: "I'm going to ask you to prepare a (two or three) minute speech about anything you like. This is to see how good you are at talking in front of others. You can talk about anything – your favourite hobby, favourite film, something you did recently, a day out with your family, holiday or something to do with school. You can change the topic during the speech if you want. So that you have lots of things to talk about, I'm going to give you three minutes to prepare before I ask you to give the speech. When I come back I'm going to ask you to stand up and give the speech".

To the mother: "This is a test of (child's name)'s presentation skills and social ability. I want to see how effective she/he is at preparing a talk and presenting it to an audience. (Mother's name) I would like you to sit here for support. Most kids find it a bit hard to get going on deciding what to talk about. You can help (child's name), but only if you think she/he really needs it."[2]

After reading the instructions, the experimenter left the room for 3 minutes while the child prepared their speech. After the time had elapsed, the experimenter returned and asked the child to stand up and present their speech. Children aged 7 to 12 years were provided 2 minutes to present their speech, and children aged between 13 and 16 years were asked to speak for three minutes. The entire task was videotaped.

Measures

Observation. Parental support during the 3-minute speech preparation task was coded on ten global scales, adapted from an emotion-coaching parenting coding system

[2] Instructions were adapted from the tangram task used in Hudson and Rapee (2001).

that was reported in Baker, Fenning and Crnic (2011). The scales load onto two factors that represent supportive and non-supportive parenting behaviours. The supportive scales consisted of five scales and assessed the degree of maternal support during the interaction. The supportive scales were (a) amount of structuring that the mother provided (e.g. teaching, insight and problem-solving), (b) general sensitivity and acceptance of the child (c) validation and encouragement of the child's emotions and ideas, (d) enthusiasm (interest) for the task, and (e) the amount of warmth, intimacy and affection. The overall supportive score was based on the sum of the above five scales. The non-supportive scales were (a) derogation of the child, (b) intrusiveness, (c) minimisation and/or discouragement of the child's emotion or ideas, (d) detachment / disinterest (e) maternal distress (negative emotion). For the purpose of this study, the last scale of *distress* as created to capture additional non-supportive reactions. Further rationale for adding this item includes the recognition that items measuring parental distress reactions are included in a well-validated measure of parental emotional styles, the Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, and Bernzweig, 1990) and forms part of the CCNES' 'Non-supportive' scale. The ratings for the each scale were summed to provide an overall non-supportive score. In the current study, the Cronbach alpha coefficients were .90 and .77 for the Supportive and Non-supportive subscales, respectively. These reliability results are comparable to the alphas reported in Baker and colleagues (2011).

Coders were psychology postgraduate students trained in the coding system and were blind to the child's diagnosis. Coders rated each dimension on a five-point scale from 1 (*none*) to 3 (*moderate*) and 5 (*high*). Children's distress levels were also rated using the same scale and was included as a measure of observed emotion regulation. Coders were instructed to watch each video twice before coding the interaction. A

random sample of n (20%) was subject to an interrater reliability analysis, resulting in ICC = .74, $p < .01$ for the supportive scale and $\alpha = .80$, $p < .01$ for the non-supportive scale.

Questionnaires. Mothers and children completed questionnaires to further establish the clinical nature of the sample and to provide further support for the distinction between the anxious and nonanxious groups. The Spence Children's Anxiety Scale, parent and child Report (SCAS; Spence, 1998) was used to measure symptoms of child anxiety. This measure contains 38-items that load on the following 6 subscales: Generalised Anxiety Disorder; Obsessive-Compulsive Disorder; Specific Phobia; Panic and Agoraphobia; Separation Anxiety; and Social Anxiety. The measure contains an additional six positive 'filler items' to reduce negative response bias. Respondents indicate the frequency with which each symptom occurs on a 4-point scale from 0 (*never*) to 3 (*always*). Sound psychometric properties have been reported, including adequate test-retest reliability, high internal consistency and high concurrent validity (Nauta, et al., 2004; Spence, 1998, Spence, Barrett, & Turner, 2003). Internal consistency for the total SCAS score in this study was excellent for mother report (Cronbach's alpha .95) and good for child report(.88) . Mothers also completed the Depression Anxiety Stress Scales-21 (DASS; Lovibond & Lovibond, 1995) he DASS-21 to measure symptoms of depression, anxiety and stress. Mothers rated each of the 21 items using a 4-point Likert scale from 0 (*not at all*) to 3 (*most of the time*). The DASS-21 has been assessed as a reliable and valid instrument in both community and clinical samples, with high internal consistency, and good convergent and discriminant validity (Antony, Bieling, Cox, Enns & Swinson, 1998; Clara, Cox & Enns, 2001; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). For the current study, internal

consistency was excellent (Cronbach's alpha of .93, .88 and .88, for depression, anxiety and stress subscales, respectively).

Procedure

The procedures in this study were approved by the Macquarie University Human Research Ethics Committee. Informed written consent was obtained from parents and adolescents, and verbal assent from children 12 and under. Nonclinical families completed self-report questionnaires. Mothers were then seated with their child in a room while the experimenter read aloud the instructions for the speech task. Mothers were observed interacting with their child during the speech preparation task. Following the task, children left the room and mothers were administered the adult diagnostic interview. All clinic-referred families went on to receive treatment at the clinic. Nonclinical families were paid $50 for participating in the study.

Data Analysis

A series of t tests were used to examine group differences on the descriptive measures and for child distress scores. The critical alpha was set at $p < 0.01$ in order to protect against a possible Type 1 error. Two-way between-group analyses of variances (ANOVAs) were conducted to examine the impact of child and maternal anxiety status (present/absent) on supportive and non-supportive reactions. *F* tests represent Wilks' lambda multivariate statistic. Measures of effect size were obtained for the ANOVAs and are reported. Interpretation of effect sizes are based on Cohen's (1998) criteria: 0.01 (small effect), 0.06 (medium effect) and 0.14 (large effect).

Results

Descriptive Measures

There were no differences in mean age between anxious and nonanxious children, $t(87) = -.512$, $p > .01$ (anxious $M = 10.05$ years, $SD = 2.52$, nonanxious $M = 9.74$ years, $SD = 3.01$). The age of children from anxious and nonanxious mothers also did not differ $t(87) = 1.12$, $p > .01$ (anxious $M = 9.58$ years, $SD = 2.80$, nonanxious $M = 10.24$ years, $SD = 2.75$). Results of a Chi-square test for independence (with Yates Continuity Correction, used to reduce the area in approximation) showed that children's gender did not differ between the anxious and nonanxious groups, $\chi^2(1, N = 89) = .13$, $p > .05$ (anxious = 53.2% male, 40.5% female; nonanxious = 46.8% male, 53.2% female). There were no significant differences on the demographic measures of family income, ethnicity (the sample was predominantly Caucasian) or family composition between the anxious and nonanxious groups (see Table 1). There were also no significant demographic differences between children in the clinic-referred and non-clinic referred groups ($p > .05$).

Table 2 displays the mean scores for child and mother measures of symptomatology for the anxious and nonanxious groups. Anxious children were found to have significantly higher scores on the SCAS than nonanxious children. Results of the DASS were significantly higher for reported symptoms of depression, anxiety and stress for anxious mothers compared to nonanxious mothers. T-tests revealed that there was no significant difference between the clinic-referred and nonclinic-referred anxiety-disordered children on the mother and child SCAS reports, $t(37) = -2.27$, $p > .01$ and $t(36) = -.014$, $p > .01$.

Table 1.
Demographic variables across groups

	Anx Mother		Nonanx Mother	
	Anx Child	Nonanx Child	Anx Child	Nonanx Child
Family Income (%)				
$1-20,000	5	8	0	5
$20,001-40,000	19	24	5	14
$40,001-80,000	33	40	26	48
$80,001or more	43	24	68	33
Family Composition (%)				
Married	76	56	85	76
Single/divorced	10	22	0	0
Other	14	22	15	24

Note. Anx = anxious; Nonanx = nonanxious.

Effects of child gender and age on maternal reactions.

T-tests revealed that maternal supportive and nonsupportive reactions did not differ between boys and girls, $t(86) = -.974$, $p > .05$ (boys $M = 15.66$, $SD = 4.80$, girls $M = 16.61$, $SD = 4.28$) and $t(86) = .693$, $p > .05$ (boys $M = 10.23$, $SD = 3.79$, girls $M = 9.76$, $SD = 3.17$), respectively. Age was also unrelated to supportive and nonsupportive reactions, with results showing nonsignificant correlations ($p > .01$).

Table 2.
Means and standard deviations for questionnaire measures across groups

	Anx Mother				Nonanx Mother			
	Anx Child (n = 21)		Nonanx child (n = 24)		Anx Child (n = 17)		Nonanxchild (n = 21)	
Questionnaire	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
SCAS								
Child	34.90[a]	16.03	22.21[b]	14.89	36.53[a]	19.76	20.86[b]	10.71
Mother	34.67[a]	15.64	11.61[b]	7.42	39.06[a]	21.15	13.76[b]	8.51
DASS21								
Depression	5.86[a]	4.76	9.96[a]	5.61	2.50[b]	2.42	2.84[b]	3.27
Anxiety	7.72[a]	5.20	9.60[a]	5.04	2.50[b]	2.24	1.81[b]	2.02
Stress	10.30[a]	3.79	12.92[a]	3.86	6.10[b]	4.01	5.20[b]	3.00

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). SCAS = Spence Children's Anxiety Scale Scales; DASS21 = Depression, Anxiety and Stress Scales. Anx = anxious; Nonanx = nonanxious.

Comparisons Between Groups on Supportive and Nonsupportive Reactions

The means scores for the supportive and non-supportive reactions across groups are presented in Table 3.

Maternal supportive reactions. There was a statistically significant main effect for child group, $F(1, 85) = 14.63$, p = .000, partial eta squared = .15, with results showing that the mean score for nonanxious children ($M = 17.51$, $SD = 4.12$) was significantly higher than the mean for anxious children ($M = 14.31$, $SD = 4.65$). There was no significant main effect for mother group, $F(1, 85) = 2.54$, p = .115, partial eta squared = .03. The Child Group x Mother Group interaction effect was significant, $F(1, 85) = 6.62$, p = .012, partial eta squared = .07. Results, seen in Figure 1, indicated that

mothers without an anxiety disorder displayed significantly fewer supportive reactions in dyadic situations involving anxious children compared to situations with nonanxious children. The highest levels of supportive parenting were observed between nonanxious mothers and nonanxious children.

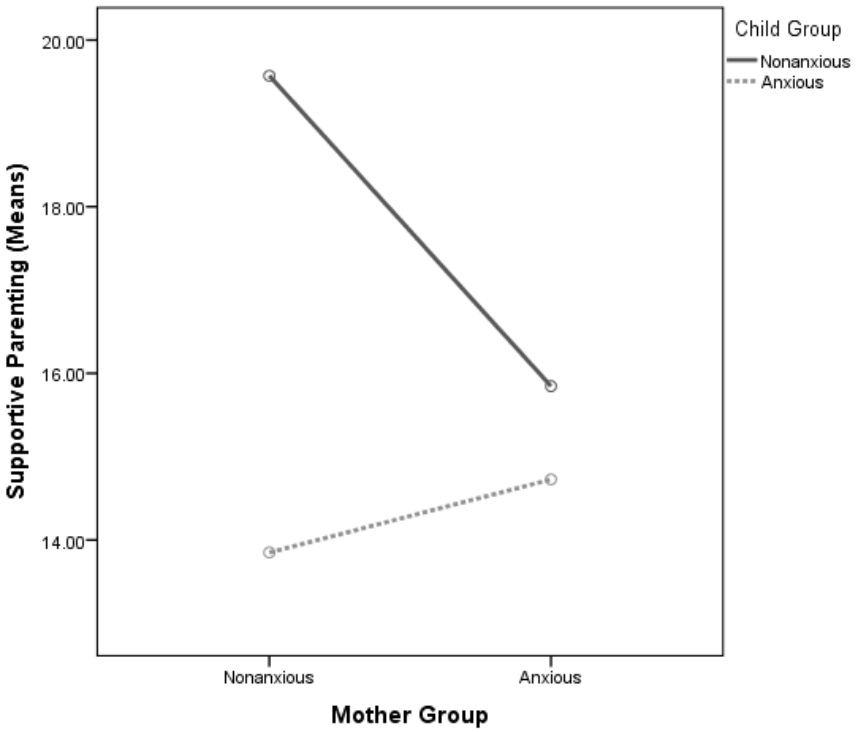

Figure 1. Estimated marginal means for maternal supportive parenting during interactions with anxious and nonanxious children.

Maternal nonsupportive reactions. A significant main effect was found for child group, $F(1, 85) = 9.68$, $p = .003$, partial eta squared = .10. As seen in Figure 2, this result suggests that mothers of anxious children were significantly more non-supportive ($M = 11.17$, $SD = 3.36$) than mothers of nonanxious children ($M = 9.15$, $SD = 3.46$), regardless of their own anxiety status. A significant main effect was also found for mother group, $F(1, 85) = 12.20$, $p = .001$, partial eta squared = .13, with anxiety-disordered mothers displaying greater levels of nonsupport ($M = 11.19$, $SD = 3.75$) than

nonanxiety-disordered mothers (*M* = 8.83, *SD* = 2.83). The Child Group x Mother Group interaction effect was not significant, *F*(1, 85) = 6.57, p = .427, partial eta squared = .007.

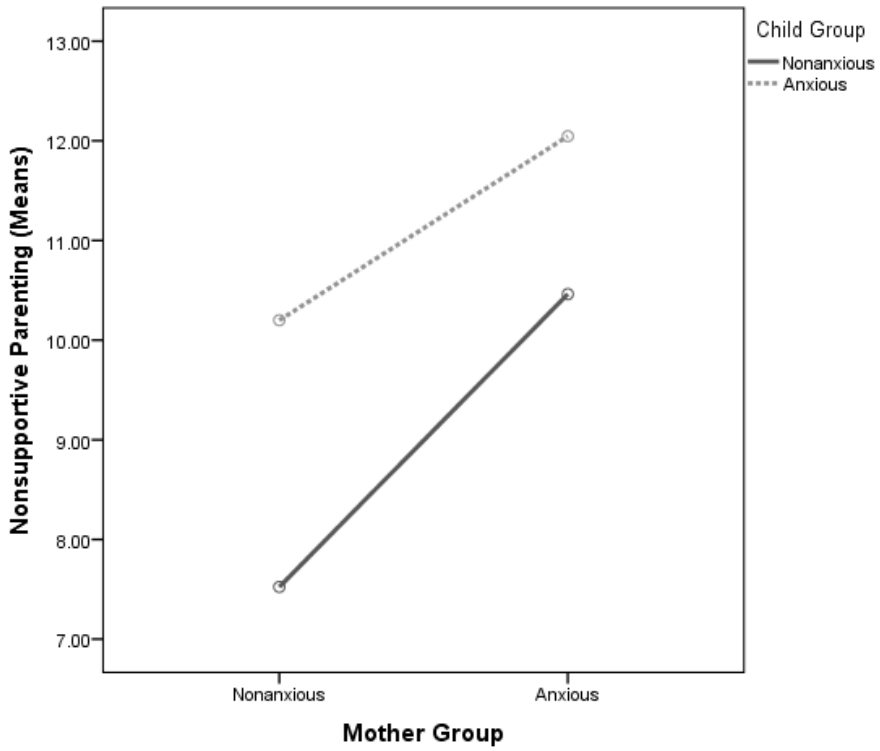

Figure 2. Estimated marginal means for maternal nonsupportive parenting during interactions with anxious and nonanxious children.

Table 3
Mean supportive and non-supportive reactions across groups

	Anx Mother				Non-Anxious Mother			
	Anx Child		Nonanx Child		Anx Child		Nonanx Child	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Factor								
Supportive	14.73	5.23	15.85	3.33	13.85	3.99	19.57	4.14
Non-supportive	12.05	3.82	10.46	3.59	10.20	2.50	7.52	2.54

Note. Anx = anxious; Nonanx = nonanxious.

Child Distress

Children were compared on a code that measured indicators of child negative emotion and regulation. Significant group differences were observed, with anxious children exhibiting higher overall distress levels ($M = 3.10$, $SD = 1.03$) than non-anxious children ($M = 2.04$, $SD = 1.06$), $t(87) = -4.731$, $p < .01$. This provides some evidence that the task elicited sufficient anxiety to measure effects of child negative emotion on parenting. Child distress was also entered as a covariate in the two-way between group ANOVAs and this did not alter the results for the main analyses.

Discussion

The present study investigated the impact of child and maternal anxiety status on maternal emotion socialisation practices. This study design allowed for the unique examination of both child and mother influences on maternal reactions. Regarding non-supportive reactions, both child and mother effects were demonstrated. Consistent with our hypothesis, non-supportive maternal reactions were higher in the dyads where either the child or mother had an anxiety disorder. That is, when anxiety was present, mothers tended to display more negative behaviours (e.g. criticising, correcting, sarcasm), were more likely to express negative emotion (e.g. annoyed, anxious, irritable), showed higher levels of intrusiveness (e.g. talking over the child, appearing on their own agenda), displayed poorer quality of engagement with the child and/or around the task (e.g. more detached or less interested) and were more inclined to minimise or discourage their children from expressing their thoughts or emotions. This finding is similar to that reported by Hudson and colleagues (2008) who showed that

when anxious children displayed negative emotion, their parents were more likely to respond with non-supportive behaviours (e.g. criticalness, dismissive) compared to parental responses towards nonanxious children. However, in the study by Hudson, effects for parental anxiety on responses to child emotion were not found. The current results further showed that child emotion for the anxious group was significantly more negative than for children of the control group, as indicated by higher levels of expressed anxiety, apprehension, irritability or related distress. Child anxiety status and expression of negative emotion has been observed in several other studies as having an influence on maladaptive parental reactions (e.g., Hudson, et al., 2008; Suveg, et al., 2005; Williams, et al., 2012).

With regard to maternal anxiety status and maladaptive parenting, the associations in the literature have been less clear (e.g. Whaley, et al., 1999). The current study has shed some light on this by showing that maternal anxiety was associated with non-supportive parenting practices. This suggests that irrespective of the presence of anxiety in children, mothers with clinical anxiety may be more disposed to behaving in non-supportive ways (e.g., less engaged, more negative) during emotionally-charged situations. It is plausible that this reflects their own emotion regulation capacity, and hence a diminished ability to cope with their child's expression of negative affect. Whilst the process underlying this effect is not yet fully clear, the current finding that maternal anxiety influenced non-supportive parenting is consistent with theories presented in the literature (e.g. Cheron, Ehrenreich, & Pincus, 2009; Tiwari, et al., 2008). For instance, Tiwari and colleagues (2008) speculate that experiential avoidance may be a mechanism through which parents of anxious children, particularly those with a current anxiety disorder, engage in maladaptive strategies. They propose that behaviours, such as intrusiveness, control and withdrawal during anxiety-eliciting

situations, might stem from difficulties tolerating their own emotions (e.g. fear, frustration) that arise from observing distress in their children. This view is consistent with the empirical findings, showing that intrusive parenting tends to occur more frequently during situations involving child negative affect (as opposed to positive affect) (e.g., Hudson, et al., 2008; Suveg, et al., 2008). Thus, anxious mothers appear to feel uncomfortable during displays of child negative affect and are consequently prone to respond with more negative behaviours (e.g. criticism, intrusiveness) or alternatively attempt to withdraw / disengage for the purpose of self-regulation. Indeed, subjective data suggests that anxious mothers report feeling more distressed when observing their children engage in threatening situations (Turner, et al., 2003). This may have also been the case for the current study, since anxious children displayed more negative emotion when participating during the anxiety-eliciting task. However, since not all research has observed an effect for maternal anxiety status on maladaptive styles of parenting (e.g. Gar & Hudson, 2008; Turner, et al., 2003), it could be that the degree of distress is dependent upon the situation they are engaged in with their child (e.g. watching them complete a difficult task versus responding to an emotional state) and/or the nature of assessment (e.g. coding systems). Nonetheless, the current findings point to the possibility that anxiety-eliciting situations, for either non-anxious or anxious children, evoke greater levels of non-supportive reactions from mothers who have an anxiety disorder.

When supportive maternal reactions were examined, a significant main effect showed that mothers displayed more supportive parenting towards nonanxious children than children with an anxiety disorder. However, the occurrence of maternal support was also dependent on mother anxiety status. Specifically, nonanxious mothers tended to be significantly less supportive during interactions with anxious children in

comparison to their interactions with children who were anxiety-free and anxious mothers interacting with anxious and nonanxious children. This result suggests that the presence of anxiety in children may elicit a less sensitive/accepting, warm, validating or enthusiastic interaction style by their mothers. The mothers were also less inclined to problem-solve or show insight around the child's emotional state and attempt at preparing for the anxiety-provoking task. The finding that maternal support in nonanxious mothers was lower when they interacted with an anxious child is consistent with reciprocal models of parent-child behaviour patterns (e.g. Williams, et al., 2012). It could also suggest that mothers who do not have an anxiety disorder find it more difficult to relate to their child's anxiety. Nonetheless, this result may help to explain processes involved with the development and maintenance of emotion-related deficits in anxious children. That is, expression of child negativity (e.g. apprehension, anxiety) may elicit less supportive reactions from parents. This reduced support may in turn diminish the child's ability to manage their emotional experience and expression during difficult situations, thus leading to further emotion dysregulation and maladaptive coping in anxious situations. This marked drop in supportive parenting towards anxious children by nonanxious mothers is in need of further exploration. Perhaps nonanxious mothers have particular difficulty maintaining supportive reactions (e.g. warmth, validation, problem-solving) when their AD child is expressing negative emotion. Yet, they do not appear to respond with increased negativity, as there was no effect for this for the non-supportive reactions. Another possibility is that nonanxious children by virtue of their less negative disposition prompted a much more positive interaction style by nonanxious mothers and thus inflated the mean difference. Indeed, consistent with our hypothesis, interactions between the nonanxious dyads were found to be the most pleasant in the study and showed the highest levels of supportive parenting. This

finding is consistent with recent research by Williams and colleagues (2012) who found a more positive interaction style between nonanxious parent and child dyads, which included higher displays and reciprocity of warmth. They also showed that more negative interaction patterns occurred between the anxious dyads, with less warmth and greater aversiveness (e.g. hostility/rejection).

Together, the findings of the current study show differential emotion-related reactions for mothers according to child and maternal anxiety status. The findings further support reciprocal models of anxiety development and maintenance (e.g. Hudson & Rapee, 2004), which show that parental behaviours can change as a function of child anxiety. For more negative parenting styles (i.e. non-supportive reactions), the presence of anxiety anywhere in the dyad had an effect. This means that for children who are anxiety-free, the occurrence of non-supportive parenting may tend to be lower in comparison to AD children. However, having an anxious mother suggests that they could still be disposed to receiving more negative reactions during emotionally-charged situations. In contrast, positive displays of parenting (i.e. supportive reactions) are more likely to occur in families when both mother and child are nonanxious. Though, this support may be markedly reduced when the child is anxious, and especially so, if the mother is nonanxious.

The implications of these findings in terms of children's developing emotional competencies should be highlighted. First, this study has revealed a pattern of parenting in response to AD children's emotions that are sub-optimal. Based on literature within the field of developmental and family psychology (e.g. Denham, et al., 1997; Eisenberg et al., 1996; Gottman, et al., 1997), the combination of reduced supportive and elevated non-supportive parenting reactions, is a concern and places anxious children at an ongoing risk of emotion regulation deficits and co-morbid difficulties, such as mood

disorders and social impairments (e.g. Jacob, et al., 2013; Kerns, Comer, & Zeman, 2014). Second, the findings of this research are consistent with a recent study showing that parent-reported reactions to children's negative emotions were significantly less supportive for AD children (Hurrell, et al., in press). Thus, the findings from the self-report study and the current research provide a level of convergent evidence for emotion-related parenting styles in parents of AD children. Together with previous data on related emotion socialisation research (e.g. emotion discussions; Suveg et al., 2005) and maladaptive parenting behaviours (e.g. overinvolvement; Hudson & Rapee, 2001), these results add to the aetiological and maintenance models on childhood anxiety that encompasses the role of the family (e.g. Drake & Ginsburg, 2012; Hudson & Rapee, 2004). Lastly, treatment of child ADs over recent years has increasingly involved components of family-based cognitive behavioural therapy (FCBT; see Drake & Ginsburg, 2012 for a review). Research on the efficacy of FCBT has been demonstrated (see Barmish & Kendall, 2005), but results have generally been mixed when FCBT was compared to standard child-only CBT (e.g. Bodden, et al., 2008; Spence, Donovan, & Brechman-Touissant, 2000; Suveg, et al., 2009). It appears, however, that when active parental involvement is included in the treatment process (e.g. parents encouraging their child to face feared situations), outcomes improve (see Manassis, et al., 2014). Thus, there may be scope to enhance FCBT by incorporating emotion-related parent training and education as part of improving responses to children's emotions.

Whilst this research has furthered the understanding of child and maternal influences on emotion socialisation, there are some potential limitations. Importantly, paternal reactions were not examined and previous work has shown differential responses according to parent gender (e.g. Hudson, et al., 2008; Hurrell, et al., in press; Suveg, et al., 2008). Thus, there could be important effects for father anxiety status and

emotion socialisation that remain unidentified. Future research would benefit from exploring the role of paternal behaviours in the aetiology and maintenance of childhood anxiety. This study also included children with a relatively wide age range (5-16), thus developmental effects on parent-child interactions should be considered in future studies. The sample was homogenous with respect to SES (middle-class) and ethnicity (Caucasian), thus generalisation of the findings may not be guaranteed. Finally, observation research within laboratory settings tend to be contrived and may have exerted an influence on participant behaviours. The experimental task may also have provided just one perspective of parent-child interactions that may not necessarily reflect typical interactions outside of the laboratory. Future research is encouraged to replicate and extend aspects of this study, particularly the influence of parental anxiety on supportive and non-supportive reactions. This study did not assess maternal emotion regulation and this may be an important area for further investigation.

In summary, the current study provided a unique examination of maternal and child influences on maternal emotional socialisation practices. The findings demonstrated that the presence of child anxiety can elicit non-supportive parenting behaviours and that anxious mothers are more inclined to respond in a non-supportive manner. For maternal supportive parenting, the results showed a combined effect for maternal and child anxiety status that influences the degree to which mothers' express positive behaviours. These results are useful in guiding theoretical models concerned with the aetiology and maintenance of childhood anxiety. Treatment providers will also benefit with regard to a greater awareness and identification of mother and child influences on parental responses to child emotion.

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CHAPTER FOUR

PARENTAL META-EMOTION PHILOSOPHY AND EMOTION COACHING IN FAMILIES OF CHILDREN AND ADOLESCENTS WITH AN ANXIETY DISORDER

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Abstract

This study examined differences in parental awareness and coaching of emotions between families of anxiety disordered (AD; n = 74) and non-AD (n = 35) children ages 7 to 15 and also investigated associations between child anxiety and children's emotion regulation (ER). Parents were interviewed about their meta-emotion philosophy and completed questionnaires that assessed their attitudes towards emotion coaching and children's ER. Families (child, mother and/or father) also discussed a recent family conflict. Results indicated that parents of AD youth were less aware of their own emotions and their children's emotions, although this varied by emotion type. Parents of AD youth were also less coaching of their children's emotions than parents of non-AD youth, on both the interview and observation measures. In contrast, no group differences emerged on parent reported attitudes towards emotion coaching. AD youth were identified as having significantly greater difficulty managing a range of emotions compared to non-AD youth. Implications for the role of parental meta-emotional philosophy and related behaviours on AD youth's emotion functioning are discussed.

Keywords: childhood anxiety, emotion regulation, parenting, emotion socialisation

Parental Meta-Emotion Philosophy and Emotion Coaching in Families of Children and Adolescents with an Anxiety Disorder

Research has identified significant emotional competence deficits among youth with anxiety disorders (e.g. Suveg & Zeman, 2004; Suveg et al., 2008). For example, compared to youth with no psychopathology, children and adolescents with anxiety disorders are found to have greater difficulty regulating a range of negative emotions (Hurrell, Hudson & Schniering, in press; Suveg & Zeman, 2004), report less confidence with and understanding of how to modify emotional states (Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004), experience emotions more intensely (Suveg & Zeman, 2004) and are rated by parents as generally more emotionally labile and negative (Hurrell, et al., in press; Suveg & Zeman, 2004). Such deficits have been identified in the literature as risk factors for poor socioemotional adjustment and increased symptomatology (Cicchetti, Ackerman & Izard, 1995; Zeman, Shipman, Suveg, 2002). Recent empirical evidence for this risk has been found in anxious children, with poor emotion regulation (ER) relating to greater impairments in social functioning and other mood states (Jacob, Suveg, & Whitehead, 2013; Kerns, Comer, & Zeman, 2014). The present study sought to examine parenting factors that have been shown to relate to ER in children among normative samples (Gottman, Katz & Hooven, 1996), specifically, the study of parental beliefs regarding emotions and emotion coaching behaviours. Surprisingly, no known research to date has studied this in parents of clinically anxious children.

Emotion Socialisation in Families of Anxious Children

To date, the study of emotion socialisation processes in families of AD children have involved parent-child emotion discussions (Hudson, Comer & Kendall, 2008; Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005; Suveg et al., 2008), parental reactions to children's negative emotions (Hurrell et al., in press) and related parenting styles, such as overprotection (Chorpita & Barlow, 1998; Hudson & Rapee, 2001; Wood, 2006). Findings have shown, for example, that overprotective/controlling behaviours are observed more frequently in parents of anxious children (Hudson & Rapee, 2001; 2002; Siqueland, Kendall, & Steinberg, 1996) and are strategies thought to help with dampening down or preventing child distress. Similarly, when discussing emotional events with their children, parents of AD youth tend to engage in more avoidant behaviours (e.g. change topics), provide less explanatory information about emotions and interact in generally less pleasant ways (Suveg et al., 2005, 2008). Parent-reported reactions to children's expressions of negative emotion are also found to be less supportive, with mothers of AD children using significantly fewer emotion-focussed (e.g., comforting and soothing) and problem-focussed (e.g. problem-solving) strategies (Hurrell, et al., in press). Likewise, in an observational study on parent-child interactions, Hudson and colleagues (2008) found that mothers of AD children showed greater use of non-supportive parenting (e.g. criticism and talking over the child) and less use of supportive parenting (e.g. warmth) when responding to their child's negative emotions. Taken together, research to date indicates that parents of anxious children show less supportive responses to their children's displays of negative emotion and further cope by using maladaptive parenting strategies (e.g. overcontrol/intrusiveness). Thus, AD youth appear to be exposed to a qualitatively different family emotion environment than non-AD children, which may accentuate emotion regulation (ER)

vulnerabilities and subsequent internalising symptoms (Kerns et al., 2014; Zeman et al., 2002).

Parents of AD youth may engage in poorer emotion socialisation for a range of reasons involving both child and parent factors (see Morris, Silk, Steinberg, Myers, & Robinson, 2007 for a review). For instance, higher levels of stress (Nelson, et al., 2009), psychopathology (e.g. anxiety and depressive symptoms; Cummings, George, Koss, & Davies, 2013; Suveg et al., 2005; Woodruff-Borden, Marrow, Bourland, & Cambron, 2002) and associated emotion deficits (e.g. difficulty tolerating negative emotions; Gross & Muñoz, 1995; Hoffman, Crnic, & Baker, 2006) are common factors among parents who are found to be less responsive to their children's emotions and who espouse atypical emotion interactions. Parents of AD children often score higher on measures of psychopathology, and rates of anxiety disorders in particular, are substantial (e.g., Hettema, Neale, & Kendler, 2001; Last, Hersen, Kazdin, Francis, & Grubb, 1987). This might suggest that AD children are inherently at greater risk of receiving disrupted ER socialisation from their parents compared to non-AD children. Child-specific factors, such as temperament and frequent emotional negativity (Kagan, Reznick, & Gibbons, 1989; Morris, et al., 2002) are also important considerations and appear to play a role with eliciting sub-optimal parenting. This has been observed in parent-child interaction studies, with non-supportive parental reactions tending to follow children's negative affective displays (e.g., Morelen and Suveg, 2012; Hudson, Doyle, & Gar, 2009). In addition, longitudinal research has shown a similar interplay between child negative emotion and parenting, with child negativity predicting non-supportive parental reactions overtime (Eisenberg, et al.,1999).

Parental Meta-Emotion Philosophy

Parental Meta-Emotion Philosophy (PMEP; Gottman, Katz & Hooven, 1996) is purported to influence the ways in which children are socialised to experience and express emotions. This philosophy has informed the understanding of typical child emotion functioning, but may also be helpful with improving the understanding of child anxiety and parenting. Gottman and colleagues (1996) defined PMEP as an organised set of feelings and thoughts that parents have about their own emotions and one's children's emotions. Data on PMEP suggest that parents vary in their approach to their children's emotions, with styles that predominantly include an emotion-coaching or emotion-dismissing philosophy (Gottman, Katz, & Hooven, 1997). Parents high in emotion-coaching view negative emotion in their children as an opportunity for closeness and teaching. They are more aware of emotions in themselves and their children, tend to validate and label emotions and support their children with strategies to cope in emotionally arousing situations. In contrast, parents who are emotion-dismissing view negative emotions as harmful and tend to ignore, dismiss or try to change negative emotions as quickly as possible.

Children of parents who are high in emotion-coaching show evidence of good psychosocial adjustment and peer relations. They tend to have better physiological and emotion regulation abilities, fewer externalising and internalising symptoms, higher self-esteem, less physiological stress and higher levels of academic achievement (Gottman, et al., 2006; Katz & Hunter, 2007; Katz & Windecker-Nelson, 2006; Shortt, et al., 2010; Stocker, Richmond, & Rhoades, 2007). The social functioning of children from emotion-coaching parents also tends to be more competent, with evidence of greater positive peer play and better social skills (Cunningham & Garner, 2009; Gottman, et al., 1996; Katz & Windecker-Neslon, 2004).

Since first introduced, PMEP has largely been examined within normative samples. Relatively less attention has been given to children with clinical disorders, but growing research in the field also suggests a relationship between PMEP and adjustment for children with psychopathology. In a recent study on adolescent depression, Hunter and colleagues (2011) examined the meta-emotion philosophy of both adolescents and their parents. Depressed adolescents were found to have less detailed and adaptive philosophies about their own emotions than non-depressed adolescents. Furthermore, there was an association between the meta-emotion philosophy adolescents held regarding their own emotions and their parents' philosophy towards their children's emotions. A more accepting and coaching parental approach towards emotions related to a higher level of emotional awareness and adaptive emotion management among these adolescents. In this study, adolescent depression was also found to moderate the relationship between maternal PMEP and adolescent meta-emotion philosophy, suggesting that for clinically depressed youth, maternal PMEP plays an especially important function in the development of adolescent emotion beliefs and management strategies. In an earlier study, Katz and Hunter (2007) found similar relationships between maternal PMEP and levels of depression symptoms in adolescents. Children of mothers who were more accepting and expressive of their own emotions tended to experience lower levels of depressive symptoms. Interestingly, the researchers also demonstrated that emotion-coaching behaviours during mother-child interactions resulted in reduced reciprocity of negative affect and aversiveness.

In other clinical groups, such as children with conduct problems (Dunsmore, Booker, & Ollendick, 2013; Katz & Windecker-Nelson, 2004) and children at risk, for instance, households with domestic violence and maltreating parents (Cunningham, et al., 2009; Katz & Windecker-Nelson, 2006; Shipman, et al., 2007), findings

consistently demonstrate an association between parental emotion-coaching and better psychosocial adjustment in children. Providing children who exhibit symptoms of psychopathology or who otherwise display ER difficulties, with emotion-coaching parenting may also serve to prevent the onset of further socio-emotional or behavioural difficulties (e.g., Dunsmore, et al., 2013).

The Current Study and Hypotheses

Emotion dysregulation is posited to underlie many forms of psychopathology (e.g. Gross & Munoz, 1995; Kring & Bachorowski, 1999; Werner & Gross, 2010) and is incorporated as a central feature in aetiological, maintenance and treatment models of anxiety (e.g. Hofmann, Sawyer, Fang, & Asnanni, 2012; Mennin, Heimberg, Turk, & Fresco, 2002). Importantly, there is growing insight into the nature of ER difficulties among children with anxiety disorders (Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004) and related familial factors (e.g., Hurrell, et al., in press; Suveg et al., 2005; Suveg et al., 2008). However, little is known about the underlying beliefs and feelings that parents of AD youth have toward emotions, in themselves or their children. As such, this study had several goals. First, it examined the "meta-emotion structure", or feelings about feelings (Hooven, Gottman, & Katz, 1995) in parents of children with and without a diagnosis of anxiety. Second, it examined emotion-coaching behaviours in parents of children with and without anxiety disorders during parent-child interactions. Third, it assessed ER in children across three different emotion types (fear, sadness and anger) and obtained parents' general perceptions of children's ER coping. Together, these aims were intended to provide a richer understanding of the family factors that might contribute to emotion-related deficits in children with ADs. Knowledge of how emotion beliefs and related behaviours differ

between families of anxious and non-anxious children can provide new information on aetiological and maintaining factors for AD youth's emotional functioning, ultimately helping to enhance prevention and intervention strategies for child ADs.

Using multiple methods, the current research sought to test the hypotheses, that relative to parents of non-AD youth, parents of AD youth would: (a) have a meta-emotion philosophy that is lower on both emotion-coaching and emotional awareness; (b) be observed as showing fewer emotion-coaching behaviours during a parent-child discussion task; and (c) tend to rate themselves as having a poorer attitude towards emotion-coaching. It was further hypothesised that compared to non-AD youth, AD youth would: (d) have greater difficulty regulating a range of negative emotions and that this difficulty would be consistent across parental interviews, parent-report and observation.

Method

Participants

Participants in the study were 109 children between the ages of 7 and 15 years and their parents and were comprised of 74 AD children and 35 non-AD children. The sample was primarily of middle-class socioeconomic status (SES). The AD group consisted of 41 girls (*M* age = 10, *SD* = 0 months) and 33 boys (*M* age = 9, *SD* = 3 months), who presented with their parents for treatment at the Emotional Health Clinic, Macquarie University, Sydney. Trained postgraduate clinical psychology students and Clinical Psychologists assessed the children using the semi-structured clinical interview, the Anxiety Disorders Interview Schedule for DSM-IV - Child and Parent Version (ADIS-IV-C/P: Silverman & Albano, 1996), resulting in the following principal diagnoses: generalised anxiety disorder 48%, social phobia 23%, specific phobia 12%, separation

anxiety disorder 3%, obsessive-compulsive disorder 3% and panic disorder 3%. Fifty-one children were diagnosed with an additional anxiety disorder (25% generalised anxiety disorder, 16% social phobia, 17% specific phobia and 15% separation anxiety disorder). Eleven children also met criteria for an additional diagnosis other than anxiety: mood disorder (n = 4), attention deficit hyperactivity disorder (n = 1), sleep disorder (n = 5) and oppositional defiant disorder (n = 1).

The nonclinical group consisted of 21 girls (age *M* = 9.86 years, *SD* = 2.37 months) and 14 boys (age *M* = 11 years, *SD* = 2.18) who had never sought treatment from a mental health professional. Children in the control group did not meet diagnostic criteria for a psychological disorder based on the ADIS-IV and scored within the normative range on both the Spence Child Anxiety Scale – Child and Parent Versions (SCAS-C/P) and the Strengths and Difficulties Questionnaire (SDQ). Nonclinical families were recruited from the community via advertisements in local sporting and recreational organisations, community noticeboards, online social media and local independent schools. To ensure comparable SES, nonclinical families were recruited from the same geographical area as the clinical group. Chi-square analyses confirmed non-significant differences on the demographic variables for education, ethnicity and income.

Procedure

After obtaining informed written consent from parents and adolescents and verbal assent from children (aged below 12 years), a trained clinical psychologist or intern clinical psychologist administered the ADIS-IV-C/P. During the parent interview children completed measures of symptomatology. During the child interview parents completed measures of symptomatology, socio-demographics, emotion parenting styles

and child emotion regulation. One parent was also administered the Meta Emotion Interview (MEI-revised; Katz & Gottman, 1999). They were interviewed about their own experience of fear, sadness and anger and their thoughts, feelings and behaviours about their child's fear, sadness and anger. The interviews were audio-recorded and later coded. Participants were then seated next to each other in a room and the experimenter read aloud instructions for the conflict discourse task. The parent-child dyads were asked to discuss, for three-minutes, a current or recent topic that had been causing some conflict at home and to work towards a resolution. The goal of this discussion task was to elicit negative emotions naturalistically; for the purpose of observing child emotion regulation and parental coaching behaviours. The dyadic interactions were video recorded and later coded. All clinical families went on to receive treatment at the clinic. Nonclinical families were reimbursed $50 for time and travel expenses.

Measures

Meta-Emotion Interview (MEI-revised; Katz & Gottman, 1999). The MEI-revised is a semi-structured interview that assesses parental awareness and acceptance of their own and child's emotions, parent and child emotion regulation and parent coaching of child emotions. The study focussed on assessing the two core aspects of parental meta-emotion philosophy (PMEP; Gottman et al., 1996): awareness and coaching of emotions (Gottman et al., 1997; Katz & Gottman, 1997). In line with the aims of this study, child emotion regulation was also examined. The MEI was coded using an advanced and 155inimizatio checklist rating system, the Meta-Emotion Coding System (Katz, Mittma, & Hooven, 1994). Based on this system, the following codes were formed per emotion (fear, sadness and anger): (1) parent's awareness of their own

emotion; (2) parent's awareness of their child's emotion; (3) parent's coaching of their child's emotion; and (4) child's regulation of emotion. The *awareness of emotions* was assessed by rating the parent's ability to identify, discuss and distinguish emotions in themselves and in their child (e.g., "What is it like for you to be angry?"; "What is like for your child to be angry?"). *Coaching of emotions* was rated according to the degree of involvement, interest and knowledge parents reported with regard to their child's emotional experiences, respect towards their child's emotion, sharing of emotional experiences with their child and thought and energy given to what their child knows about emotions (e.g. "What do you do to help your child with this emotion?"). Finally, *child regulation of emotion* was assessed by rating the intensity, duration and frequency of the child's emotional experiences, competence to overcome the emotion and any concerns the parent had in regard to the child's experience or expression of emotion (e.g. "Is there anything s/he does to get over feeling sad?"). The first author was comprehensively trained in the administration and coding of the interviews by resources provided from the lab of Katz and Gottman (University of Washington, Seattle, U.S.). A second coder who was blind to group status and the study hypotheses conducted reliability coding across the emotions on 20% of the interviews. Analyses generated the following intra-class correlations (ICC): Parent Awareness of own Emotions = .90, $p < .01$; Parent Awareness of child Emotions = .87, $p < .01$; Coaching of Emotions = .89, $p < .01$; and Child Regulation = .92, $p < .01$. These scores are within a comparable range to reliability previously reported (e.g. Gottman, et al, 1997; Katz & Windecker-Nelson, 2004).

Psychometric properties of the MEI scales have yielded adequate internal consistency and construct validity (Gottman, et al., 1996; 1997; Katz & Windecker-Nelson, 2004; Lagacé-Séguin & Coplan, 2005). In the current study, the Cronbach

alpha coefficients ranged from .70 to .80 for parent awareness of own emotions; .70 to .77 for parent awareness of child emotions; .68 to .78 for coaching of emotions; and .81 to .89 for emotion dysregulation. These estimates are comparable to reliability reported by previous research (e.g. Katz & Windecker-Nelosn, 2004; Katz, et al, 2014)

Observation: Conflict Discourse Task

Parental coaching of emotions was measured by an observational global rating system of the conflict discourse task (Baker, Fenning & Crnic, 2011). The coding system is comprised of two subscales and is based on the work of Gottman and colleagues (1997): (a) Emotion Coaching (five items) – degree of *structuring* the parent provides (teaching, reflecting and problem-solving to facilitate emotion understanding); level of *sensitivity and acceptance* of the child, *validation and encouragement* shown towards the child, parent's *enthusiasm and interest* for the task, and degree of parental *intimacy, warmth and affection* displayed during the interaction; (b) Emotion Dismissing – parental *derogation* of the child, degree of *intrusiveness* during the task, amount of *157inimization and/or discouragement* of child's emotion and parental *detachment and/or disinterest* during the task. For this study, it was also of interest to examine parental *distress reactions* for identifying parent negativity (e.g. negative emotions, body language) and as an indicator of emotion regulation. Although parent distress reactions are measured in the well-validated instrument, the Coping with Children's Negative Emotions Scale (CCNES, Fabes, Eisenberg, and Bernzweig, 1990), it does not appear in Baker's coding protocol. In previous research this item correlates with the Emotion Dismissing subscale (see Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002; McElwain, Halberstadt & Volling, 2007). Thus, a new item was developed to capture parental distress reaction and was added to the emotion dismissing score (five items in

total). In order to obtain a measure of observed child emotion regulation, the rating scale also included a separate item for *child distress* scores, which assessed child negative emotion as manifested by body language, facial expression, emotional expression and tone of voice. All variables were coded on a 5-point Likert scale (1 = *none*; 5 = *high*) and were coded by a second coder for 20 percent of the interaction tasks. Analyses generated the following single rater intra-class correlations: Emotion Coaching = .87, $p < .01$ and Emotion Dismissing = .66, $p < .05$. The current ICCs are comparable to reliability reported in observations studies on emotion socialisation research with anxious samples (e.g. Suveg, et al., 2005; 2008). In the current study, the Cronbach alpha coefficients were .78 and .83 for the Emotion Coaching and Emotion Dismissing subscales, respectively. These reliability results are comparable to the alphas reported in Baker and colleagues (2011).

Emotion Regulation

Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997). The ERC is a 24-item parent-report measure (4-point Likert scale; 1 = *never* to 4 = *always*) of their children's typical methods of managing emotional experiences, which was administered to both mothers and fathers about their children's emotional regulation. The checklist has two subscales: (a) Emotion Regulation – measures appropriate emotional display, empathy and emotional self-awareness (e.g., "Is empathetic towards others") and (b) Lability/Negativity – represents a lack of flexibility, mood lability and dysregulated negative affect (e.g., "Exhibits wide mood swings"). Shields and Cicchetti (1997) report high internal consistency for both subscales (emotion regulation = .83; lability/negativity = .96), strong construct validity with established measures of emotion regulation, strong discriminate validity and the ability to differentiate between well-

regulated and poorly-regulated groups (Shields & Ciccetti, 1997). In this study, internal consistency was good with Cronbach's alpha of .74 and .86 for mothers and .76 and .88 for fathers, respectively for Emotion Regulation and Lability/Negativity scales.

Emotion Coaching

Maternal Emotional Styles Questionnaire (MESQ; Lagacé-Se´guin & Coplan, 2005). The MESQ was used as a self-report measure to assess emotion coaching attitudes in parents. The measure was adapted from a self-assessment questionnaire on parental emotional styles (Gottman,1997) and was first developed using a maternal sample (Lagacé-Séguin & Coplan, 2005). However, the items are not gender specific and the measure has since been used reliably with fathers (see Baker et al., 2011). The MESQ is comprised of 14 statements that uses a 5-point Likert scale (1 = *Strongly Disagree* to 5 = *Strongly Agree*) and yields two subscales: (a) Emotion Coaching – accepting attitude towards children's emotions and a desire to connect with the child and explore emotions (e.g., "When my child is angry, I take some time to experience this emotion with him/her"; "When my child is sad, it's time to get close") and (b) Emotion Dismissing – reduced awareness and acceptance of children's emotions and diminished focus on assisting with negative emotions (e.g., "When my child is angry, my goal is to make him/her stop"; "Childhood is a happy-go-lucky time, not a time to feel sad or angry"). Psychometric validation for the MESQ has revealed high internal consistency, adequate stability and good concurrent validity (Baker et al., 2011; Lagacé-Séguin & Coplan, 2005; Lagacé-Séguin & Gionet, 2009). In the current study, internal consistency was Cronbach's alpha of .66 and .80 for mothers and fathers and .61 and .78 for mothers and fathers, respectively for Emotion Coaching and Emotion Dismissing.

Psychopathology

Anxiety Disorders Interview Schedule for DSM-IV, Child and Parent Versions (ADIS-IV-C/P; Silverman & Albano, 1996). The ADIS-IV Child and Parent versions consists of child and parent semi-structured clinical interviews that makes diagnoses based on the criteria set out in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994). Children were assigned a diagnosis if either the parent or child reported that symptoms were causing significant interference in functioning and if the Clinical Severity Rating (CSR) of 4 or more was assigned (as outlined in the clinician's manual of the ADIS-IV by Silverman and Albano, 1996). The ADIS-IV-C/P has demonstrated good psychometric properties of inter-rater and test-retest reliability (Silverman & Albano, 1996; Silverman, Saaverda, & Pina, 2001; Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). Research from our clinic has demonstrated excellent reliability for the ADIS with interrater agreement of kappa = 1.00 for an overall anxiety disorder diagnosis and between Kappa = .80 and Kappa = .93 for specific anxiety diagnoses (Lyneham, Abbott, & Rapee, 2007).

Spence Children's Anxiety Scale, Parent and Child Report (SCAS; Spence, 1998). The SCAS is a 38-item measure of anxiety symptoms on 6 subscales: Generalised Anxiety Disorder; Obsessive-Compulsive Disorder; Specific Phobia; Panic and Agoraphobia; Separation Anxiety; and Social Anxiety. The measure contains an additional six positive 'filler items' to reduce negative response bias. Respondents indicate the frequency with which each symptom occurs on a 4-point scale from 0 (*never*) to 3 (*always*). Sound psychometric properties have been reported, including adequate test-retest reliability, high internal consistency and high concurrent validity

(Nauta, et al.,, 2004; Spence, 1998, Spence, Barrett, & Turner, 2003). Internal consistency for the total SCAS score in this study was Cronbach's alpa .94 and .67 (Cronbach's alpha) for mothers' and fathers' reports, respectively.

Strengths and Difficulties Questionnaire, Parent and Child Report (SDQ; Goodman, 1997). The SDQ is a 25-item behavioural screening questionnaire that is divided into 5 scales: Emotional Symptoms; Conduct Problems; Hyperactivity/Inattention; Peer Relationship Problems; and Pro-social Behaviour. Respondents indicate on a 3-point Likert scale, 1 (*not true*), 2 (*somewhat true*), or 3 (*certainly true*), how each attribute applies to the child. This measure is found to have good psychometric properties, including an ability to distinguish between clinical and nonclinical samples, high construct validity, as evidenced by convergence with established measures of child psychopathology (e.g. Achenbach, 1991), predictive validity, internal reliability and retest reliability (Goodman, 2001; Goodman & Goodman, 2009; Goodman, Meltzer & Bailey, 1998; Goodman & Scott, 1999). Internal consistency for the total difficulties score in this sample was Cronbach's alpha = .85 and .82 for mothers and fathers, respectively.

Depression Anxiety Stress Scales-21 (DASS; Lovibond & Lovibond, 1995). The DASS-21 was included as a measure of parental depression, anxiety and stress. Parents rated each of the 21 items using a 4-point Likert scale from 0 (*not at all*) to 3 (*most of the time*). The DASS-21 has been assessed as a reliable and valid instrument in both community and clinical samples, with high internal consistency, and good convergent and discriminant validity (Antony, Bieling, Cox, Enns & Swinson, 1998; Clara, Cox & Enns, 2001; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). For the current study, internal consistency was Cronbach's alpha of .89, .71 and .83, and .91, .80 and

.80, for mothers and fathers reported depression, anxiety and stress symptoms, respectively.

Data Analysis

A series of t tests were used to examine group differences on each of the self-report measures. Group differences for each of the subscales of the parental MEI were examined by conducting a series of mixed between-within ANOVAs: 2 (Group) x 3 (Emotion). Effect sizes reported are interpreted according to guidelines proposed by Cohen (1998): 0.01 = small effect; 0.06 = moderate effect; and 0.14 = large effect. Group differences for the parent-child conflict discourse task were evaluated by conducting t-tests. The Bonferroni correction was applied to protect against an increased risk for a Type 1 error.

Results

Preliminary analyses

There were no differences in mean age between anxious children and nonclinical children, $t(109) = -1.98$, $p > .05$ (anxious $M = 9.25$ years, $SD = 1.95$, nonclinical $M = 10.17$ years, $SD = 2.38$). A Chi-square test for independence (with Yates Continuity Correction, used to reduce the error in approximation) indicated that children's gender did not differ between the clinical and nonclinical groups, $\chi^2(1, N = 109) = .02$, $p > .05$ (clinical = 44.6% male, 55.4% female; nonclinical = 40% male, 60% female).

The mean scores for both child and parent measures of symptomatology for the clinical and nonclinical groups are presented in Table 1. Anxious children were found to have significantly higher scores on the SCAS and the SDQ than nonclinical children.

There were no significant differences on the DASS between mothers and fathers of anxious and nonanxious children. Differences between groups on the child symptom measures provide support for the distinction between the clinical and nonclinical groups. See Table 2 for correlations between the variables of interest for the measures of child ER, parent emotion- coaching and awareness of emotion, and child anxiety symptoms.

Table 1.
Means and Standard Deviations for Measures of Symptomatology and Child Emotion Regulation

	Clinical (Mothers n = 70; Fathers n = 40)		Nonclinical (Mothers n = 33; Fathers n = 26)	
Questionnaire	*M*	*SD*	*M*	*SD*
SCAS - Mother	33.27[a]	14.87	7.79[b]	5.62
SCAS – Father	32.17[a]	13.22	10.02[b]	16.21
SDQ – Mother	18.45[a]	4.03	11.09 [b]	2.48
SDQ – Father	17.68[a]	3.99	11.73[b]	2.24
Mothers				
Depression	5.46[a]	6.80	4.12[a]	3.88
Anxiety	4.08[a]	5.04	2.9 [a]	2.7
Stress	11.5 [a]	7.62	9.34 [a]	5.8
Fathers				
Depression	8.2[a]	8.28	5.92[a]	5.92
Anxiety	4.2[a]	5.84	2.76[a]	3.30
Stress	12.00[a]	6.98	9.38[a]	6.28
	Clinical (Mothers n = 61; Fathers n = 49)		Nonclinical (Mothers n = 33; Fathers n = 26)	
ERC Subscale	*M*	*SD*	*M*	*SD*
MOTHERS				
Emotion Regulation	24.80[a]	3.39	28.67[b]	2.49
Lability/Negativity	30.87[a]	6.33	23.03[b]	3.77
FATHERS				
Emotion Regulation	24.33[a]	3.54	27.27[b]	2.69
Lability/Negativity	29.80[a]	4.57	27.73[b]	2.79

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). ERC = Emotion Regulation Checklist. SCAS = Spence Child Anxiety Scale Scales; SDQ = Strengths and Difficulties Questionnaire (Total Difficulties).

Effects of Child and Parent Gender on Meta-Emotion Philosophy

Mixed between-within ANOVAs were conducted to examine potential effects of gender (Boys, Girls) on parental meta-emotion philosophy. Maternal and Paternal scores for emotion coaching and awareness of child's emotions were examined

separately for the emotions of anger, sadness and fear. However, no significant differences emerged for these variables. Comparison of emotion coaching and awareness of parents' own and their child's emotions between mothers and fathers were also examined. No significant differences emerged between mother and father scores on these variables (all *p*s > .05).

Table 2.
Correlations among study variables, by parent gender

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Coaching – MEI	-	.56**	.68***	.76***	.15	-.31	-.29	-.50*	.69**	-.65**	-.34
2. Regulation – MEI	.84***	-	.25	.45*	.52*	-.67**	-.13	.23	.19	-.26	-.52
3. Aware of own – MEI	.59***	.38*	-	.49**	-.07	-.27	-.22	-.27	.29	-.31	-.53*
4. Aware of child's – MEI	.82***	.57***	.61***	-		-.30	-.17	-.30	.47*	-.47*	-.25
5. Emotion regulation – ERC	.31	.39*	.22	.07	-	-.54***	.05	.01	-.01	.01	-.01
6. Negativity/lability – ERC	-.71***	-.82***	-.50**	-.52**	-.64***	-	-.10	.02	-.16	.28	.24
7. Coaching subscale –MESQ	.14	-.06	.42*	.47*	.04	-.18	-	.44***	.04	-.05	.02
8. Dismissing subscale - MESQ	.15	-.06	-.16	-.09	-.15	.06	.24*	-	-.50**	.29	-.10
9. Coaching in discussion subscale	.82***	.74***	.57**	.69***	.26	-.20	-.01	-.04	-	-.90***	-.11
10. Dismissing in discussion subscale	-.75***	-.72***	-.45*	-.62***	-.43**	.48***	-.05	.02	-.70***	-	.39
11. Child anxiety – SCAS	-.49**	-.62***	-.23	-.40*	-.38***	.50***	.04	-.03	-.36**	.56***	-

Note. Correlations in the lower left of the table are for mothers and those in the upper right are for fathers. MEI = Meta Emotion Interview. ERC = Emotion Regulation Checklist. SCAS = Spence Child Anxiety Scale Scales. MESQ = Maternal Emotional Styles Questionnaire.
*** $p < .001$, ** $p < .01$ * $p < .05$.

Meta-Emotion Philosophy in Parents of Anxious and Non-Anxious Children

Parents of children with an anxiety disorder were compared to parents of children without an anxiety disorder on coaching of emotions, awareness of their child's emotions and awareness of their own emotions. Since there were no significant mean differences between mother and father reports on any of the subscales for the MEI, it was decided to analyse them together by averaging mother and father scores for each MEI variable. Analysing mother and father responses separately for this measure would have also reduced the sample size comparing groups. Table 3 displays the means and standard deviations for the MEI variables, across the emotions of anger, sadness and fear. Mixed between-analyses of variance were conducted for each of the MEI subscales to assess the influence of group (Anxious, Non-Anxious), across three emotions (fear, sadness and anger). Main effects for emotion on the MEI subscales and the interactions between group and emotions were tested.

Awareness of Parent's own Emotions

For parent's awareness of their own emotions, a significant main effect was found for group, F (1, 51) = 18.31, p = .000, partial eta squared = .26, with parents of AD children showing less awareness of their emotions of fear, sadness and anger. The main effect for emotion was also significant, Wilks Lambda = .66, F (2, 50) = 13.26, p = .000, partial eta squared = .35, with parents from both groups showing greater awareness of their emotional experiences involving anger compared to sadness and fear. The Group x Emotion interaction was significant, Wilks Lambda = .89, F (2, 50) = 3.13, p = .05, partial eta squared = .11. Follow-up tests revealed parents of AD children were significantly lower in their awareness of fear than their awareness for sadness or

anger in comparison to parents of non-AD children, $t(30) = -3.05$, $p < .05$ and $t(30) = -5.08$, $p < .05$, respectively.

Parent's Awareness of their Children's Emotions

A significant main effect was found for group, $F(1, 51) = 27.46$, $p = .000$, partial eta squared = .35, suggesting that parents of AD children are less aware of their children's emotional experiences for fear, sadness and anger. The main effect for emotion was not significant, Wilks Lambda = .91, $F(2, 50) = 2.45$, $p = .1$, partial eta squared = .09, indicating that parent's awareness of their children's emotions does not differ between fear, sadness and anger. However, the Group x Emotion interaction was significant, Wilks Lambda = .88, $F(2, 50) = 3.58$, $p = .04$, partial eta squared = .13. Follow-up tests indicated a significantly lower level of awareness for child's emotion for fear in parents of AD children than for anger, in comparison to parents of non-AD children, $t(30) = -3.16$, $p < .05$.

Coaching

For parental coaching of children's emotions, a significant main effect was found for group, $F(1, 51) = 107.53$, $p = .000$, partial eta squared = .68, with parents of AD children showing less coaching of the emotions for fear, sadness and anger. The main effect for emotion was also significant, Wilks Lambda = .71, $F(2, 50) = 10.29$, $p = .000$, partial eta squared = .29, with both groups showing less coaching for anger than for sadness and fear. There was no significant interaction effect between group and emotion, Wilks Lambda = .94, $F(2, 50) = 1.50$, $p = .23$, partial eta squared = .06.

Table 3.
Means and Standard Deviations for MEI Variables with Emotions

	Clinical (n = 29)		Nonclinical (n = 24)	
Variable	*M*	*SD*	*M*	*SD*
Coaching				
Fear	17.66 [a]	2.83	24.02 [b]	1.93
Sadness	18.44 [a]	3.25	23.79 [b]	1.91
Anger	16.29 [a]	3.23	22.78 [b]	2.23
Aware of own emotions				
Fear	15.76 [a]	2.57	18.58 [b]	1.98
Sadness	16.99 [a]	2.41	18.96 [b]	1.85
Anger	18.17 [a]	1.98	19.42 [b]	1.10
Aware of child's emotions				
Fear	16.17 [a]	2.57	19.08 [b]	1.50
Sadness	16.79 [a]	2.45	18.78 [b]	1.58
Anger	17.55 [a]	2.26	19.25 [b]	1.25
Child emotion regulation				
Fear	11.33 [a]	3.16	19.08 [b]	1.32
Sadness	12.81 [a]	3.48	18.92 [b]	1.06
Anger	12.71 [a]	2.89	18.75 [b]	1.45

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). MEI = Meta Emotion Interview.

Conflict Discourse Task

Parents of anxious and non-anxious children were compared on observed emotion coaching and dismissing behaviours during the conflict discourse task. Within-group analyses showed that maternal and paternal behaviours did not significantly

differ from each other. Thus, it was decided to analyse them together by averaging mother and father scores for the coaching and dismissing variables. Analysing mother and father behaviours separately for this task would have also reduced the sample size comparing groups. Within-groups analyses revealed no significant differences between mothers and fathers on emotion-coaching behaviours. Results revealed a significant difference between groups, with parents of anxious children (M = 13.70, SD = 5.10) displaying fewer emotion coaching behaviours than parents of nonclinical children (M = 18.47, SD = 4.47), $t(74) = -4.32$, $p < .01$.

For observed emotion dismissing behaviours, significant group differences also emerged, with parents of anxious children (M = 12.56, SD = 3.40*)* exhibiting greater dismissing behaviours than parents of nonclinical children (M = 8.14, SD = 2.91), $t(74) = 6.09$, $p < .01$. Within-groups analyses revealed no significant differences between mothers and fathers on emotion-dismissing behaviours.

Parental Emotion Coaching Attitudes

Parent-reported attitudes towards emotion coaching and emotion dismissing were compared between groups on the MESQ. For the Emotion Coaching subscale, there were no significant differences between parents of anxious children (M = 25.5, SD = 3.59) and parents of non-anxious children (M = 24.42, SD = 3.10), $t(125) = 61.80$, $p > .05$. There were also no significant differences on the Emotion Dismissing subscale between parents of anxious children (M = 23.61, SD = 4.29) and non-anxious children (M = 22.38, SD = 4.09), $t(125) = 1.65$, $p > .05$. However, mother and father attitudes towards emotion coaching and emotion dismissing differed F (1, 123) = 5.37, $p < .05$, partial eta squared = .042, F (1, 123) = 9.93, $p < .01$, partial eta squared = .075, respectively. Inspection of the mean scores indicated that fathers endorsed a more

accepting attitude towards Emotion Coaching (M = 25.72, SD = 3.18) than mothers (M = 24.21, SD = 3.46). Fathers also endorsed favourable attitudes towards Emotion Dismissing (M = 24.2, SD = 3.9) than mothers (M = 21.77, SD = 4.29), that is they were more likely than mothers to report reduced acceptance of children's negative emotions.

Children's Emotion Regulation

The mean scores and standard deviations for parent-reported ER skills are seen in Table 1. For the Regulation subscale on the ERC, both mothers and fathers in the clinical group rated their children as having greater difficulty regulating their emotions than mothers and fathers in the nonclinical group, $F(1, 94) = 33.23$, p = .000, partial eta squared = .27 and $F(1, 73) = 13.73$, p = .000, partial eta squared = .16, respectively. On the Negativity/Lability subscale, mothers and fathers of anxious children rated their children as being more inflexible, labile and emotionally negative than parents in the nonclinical group, $F(1, 94) = 42.27$, p = .000, partial eta squared = .32 and $F(1, 73) = 4.42$, p = .04, partial eta squared = .06, respectively.

Results from the Dysregulated subscale of the MEI (see Table 2 for means and standard deviations) revealed that parents in the clinical group reported their children as significantly more dysregulated across all emotions than parents of nonclinical children, $t(49) = -18.71$, $p < .01$. Significant group differences for emotion dysregulation were also observed during the conflict discourse task, with anxious children exhibiting higher overall distress levels (M = 2.78, SD = 1.17) than non-anxious children (M = 1.58, SD = .69), $t(75) = 5.35$, $p < .01$.

Discussion

Empirical evidence from studies conducted with normative populations suggests that parental meta-emotion philosophy characterised by high levels of awareness and coaching of emotions correlates significantly with positive socio-emotional outcomes in children (e.g. Gottman et al., 1996). In clinical populations, there have been limited studies on parent meta-emotional philosophy and child emotional functioning, and this is the first known study to examine this construct in a sample of clinically anxious children.

As expected, differences in meta-emotion philosophies between parents of AD and non-AD youth were found. Firstly, parents of AD youth tended to be less aware of their own emotions and the emotions of their children. This means that compared to parents of non-AD children, parents of anxious children are poorer at recognising their own emotional experiences and those of their children, are less able to distinguish between one emotional state and another, are less clear about causes of emotion and have less insight and knowledge regarding feelings. However, this level of awareness was also dependent on the type of emotion. Specifically, parents of AD children were significantly less aware of their children's emotion of fear than anger in comparison to parents of non-AD children's awareness of fear and anger in their children. Interestingly, this effect was also observed for parents' awareness of their own emotions. That is, parents of AD children were significantly less aware of their own fear compared to both sadness and anger than parents of non-AD children. This is somewhat of a surprising finding, since parents of anxious children presented for the treatment of their child's anxiety suggesting they have sufficient awareness of fear-based emotions. Perhaps they are not aware of the full extent to which their children

experience fear and/or it becomes apparent only when the emotion reaches significant levels of severity (as with anxiety disorders). This result requires further investigation as diminished parental awareness of fear may be a relevant factor in the development of children's anxiety problems, i.e., reduced parental awareness leading to insufficient/maladaptive parental management of children's fear and/or poor parental modelling regarding their own experience of fear. Also, the finding that parents of AD children are less aware of their own fear might also relate to a tendency to under-report their own anxiety, possibly due to potential feelings of guilt or 'blame' regarding their child's anxiety problem (Kendall & Suveg, 2006).

Secondly, parents of AD youth were found to be less coaching of their children's negative emotions compared to parents of non-AD youth. That is, when responding to their children's negative emotions, parents of AD youth are less inclined to show respect for their children's feelings, are less likely to teach their children strategies to manage emotions, seem at a loss of how to deal with their children's feelings and generally give less thought and energy to understanding emotions. With regard to specific emotions, all parents (regardless of their child's anxiety status) were found to be significantly less coaching for the emotion of anger compared to sadness or fear. This suggests that, in general, anger may be a more difficult emotion for parents to coach or is perhaps an emotion that parents expect their children to control (Strayer & Roberts, 2004).

The second hypothesis that parents of AD youth would display fewer emotion-coaching behaviours was fully supported. The parent-child conflict discourse task was designed to elicit negative emotion *in the room* by asking parents and children to discuss and work towards solving an ongoing or recent conflict. Findings revealed that parents in the AD group responded to their children with fewer emotion-coaching

behaviours than parents in the non-AD group, i.e., interacted with less sensitivity and acceptance, less inclined to validate and encourage their children (particularly around emotions), displayed less enthusiasm, interest, warmth and affection, and used fewer teaching or problem-solving strategies. Moreover, compared to parents in the non-AD group, parents in the AD group tended to espouse a more negative interaction style, and therefore scored higher on the emotion-dismissing subscale. Specifically, parents of anxious children were more inclined to minimise or discourage their children's emotions or thoughts (i.e. discouraged emotional expression or conversation), showed higher levels of intrusiveness, and tended to display more negative behaviours, such as criticising or correcting their child. The finding that mothers and fathers of AD youth tend to be lower on emotion-coaching as well as higher on emotion-dismissing than mothers and fathers of non-AD youth, is concerning. Findings from a study conducted by McElwain and colleagues (2007) suggest that low levels of supportive parenting in response to children's emotions is not as detrimental to children's socio-emotional outcomes, if they are counterbalanced by higher levels of support from the other parent. Since emotion-coaching and emotion-dismissing was found to be equivalent across mothers and fathers for the current study, the findings suggest that AD youth are receiving limited optimal emotion-parenting from both parents. Further research is warranted to examine this finding, as these parenting styles could present as a risk factor for ongoing or worsening emotional difficulties (Morris, et al., 2007).

In previous research that observed emotion-related parental practices in families of AD children, a similar pattern of results emerged to that of the current study. Suveg and colleagues (2008) showed that parents of AD youth engaged in less explanatory discussions of emotions, with fathers doing so across all emotions (e.g. happy, anxious and angry) and mothers doing so just in the anxious scenario and only with sons. In the

study by Suveg, there was also a tendency for both mothers and fathers to discourage emotion discussions for anger. In other research that examined the dimensions of intrusive involvement and warmth (Hudson, et al., 2008), mothers were found to be significantly more intrusive than mothers of non-AD children when discussing negative emotions. Additionally, parents in the anxious group displayed lower levels of warmth than parents in the non-anxious group, which included behaviours such as criticism, appearing distant and a reduced acknowledge/acceptance of children's feelings. Taken together, findings from observational research suggest that processes of emotion-socialisation are awry in families of children with an anxiety disorder, which may contribute to or maintain child anxiety. Ample evidence indicates that such parenting is associated with emotion-related deficits in children, such as poor emotion regulation (e.g. Fabes, Leonard, Kupanoff, & Martin, 2001; Hooven, Gottman, & Katz, 1995; Ramsden & Hubbard, 2002) and a higher risk for internalising and externalising problems (Zeman, et al., 2002). However, further study to investigate the direction of the effect for the current findings is needed, as these parental behaviours may also be a reaction to child anxiety (e.g. Gar & Hudson, 2008).

Counter to our hypothesis, there was no evidence that parents of anxious children would report a poorer attitude towards emotion-coaching on the MESQ than parents of non-anxious children. Surprisingly, results suggested that all parents, regardless of child-anxiety status, shared a similar view towards emotion-coaching. This finding is discordant with results from both the meta-emotion interview and parent-child interaction task, which suggested that parents of AD youth were less likely to hold and behave according to an emotion-coaching style. Perhaps the self-report measure taps at a *surface level* an emotion-philosophy that many parents might agree on, and as such, is perceived as a positive attitude to hold towards one's children's

emotions. Indeed, the mean of the Emotion-Coaching subscale on the MESQ for the current sample was comparable to means reported from community-based studies (e.g. Baker et al., 2011; Legacé-Séguin & Coplan, 2005). It is also possible that the null findings on the MESQ might merely relate to the nature of self-report, with a potential bias to appear socially desirable. In contrast, the parent-child coding system and meta-emotion interview are less transparent and examine actual parental behaviours. These measurement properties might better serve the purpose of assessing parental meta-emotion structure, and thus, more able to draw distinctions between groups. As so few studies have used the MESQ to assess meta-emotion structure and that prior research with a clinical sample is lacking, the interpretations for the current findings of the MESQ is speculative and requires further investigation.

The two groups were also indistinguishable from each other for the Emotion-Dismissing subscale. Again, this contrasts with the parent-child interaction task, which showed parents AD youth interacting with more emotion-dismissing behaviours. Perhaps there is reluctance among parents to endorse items that reflect a negative attitude towards children's emotions. Another possibility is that the observational coding system detects aspects of emotion-parenting that is beyond the scope of a brief questionnaire. For example, intrusive behaviours and levels of intimacy (warmth) are two components that comprise the coding system and are readily observed, but such behaviours are less reliably assessed using a survey method.

An interesting, albeit unexpected finding, was that fathers overall endorsed a significantly higher attitude towards emotion-coaching than mothers. This result contrasts with research conducted by Baker and colleagues (2011), who reported that mothers were more likely to demonstrate emotion-coaching behaviours than fathers. However, it is worth noting that Baker found no differences between parents on

observed emotion-coaching behaviours during an emotion-discussion task. It is again possible that discrepancies between the nature of self-report and observed parenting accounted for these contrasting results. The current findings also differ from related research on fathers' reported reactions to children's negative emotions. For instance, in both nonclinical (e.g., Eisenberg, Fabes, & Murphy, 1996; McElwain, et al., 2007) and clinical settings (Hurrell, et al., in press), fathers were found to endorse less supportive reactions than mothers. In other words, they were less inclined to encourage their children to express feelings and to use emotion-focussed (e.g. comforting) or problem-focussed (e.g. problem solving) strategies.

In addition, the current results showed that fathers were more likely than mothers to hold an emotion-dismissing attitude. For instance, they agreed more with notions that childhood is a time to be happy (not sad) and with strategies that include quickly changing children's negative feelings. This result appears to directly conflict with the finding that fathers were higher on emotion-coaching. However, it does show some consistency with previous research that fathers tend to employ a greater use of non-supportive parenting strategies, such as minimising children's negative emotions and reacting with more punitive behaviours (e.g. Eisenberg, et al., 1996; McElwain, et al., 2007). It is unclear why, in this study that, fathers of both AD and non-AD children endorsed more emotion-coaching- and dismissing attitudes, than mothers. Perhaps fathers perceive that both styles are equally valid in the management of children's emotions and can identify with having used the two approaches.

The final hypothesis that youth with ADs would experience greater difficulty regulating negative emotions than youth with no ADs received full support. On the meta-emotion interview, parents of children with an anxiety disorder reported their children to be significantly dysregulated across all three emotion scenarios: anger,

sadness and fear. More specifically, AD children were reported to have considerable difficulty regulating these negative emotions, tended to experience the emotions more frequently and had greater trouble recovering from the emotions (i.e. hard to get over). Parents of anxious children also reported feeling more concerned about the way in which their children experienced and expressed these negative emotions and indicated more problems outside of the home due to the emotions (e.g. at school, in friendships). Thus, children with ADs not only experience difficulties with regulation for anxiety-related emotions (e.g. fear and nervousness), but also appear to be frequently challenged by sad and angry feelings. Moreover, the findings suggest that these ER difficulties in AD children are interfering in multiple areas of functioning.

Consistent with these results, is the additional finding from the parent-report measure that AD children were more negative and labile. Children in the anxious group also scored lower than non-anxious children on the subscale measuring adaptive ER. Further evidence that AD children experience difficulty with regulating emotions comes from observation ratings during the parent-child discussion task. Compared to non-AD children, AD youth displayed significantly higher levels of emotion dysregulation, as manifested through behavioural and emotional indicators, such as higher levels of distress (e.g. crying, irritability), discomfort, negative tone of voice, and facial features/emotional expressions (e.g. frowning). Together, these findings lend further support to emotion dysregulation models of anxiety (e.g. Mennin, Heimberg, Turk, & Fresco, 2005; Southam-Gerow & Kendall, 2002; Suveg, Morelan, Brewer & Thomassin, 2010) and point to the importance of considering the nature of ER deficits among AD youth in the assessment and treatment process. In addition, the current findings are consistent with the empirical work thus far conducted on AD children's emotion functioning. For example, AD children's difficulties with managing negative

emotions, as reported by both parents and children, have been highlighted in two previous studies that compared clinical and non-clinical groups (Suveg & Zeman, 2004; Hurrell, et al., in press). Also conducted recently was a study that examined the relationship between temperament (i.e. behavioural inhibition), emotion dysregulation and anxiety symptoms (Suveg, et al., 2010). In this study, emotion dysregulation fully mediated the relationship between behavioural inhibition and high anxiety levels. Additionally, and also relevant to the findings of the current study, Suveg and colleagues showed that emotion dysregulation mediated relations between the family emotional environment and anxiety symptoms. Thus, low levels of emotional expressiveness in the family can contribute to the development of ER problems in children, as there are limited opportunities to explore and discuss emotions in the family context (see Denham, Mitchell-Copeland, Srandberg, Auerbach., & Blair, 1997).

As these data suggest, family processes in the socialisation of children's emotions have important implications for children's developing ER. This research has highlighted a key aspect of emotion socialisation that has not previously been studied in a sample of anxious children. That is, the underlying meta-emotion structure that guides how parents manage and respond to their children's emotions (Gottman, et al., 1996). The finding that parents of AD youth were lower on both awareness of emotions, in themselves and in their children (particularly for fear), helps with understanding the possible mechanisms through which parenting might contribute to the development or maintenance of childhood anxiety. For instance, parents who are poorer at detecting subtle emotions in their children are less likely to communicate with their children on the topic of emotions or to offer adaptive assistance for ameliorating their distress. Parents who are less aware of their own emotions are also more inclined to model maladaptive coping strategies (Taylor, 2000). As such, AD children are prone to

receiving less optimal parenting in the coping of anxiety-provoking situations and negative emotions, generally. This fits with previous findings on the strategies that parents of AD children tend to use, such as encouraging avoidance and overprotectiveness (e.g. Barrett, Rapee, Dadds, & Ryan, 1996; Hudson & Rapee, 2001).

The present results contribute to the field of child anxiety and parenting in several ways. First, the results have highlighted that parents of AD children are less likely to behave according to an emotion-coaching philosophy when responding to their children's emotions. Past research indicates that this style of parenting tends to correlate with poorer outcomes in children (e.g. Gottman, et al., 1996). Second, the findings suggest that parents of AD children may engage in strategies that are negative as evidenced by a greater use of emotion-dismissing behaviours. Finally, multiple methods of measurement highlighted the extent to which AD children experience difficulties with the regulation of negative emotion and suggest that these difficulties are impacting on several life domains. Clinically, the findings have important implications. Incorporating the components of emotion awareness, coaching and regulation to treatment programs may enhance outcomes, as this has been trialled in other clinical groups (e.g. externalising disorders) with some benefits reported (see Herbert, et al., 2013). It is possible that these parental components may also serve to improve ER in children, as has been evidenced by programs that have targeted parenting behaviours of children with externalising difficulties (Havinghurst, Wilson, Harley, & Prior, 2009; Havinghurst, et al., 2013).

This study is not without its limitations. The sample was largely middle-class SES and Caucasian, therefore generalisability of the findings to other populations cannot be guaranteed. Both the interview and self-report measures on parenting are prone to the influence of social desirability and thus could have affected the findings.

Whilst observation research tends to be higher in ecological validity, the laboratory setting is more contrived and may have exerted an influence on participant expectations and behaviours. Moreover, the discussion task represents a 'snapshot' of parent-child interactions that may not be representative of typical interaction styles outside of the laboratory. This limitation may have been mitigated by providing the dyads the freedom to choose their own topic and by the experimenter leaving the room. Children's ER was largely assessed through parental report and experimental observation. Future research would benefit from examining AD children's report of emotion awareness and management strategies.

In sum, the current research has highlighted deficits associated with the coaching and awareness (particularly of fear) among parents of AD youth. Future research on clinically anxious children should consider the role of parental meta emotional philososphy when examining parenting practices and investigate how this construct might link with other domains of functioning, such as children's peer relationships. It would also be worthwhile to extend this study by observing emotion-coaching during family emotion-discussions that include both positive and negative emotions.

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CHAPTER FIVE

TREATMENT OUTCOME FOLLOWING COGNITIVE BEHAVIOURAL THERAPY FOR CHILDHOOD ANXIETY DISORDERS: THE INFLUENCE OF PARENTAL EMOTION SOCIALISATION AND CHILDREN'S EMOTION REGULATION

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Abstract

The present study investigated child emotion regulation (ER) and parental emotion socialisation as predictors of treatment outcome among clinically anxious children. One hundred and five children (7-14 years) completed cognitive behavioural therapy (CBT) and were assessed at post-treatment and follow-up to determine end point diagnostic status and symptom change. After controlling for pre-treatment severity, results found father reports of child emotion dysregulation to be the most consistent predictor of treatment outcome; children with higher levels of pre-treatment emotion dysregulation showed a poorer response to treatment. Results also suggested that children whose mothers reported more non-supportive parenting at pre-treatment were less likely to show symptom improvement. Findings were mixed with regard to the remaining ER predictors, with a unique result showing that children's higher emotion inhibition at pre-treatment predicted a better response to treatment. Results provide some, albeit limited support that targeting children's emotion dysregulation and parenting reactions to children's emotions may assist with improving treatment outcomes for clinically anxious children.

Keywords: Child Anxiety; Treatment Outcome; Predictor; Parenting; Emotion

Treatment Outcome Following Cognitive Behavioural Therapy for Childhood Anxiety Disorders: The Influence of Parental Emotion Socialisation and Children's Emotion Regulation

Cognitive behavioural therapy (CBT) is an efficacious treatment for childhood anxiety disorders (ADs), yet there are a significant proportion of children who remain clinically impaired by their symptoms following treatment (for a review see James, et al., 2013). The implications of this can include ongoing risks for co-morbid psychiatric difficulties and a more enduring anxiety condition spanning into adulthood (Cole, et al., 1998; Kessler, et al., 2005). As such, a growing number of studies have sought to examine predictors of poor treatment response including parental psychopathology and familial factors (e.g., Lundkvist-Houndoumadi, Hougaard, & Thastum, 2014), demographic (age, gender; for a review, see Hudson, 2005) and diagnostic features (severity, co-morbidity; Kendall, Brady, & Verduin, 2001). However, the research thus far has produced inconsistent results with limited attention paid to other potentially important predictors of outcome (Knight, McLellan, Jones, & Hudson, 2014). Identifying pre-treatment predictors is particularly important as these factors can be used to identify children at risk of poorer response before they commence therapy and help guide development of more effective treatments.

Two pre-treatment variables that have been under-investigated include child emotion regulation (ER) and parental emotion socialisation (e.g. emotion coaching; Gottman, 1997). With regard to child ER, research supports the view that children with anxiety disorders have significant deficits in emotion understanding and regulation (Hurrell, Hudson, & Schniering, in press; Southam-Gerow & Kendall, 2000; Suveg &

Zeman, 2004) and that such deficits may underpin the mechanisms associated with the development and maintenance of the disorders (Bender, Reinholdt-Dunne, Esbjørne, & Pons, 2012; Suveg, Morelen, Brewer, & Thomassin, 2010). Surprisingly, minimal attention has been give to the role of child ER in the context of CBT for childhood anxiety. Two findings to date suggest that changes in worry regulation following CBT may help to improve anxiety symptoms in children (Kley, Heinrichs, Bender & Tuschen-Caffier, 2012; Suveg, Sood, Comer, and Kendall (2009). However, as these studies focused on changes in ER, the contribution of pre-treatment ER to symptom change is unclear. In particular, it remains unclear the extent to which pre-treatment ER contributes to symptom change over and above initial anxiety severity.

With regard to the influence of parenting, no study to date has investigated the role of emotion socialisation on treatment response to CBT in child anxiety. This is surprising given the research linking socialisation practices, such as parent reactions to child emotions (e.g. supportive and non-supportive; Eisenberg & Fabes, 1994) and emotion coaching (EC) (Gottman, Katz, Hooven, 1997), to children's socio-emotional outcomes. Studies to date have mainly targeted parental psychopathology and other parenting dimensions like warmth/negativity revealing significant but at times mixed associations with outcomes (Festen, et al., 2013; Hudson, et al., 2014; Liber, et al., 2008). It has further been recognised that parenting variables, such as EC, may offer 'protective' effects to children who are already displaying clinically elevated symptoms (e.g. externalizing difficulties; Dunsmore, Booker, & Ollendick, 2013). Furthermore, interventions that include emotion-related parenting skills have shown enhanced outcomes for children with psychopathology (e.g., Herbert and colleagues, 2013). Amongst clinically anxious children, emerging research on parent reactions to children's emotions suggests that parents of anxious children espouse less supportive

and less coaching practices (Hudson, Comer, & Kendall. 2008; Hurrell, et al., in press) and that these parenting practices are associated with children's ER (see Hurrell, et al., in press). It remains unclear, however, whether ER in children and/or parental emotion socialisation predict anxious children's response to CBT. These two factors may impact children's ability to engage in the more challenging aspects of treatment (such as exposure), as a certain degree of tolerance to negative emotion is required.

The current study aims to fill the gap in treatment outcome research, by examining child emotion regulation and parenting practices as predictors of CBT in a sample of clinically anxious children. By investigating both change in symptomatology scores and end point diagnostic status, it was expected that children with poorer pre-treatment ER would show less change in anxiety symptoms and poorer rates of remission from their anxiety diagnosis. Furthermore, it was expected that parenting (at pre-treatment) characterized by either less supportive or more non-supportive reactions to children's emotions would predict less change in child anxiety symptoms and poorer rates of remission.

Method

Participants

One hundred and five children (58 girls and 47 boys) between 7 and 14 years (M = 9.44, SD = 1.85) with a primary anxiety diagnosis according to DSM-IV (American Psychiatric Association, 1994) completed either an individual or group CBT program (Cool Kids; Rapee, et al., 2006). Children were included if they met DSM-IV criteria (American Psychiatric Association, 1994) for a primary diagnosis of an anxiety disorder based on child and parent reports on the Anxiety Disorders Interview Schedule

(ADIS-IV-C/P; Silverman & Albano, 1996). Table 1 provides a summary of the diagnoses. The sample was primarily of middle-class socioeconomic status (SES) and Caucasian (see Table 2 for a summary of demographic information).

Table 1.
Summary of primary anxiety diagnoses and additional anxiety and non-anxiety diagnoses in percent (numbers appear in parentheses)

Primary diagnosis	(*N* = 105)
Generalised anxiety disorder	50 (52)
Social phobia	20 (21)
Specific phobia	17 (18)
Separation anxiety disorder	7 (7)
Obsessive compulsive disorder	6 (6)
Panic disorder	1 (1)
Additional anxiety diagnosis	**(*n* = 89)**
Specific phobia	30 (27)
Generalised anxiety disorder	20 (18)
Social phobia	16 (14)
Separation anxiety disorder	12 (11)
Obsessive compulsive disorder	3 (3)
Agoraphobia	
Additional non-anxiety diagnosis	**(*n* = 11)**
Insomnia related to another disorder	5 (5)
Mood disorder	3 (3)
Sleep disorder	2 (2)
Attention deficit hyperactivity disorder	1 (1)

Table 2.
Summary of participant demographic characteristics

Median household income ($AUD p.a.)	$187,000 – 234,000
Mother's age (years)	M = 41.6, SD = 5.52
Martial status (%)	
Married	87.6
Divorced/separated	4.8
Never married	1.9
Missing data	5.7
Family composition (%)	
Two-parent household	88.6
Single-parent	4.8
Step/blended	1.9
Missing data	4.7
Ethnicity (%)	
Australian	71.43
European	15.24
Asian	2.85
Other (e.g. African, Middle Eastern)	5.71
Missing data	4.76

Note. p.a. = per annum; AUD = Australian dollars

Measures

Child diagnosis. Trained postgraduate clinical psychology students determined diagnoses using the ADIS-IV. Diagnoses and clinical severity ratings (CSR; 0-8) were assigned based on composite parent/child report. The CSR rates the severity of distress and interference in functioning arising from the anxiety disorder, with higher scores indicating higher severity. When reports of interference in functioning were made and

the CSR of 4 or more was reached, a diagnosis was assigned. Research from our clinic has demonstrated excellent reliability, with interrater agreement of Kappa = 1.00 for an overall anxiety disorder diagnosis and Kappa = .80 to Kappa = .93 for specific anxiety diagnoses (Lyneham, Abbott, & Rapee, 2007).

Anxiety Symptoms. Mother-report of child anxiety symptoms were assessed by the 38-item Spence Children's Anxiety Scale, Parent Report (SCAS; Spence, 1998). The scale has demonstrated adequate divergent, concurrent and discriminate validity and is internally consistent (e.g., Nauta, et al., 2004). In this study, Cronbach's alpha for the total SCAS score was .94.

Child Emotion Regulation

Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997). The ERC is a 24-item measure that assesses children's response to emotional challenges and the regulation of a range of emotions. The checklist is comprised of two subscales: the Emotion Regulation (ER) (emotion understanding and adaptive use of coping strategies) and Negativity/Lability subscales (mood lability and dysregulated negative affect). Internal consistency was good (Cronbach's alpha = .70 and .85 for mothers and .75 and .81 for fathers, respectively for Emotion Regulation and Lability/Negativity scales).

Emotion Expression Scale for Children (EESC; Penza-Clyve & Zeman, 2002). The EESC is a 16-item self-report questionnaire that measure two aspects of deficient emotional expression: (a) Poor Awareness – difficulty labelling emotional experiences and (b) Expressive Reluctance – lack of motivation / willingness to communicate or express negative emotional states to others. The total scale score was used. Internal consistency was good (Cronbach's alpha = .85).

Children's Emotion Management Scales (CEMS; Zeman, Shipman, & Penza-Clyve, 2001). The CEMS assesses children's self-reported sadness (12 items) and anger (11 items) management skills and is comprised of three subscales: (a) Inhibition, suppression of emotional experience (b) Dysregulated Expression, culturally inappropriate emotional expression; and (c) Emotion Regulation Coping, adaptive methods of emotion management. The items were averaged across the emotions to form composites. Cronbach's alphas were .81, .68 and .66 for Inhibition, Emotion Regulation Coping and Dysregulated Expression, respectively.

Parent Emotion Socialisation

Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, and Bernzweig, 1990). The CCNES assessed self-reported parental behaviours in response to children's expressions of negative emotions. Parents rate 12 hypothetical vignettes according to how likely they would be to respond in a given way. Consistent with previous applications of the CCNES (e.g., Suveg, Shaffer, Morelan, & Thomassin, 2011), the subscales were combined to form new composites of *supportive reactions* (problem-focussed, emotion-focussed, expressive encouragement) and *non-supportive reactions* (minimisation, punitive and distress reactions). Internal consistency was good for Non-Supportive reactions (Cronbach's alphas = .87 and .85 for mothers and fathers, respectively) and excellent for Supportive reactions (Cronbach's alphas = .93 and .93 for mothers and fathers, respectively).

Treatment

Treatment involved a cognitive-behavioural manual based program (Cool Kids), which has established efficacy through a number of randomized clinical trials (e.g. Hudson, et

al., 2009). Treatment included psychoeducation, cognitive restructuring, gradual exposure, parent management and coping skills. Treatment was administered in either group (84%) or individual format (16%). Research has shown that treatment outcomes do not differ according to these formats (James, et al., 2013). Trained post-graduate psychology students delivered the 10 session treatment (60-90 minute sessions) and received supervision from a senior clinical psychologist.

Procedure

Ethics approval was received by the Macquarie University Human Research Ethics Committee. Parents and adolescents provided informed written consent and children verbal assent. Participants completed self- report questionnaires assessing child ER, and emotion-related parenting styles at pre-treatment. Families provided anxiety symptom and diagnostic data at pre, post and follow-up (6 or 12 month)[3]

Statistical Analysis

Treatment outcome was determined at post and follow-up by i) the presence / absence of the primary anxiety disorder and all anxiety disorders, and ii) symptom/severity change. First, a series of t-tests were used to examine differences in ER and parenting between children with and without anxiety disorders at post and follow-up. Logistic regressions (Bivariate Logistic) were also conducted to test whether the ER and parent variables predicted diagnostic status (post and follow-up) whilst

[3] This study was conducted across two treatment trials with different follow-up up, points. 18% and 24% of children received a 12-month follow-up for CSR and SCAS, respectively. 82% and 76% received a 6-month CSR and SCAS follow-up, respectively. These data were combined to form one single follow-up point.

controlling for pre treatment severity (CSR ratings were entered at the first step of each regression).

A series of multiple linear regression analyses were used to examine predictors of symptom (mother-reported SCAS) and severity (CSR) change. Each model contained the corresponding pre-treatment symptomatology or severity rating (SCAS or CSR), entered as a covariate at the first step of each regression. Predictor variables were entered separately for each model (mother- and father-reported emotion regulation and negativity/lability, total EESC, child-reported emotion inhibition, dysregulation and regulation, mother- and father-reported supportive and non-supportive reactions). All assumptions of the multiple regressions were met (e.g., independence and multicollinearity).

Results

Table 3 displays the means and standard deviations for the SCAS and CSR scores across time: pre-treatment, post-treatment and follow-up. Data are summarised for the ER and parenting variables comparing children who were anxiety free at post and follow-up in Table 4 (primary anxiety disorder) and Table 5 (all anxiety disorders).

Table 3.
Means and standard deviations for anxiety symptoms and disorder severity ratings across time

	Pre		Post		Follow-up	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*
SCAS	(*n* = 93)		(*n* = 92)		(*n* = 66)	
	36.42	21.21	20.92	12.15	18.85	11.59
CSR	(*n* = 105)		(*n* = 82)		(*n* = 94)	
	6.13	0.96	3.67	1.96	2.91	1.90

Note. Pre = Pre-treatment; Post = post-treatment; SCAS = Spence Child Anxiety Scale; CSR = Clinician Severity Rating for anxiety diagnoses

Prediction of Child Emotion Regulation on Anxiety Disorder Remission

Mother report of children's emotion regulation. Mothers' report of children's ER predicted remission of the primary anxiety diagnosis at post-treatment, $t(76) = .166$, $p < .05$; $d = 0.5$. Children who were free of their primary anxiety disorder at post-treatment were better regulated at pre-treatment than children who were not free of their primary anxiety disorder. ER did not predict remission of children's primary anxiety disorder at follow-up, $t(85) = -1.246$, $p > .05$. For all anxiety disorders, ER did not predict remission at either post or follow-up *(*$p > .05$). Mother's report of children's lability did not predict remission at post or follow-up for primary or all anxiety disorders ($p > .05$).

Father's report of children's emotion regulation. Fathers' report of children's ER did not predict remission of the primary anxiety disorder at post-treatment or at follow-up ($p > .05$). For all anxiety disorders, children's ER predicted remission at post-treatment, $t(66) = .83$, $p < .05$; $d = 0.5$. Children who were free from all anxiety disorders at post-treatment were better regulated at pre-treatment compared to children who were not free from anxiety disorders. ER did not predict remission of all anxiety disorders at follow-up ($p < .05$). Fathers' report of children's negativity/lability predicted remission of the primary anxiety diagnosis at post-treatment $t(65) = -.204$, $p < .05$; $d = 0.6$ and at follow-up $t(70) = .199$, $p < .05$; $d = 0.5$. Children who were free of their primary anxiety disorder at post-treatment and follow-up were less negative and labile at pre-treatment than children who still met diagnostic criteria. For all anxiety disorders, child negativity/lability predicted remission at post-treatment, $t(63) = 1.56$, $p < .01$; $d = 0.7$, but not at follow-up ($p > .05$). Children who were free from all anxiety

disorders at post-treatment were less negative and labile compared to children who still met diagnostic criteria.

Child reported emotion regulation. For child-report, there were no significant differences on either the EESC or CEMS between children who were free of their primary anxiety disorder than those who were not anxiety-free at post-treatment or follow-up. For all anxiety disorders, children who showed remission at post had higher scores on the EESC (e.g., more aware of their emotions and more willing to express them), $t(47) = 4.01$, $p < .05$; $d = 0.7$ than children who did not. No significant differences emerged on the EESC at follow-up ($p > .05$). For the CEMS, children who showed remission from all anxiety disorders at follow-up displayed higher inhibition and less dysregulation across the emotions of sadness and anger at pre-treatment, $t(54) = .51$, $p < .01$; $d = 0.7$ and $t(54) = .367$, $p < .05$; $d = 0.9$, respectively, compared to children who remained clinically anxious. No significant differences emerged on the subscale assessing Regulation (sadness and anger) between children who showed remission and those who did not ($p > .05$)[4].

[4] Logistic regressions, controlling for pre-treatment severity (CSR) were consistent with the t-test results, with some exceptions. Mother's report of children's ER was no longer a significant predictor of primary diagnostic status at post-treatment, OR = 1.13, Wald = 2.90, p >.05. Child reported EESC for any anxiety disorder was no longer significant at post, odds ratio = .1.07, Wald = 3.60 ($p > .05$) and children's reported emotion dysregulation was no longer significant for remission of any anxiety disorder at follow-up, odds ratio = .67, Wald = 2.86 ($p > .05$).

Table 4.
Means and Standard Deviations for Child Emotion Regulation and Parenting for Children with and without their Primary Anxiety Disorder at Post and Follow-Up

	POST		FOLLOW UP	
	ANX-FREE	NONANX-FREE	ANX-FREE	NONANX-FREE
Questionnaire / Subscale	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
ERC - Mother				
*Emotion Regulation**	(n = 78)		(n = 87)	
	25.61 (3.09)*	23.83 (3.85)	25.25 (3.56)	24.25 (3.74)
Lability/Negativity	(n = 76)		(n = 85)	
	29.32 (6.02)	32.18 (7.24)	29.42 (6.18)	31.66 (7.01)
ERC- Father				
Emotion Regulation	(n = 70)		(n = 76)	
	26.24 (3.00)	25.08 (3.94)	25.63 (3.31)	24.89 (3.25)
Lability/Negativity *	(n = 67)		(n = 72)	
	28.81 (5.28)*	32.28 (5.95)	29.64 (5.34)*	32.44 (6.25)
EESC – Child	(n = 49)		(n = 47)	
	45.2 (10.08)	39.15 (11.35)	41.41 (11.30)	40.80 (11.46)
CEMS	(n = 59)		(n = 56)	
Inhibition	7.67 (2.47)	6.83 (1.51)	7.63 (2.23)	6.86 (1.49)
Dysregulation	5.29 (1.46)	5.59 (1.33)	5.22 (1.31)	5.61 (1.54)
Regulation	8.05 (1.94)	7.24 (2.21)	7.62 (1.99)	7.81 (2.34)
CCNES - Mother				
	(n =59)		(n = 56)	
Supportive	5.08 (0.69)	5.12 (0.80)	5.14 (0.74)	5.17 (0.78)
Non-Supportive	2.66 (0.81)	2.52 (0.57)	2.49 (0.71)	2.63 (0.56)
CCNES - Father	(n = 56)		(n = 53)	
Supportive	4.89 (0.66)	4.87 (0.73)	4.79 (0.83)	4.92 (0.62)
Non-Supportive	2.67 (0.63)	2.81 (0.62)	2.70 (0.49)	2.68 (0.49)

Note. ANX-FREE = anxiety-disorder free; NONANX-FREE = non anxiety-disorder free; *p < .05 and †p < .01 The mean was significantly different from the NONANX-FREE group at the critical alpha; Post = post-treatment; ERC = Emotion Regulation Checklist; EESC = Emotion Expression Scale for Children; CEMS = Child Emotion Management Scales; CCNES = Coping with Children's Negative Emotions Scale

Table 5.
Means and Standard Deviations for Child Emotion Regulation and Parenting for all Anxiety Disorders at Post and Follow-up.

	POST		FOLLOW UP	
	ANX-FREE	NONANX-FREE	ANX-FREE	NONANX-FREE
Questionnaire / Subscale	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
ERC – Mother	(n = 76)		(n = 87)	
Emotion Regulation	25.50 (3.45)	24.27 (3.66)	25.11 (3.44)	24.71 (3.81)
	(n = 74)		(n = 85)	
Lability/Negativity	29.21 (6.49)	31.58 (6.96)	29.03 (6.44)	31.16 (6.55)
ERC – Father	(n = 68)		(n = 76)	
*Emotion Regulation**	26.76 (2.93)*	25.09 (3.26)	25.53 (3.35)	25.21 (3.27)
	(n = 65)		(n = 72)	
Lability/Negativity†	27.79 (6.25)†	31.87 (5.47)	29.81 (5.15)	31.37 (6.30)
EESC – Child*	(n = 49)		(n = 65)	
	47.67 (11.69)*	39.50 (10.71)	41.24 (11.45)	41.08 (11.31)
CEMS - Child	(n = 59)		(n = 56)	
Inhibition †	8.23 (2.51)	6.82 (1.63)	8.13 (1.97)†	6.73 (1.82)
Dysregulation *	5.00 (1.49)	5.62 (1.33)	4.92 (1.21)*	5.72 (1.46)
Regulation	8.15 (1.99)	7.36 (2.17)	7.67 (1.99)	7.71 (2.22)
CCNES - Mother	(n = 59)		(n = 56)	
Supportive	5.00 (0.76)	5.13 (0.76)	5.02 (0.77)	5.26 (0.73)
Non-Supportive†	2.68 (1.03)	2.54 (0.52)	2.30 (0.39)†	2.73 (0.75)
CCNES - Father	(n = 56)		(n = 53)	
Supportive	4.92 (0.58)	4.87 (0.74)	4.72 (0.85)	4.94 (0.67)
Non-Supportive	2.71 (0.61	2.77 (0.63)	2.58 (0.55)	2.75 (0.55)

Note. ANX-FREE = anxiety-disorder free; NONANX-FREE = non anxiety-disorder free; *p < .05 and †p < .01. The mean was significantly different from the NONANX-FREE group at the critical alpha; Post = post-treatment; ERC = Emotion Regulation Checklist; EESC = Emotion Expression Scale for Children; CEMS = Child Emotion Management Scales; CCNES = Coping with Children's Negative Emotions Scale

Prediction of Child Emotion Regulation on Symptom Change and Diagnosis Severity

Results of the multiple regression analyses examining child ER as a predictor of symptom change and diagnostic severity are summarised in Table 6.

Mother report of children's emotion regulation. After controlling for initial symptoms, ER was not a significant predictor of anxiety symptoms (SCAS) at post, or follow-up. Children's Negativity/Lability also did not predict change in anxiety scores at post-treatment or follow-up. For changes in clinical severity (CSR), ER was a significant predictor at post-treatment. Children with a less severe anxiety diagnosis at post-treatment were better regulated at pre-treatment compared to children with more severe anxiety at post-treatment. ER was not a predictor of change in severity at follow-up. Children's Negativity/Lability did not predict severity change at either post-treatment or at follow-up.

Father report of children's emotion regulation. After controlling for initial symptoms, ER was not a significant predictor of mother-reported anxiety symptom change (SCAS) at post or follow-up. The Negativity/Lability subscale also did not predict change in mother-reported anxiety symptoms (SCAS) at post or follow-up. For changes in diagnosis severity (CSR), child ER was a significant predictor at post. Children with less severe anxiety at post-treatment were better regulated at pre-treatment compared to children with more severe anxiety at post-treatment. Children's Negativity/Lability was a significant predictor of severity change at post and follow-up. Children with less severe anxiety at post-treatment scored lower on negativity and lability at pre-treatment compared to children with more severe anxiety at post-treatment.

Child-reported emotion regulation. After controlling for initial symptoms, the EESC did not predict change in anxiety symptoms at post-treatment or follow-up. The

EESC also did not predict diagnostic severity at either post-treatment or follow-up. None of the subscales of the CEMS (Emotion Inhibition, Dysregulation, Regulation) predicted change in anxiety scores at post or follow-up. With regard to diagnostic severity, Emotion Inhibition, Dysregulation and Regulation were not significant predictors at post-treatment or follow-up.

Prediction of Parental Emotional Socialisation on Anxiety Disorder Remission

Mother- and-father reported parenting reactions (supportive and non-supportive subscales) on the CCNES did not predict remission of the primary anxiety disorder at post-treatment or at follow-up ($p > .05$). For all anxiety disorders, ER did not predict remission at either post or follow-up *(*$p > .05$). For all anxiety disorders, mothers' non-supportive reactions significantly predicted remission at follow-up. Mothers of children who were free of all anxiety disorders at follow-up reported using significantly fewer non-supportive reactions to children's negative emotions at pre-treatment compared to mothers of children who were not anxiety-disorder free at follow-up. Mother's report of children's lability did not predict remission of either the primary anxiety disorder or all anxiety disorders, at either post-treatment or follow-up ($p > .05$).[5]

Prediction of Parental Emotion Socialisation on Symptom Change and Diagnostic Severity

Maternal reactions to children's negative emotions. After controlling for initial symptoms, mothers' supportive and non-supportive reactions did not predict change in

[5] After controlling for pre-treatment severity, regression analyses showed that mothers' non-supportive reactions continued to be a significant predictor of remission for all anxiety disorders at follow-up, OR = .08, Wald = 5.98 ($p < .01$).

anxiety symptoms at post-treatment or follow-up (see results in Table 4). With regard to diagnostic severity, supportive and non-supportive reactions did not predict change at either post-treatment or follow-up.

Paternal reactions to children's negative emotions. After controlling for initial symptoms, fathers' supportive and non-supportive reactions did not predict symptom change at post-treatment or follow-up. With regard to diagnostic severity, supportive and non-supportive reactions did not predict change in severity at post-treatment or follow-up.

Table 6.
Summary of Multiple Regression Analyses for Anxiety Symptom Change and Severity at Post-treatment and Follow-up

	SCAS (post)				SCAS (follow-up)				CSR (post)				CSR (follow-up)			
Variable	beta	R^2	R^2 change	*p*	beta	R^2	R^2 change	*p*	*beta*	R^2	R^2 change	*p*	*beta*	R^2	R^2 change	*p*
ERC																
Mother – ER	-.08	.07	.08	.45	-.03	.07	.07	.84	-.27	.09	.16	.01**	-.11	.03	.04	.31
Mother – Neg	.10	.07	.08	.37	.08	.07	.07	.55	.18	.09	.12	.10	.16	.03	.05	.15
Father – ER	-.10	.07	.08	.39	.10	.07	.08	.45	-.23	.09	.14	.04*	-.07	.03	.03	.55
Father – Neg	.13	.07	.09	.27	.14	.07	.08	.31	.29	.09	.17	.01**	.30	.03	.11	.01**
EESC	-.18	.07	.11	.24	-.06	.07	.07	.68	-.10	.09	.10	.46	.06	.03	.03	.68
CEMS																
Inhibition	-.01	.07	.07	.94	-.15	.07	.09	.31	-.09	.09	.10	.49	-.10	.03	.04	.46
Dysregulation	-.13	.07	.09	.36	.06	.07	.07	.70	.08	.09	.09	.54	.24	.03	.08	.08
Regulation	.06	.07	.08	.70	-.11	.07	.08	.48	-1.24	.09	.11	.22	-.08	.03	.03	.55
CCNES																
Mother – Supportive	-.04	.07	.08	.78	-.09	.07	.07	.54	.06	.09	.09	.66	.03	.03	.03	.80
Mother – Non-supportive	-.03	.07	.08	.83	.08	.07	.07	.57	-.00	.09	.09	.10	.13	.03	.21	.34
Father- Supportive	-.07	.07	.08	.62	.09	.07	.07	.55	.09	.09	.09	.51	.11	.03	.04	.43
Father- Non-supportive	-.05	.07	.08	.07	.15	.07	.11	.21	-.04	.09	.09	.76	.06	.03	.03	.66

Note. Post = post-treatment; SCAS = Spence Child Anxiety Scale; CSR = Clinician Severity Rating; ERC = Emotion Regulation Checklist; EESC = Emotion Expression Scale for Children; CEMS = Children's Emotion Management Scales; CCNES = Coping with Children's Negative Emotions Scale.
< .05, ** p < .01; R^2 change represents the addition of the study variable (step 2) after pre-treatment SCAS / CSR (step 1) for each multiple regression

Discussion

The aim of the current study was to examine child ER and parental emotion socialisation as potential predictors of CBT outcome in children with anxiety disorders. The overall findings were unable to provide a clear or consistent pattern for the role of children's ER and parenting styles in predicting treatment outcome. There was mixed support for the hypothesis that children with poorer pre-treatment ER would show less change in anxiety symptoms and non-remission of anxiety diagnosis. However, this varied depending on who reported on children's ER (i.e., mother, father or child), end point diagnostic status versus symptom change, primary anxiety disorders versus all anxiety disorders and finally the time point by which re-assessment occurred (i.e. post or follow-up). There was minimal support for the hypothesis that parenting styles characterized by either less supportive or more non-supportive reactions to children's emotions (at pre-treatment) would predict less change in child anxiety symptoms and poorer rates of remission.

Of all variables, the most consistent predictor of treatment outcome was father reports of children's negativity/lability. These results suggested that children who were more emotionally negative or labile (e.g. exhibited wide mood swings) and were more dysregulated in their expression of negative affect (e.g. prone to angry outbursts) at pre-treatment, continued to meet criteria for their primary anxiety disorder at both post-treatment and follow-up, failed to show remission from all anxiety disorders at post-treatment and demonstrated less change in the severity of their diagnosis (CSR) at post-treatment compared to children who were less emotionally negative or labile. These findings are consistent with previous research by Bender and colleagues (2012) showing that emotion dysregulation significantly predicted childhood anxiety symptoms. Although Bender did not examine treatment outcomes, their study

nonetheless highlights the role emotion dysregulation plays in child anxiety and adds support to the emotion dysegulation model of anxiety disorders (see Suveg, et al., 2010).

Two additional, albeit inconsistent, ER predictors of treatment outcome were based on children and mother reports. For child-report, the extent to which children inhibited their emotions (CEMS; sadness and anger) predicted remission of all anxiety disorders at follow-up, over and above pre-treatment diagnostic severity. Specifically, children who reported higher levels of emotion inhibition at pre-treatment were found to be anxiety-free at follow-up compared to children who reported less emotion inhibition at pre-treatment. This finding was unexpected. Suppressing one's emotions is typically viewed as a maladaptive ER strategy (see Gross, 2008 for a review), as it tends to increase the intensity of the emotional experience (e.g., Richards & Gross, 1999). In the context of CBT, it could be that children who inhibit their emotional distress (i.e. 'hide' negative emotion), exude a more willing or composed attitude to treatment that could serve them well when facing challenging tasks, such as exposure. Alternatively, it could be that children who hide their emotions simply present as less 'distressed' and thus score lower on diagnostic criteria at follow-up. Although the current study did not examine worry regulation, the finding that higher emotion inhibition predicted remission was discordant with the results reported by Suveg and colleagues (2009) who found that children's reduced use of worry inhibition following CBT was a significant predictor of anxiety symptom change.

With regard to mother reports, the only significant predictor that emerged over and above initial severity, was children's use of adaptive ER strategies (Emotion Regulation subscale of the ERC). Specifically, results demonstrated that children who were more emotionally flexible and expressed emotions in culturally appropriate ways

(e.g. verbalised how they were feeling, recovered quickly from emotional upsets) at pre-treatment, showed a significant reduction in the severity of their disorder (CSR) at follow-up compared to children who were poorer at regulating emotions. This same result also emerged for father reports of children's ER, providing some support for this variable as a more consistent predictor of outcome. There was also suggestion that mother reports of children's ER predicted remission from the primary anxiety disorder at post-treatment. However, this result was no longer significant when taking into consideration children's initial severity. In this instance, remission was more strongly predicted by being less impaired or distressed by the anxiety disorder at pre-treatment than children's ability to regulate emotion.

For parental emotional styles, only one significant predictor emerged. Children of mothers who reported more negative behaviours in response to children's emotions (e.g. punishing their child, minimising their child's emotions or becoming distressed themselves), were more likely to continue to meet diagnostic criteria at follow-up compared to children of mothers who reported using fewer non-supportive reactions. To an extent, this result resembles the finding by Festen and colleagues (2013) that higher levels of maternal warmth at pre-treatment predicted improvements to children's anxiety symptoms at follow-up. Together, these findings suggest that mothers whom their children perceive as being more supportive, available and less prone to 'negativity', fair better from CBT than children whose mothers do not share these characteristics. Perhaps mothers who are less non-supportive are better at tolerating negative emotion and thus more likely to assist their child with completing and maintaining treatment goals (e.g. exposure tasks, challenging worries). This interpretation remains speculative, however, as in this study parental emotional tolerance was not assessed.

Overall, this study bridges gaps in the literature by evaluating for the first known time, how well child ER and emotion-related parenting styles predict clinically anxious children's response to treatment. However, there are several limitations that are worth noting. First, the study was not primarily designed as a predictor study, and as such, carries a number of drawbacks including a relatively small sample size. Second, data were combined from two different treatment trials, which means that some predictors were based on measures that were completed by a smaller sub-set of the total sample, limiting the power to potentially detect further findings. Third, combining six-month and 12-month follow-up points may have influenced our findings and possibly prevented the identification of unique predictors at each follow-up point. Finally, the findings may only be generalised to individuals who are Caucasian and from predominantly middle-class socio-economic backgrounds.

In conclusion, this study was unable to provide a clear or consistent pattern of predictors of treatment outcome using variables of child ER and emotion-related parenting styles. As highlighted in recent reviews (e.g., Knight, et al., 2014), this inconsistency is not uncommon and a clear set of predictor variables for poor treatment response is yet to be identified. Despite this, the current study provided some support for the notion that children's emotion functioning at pre-treatment may impact their response to CBT. The data provided preliminary evidence that children's dysregulated emotion might be a particularly important consideration, which fits with emerging theoretical models (e.g. Suveg, et al., 2010). Maternal non-supportive reactions (e.g. punitive behaviours, minimising emotions) to children's negative emotions may also be a relevant pre-treatment factor, although this requires further investigation. Future research is encouraged to continue the examination of these child and parenting variables as they relate to treatment outcomes for clinically anxious children.

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CHAPTER SIX

GENERAL DISCUSSION

Overview

Childhood anxiety disorders are among the most common forms of psychopathology (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003) and confer significant psychosocial impairments to several areas of functioning, including family relationships, academic coping, peer relationships and personal well-being (e.g., Albano & Detweiler, 2001; Morris & March, 2004; Van Ameringen, Mancini, & Farvolden, 2003). Added to this, is the high risk of co-morbidity (Angold, Costello, & Erkanli, 1999) and a typically enduring pattern of psychopathology (Seligman & Ollendick, 1998). Familial factors have been linked to the aetiology and maintenance of the anxiety disorders, with both genetic and environmental pathways identified (Rapee, Schniering, & Hudson, 2009; Vasey & Dadds, 2001). More recently, parental emotion socialisation practices are showing relevance to childhood anxiety disorders (e.g., Suveg, et al., 2008) in helping to understand the emotion-related deficits among anxiety-disordered children (Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004). This line of research is helping to inform aetiological and maintenance models of child anxiety (Bender, Reinholdt-Dunne, Esbjørne, & Pons, 2012; Jacob, Thomassin, Morelen, & Suveg, 2011) and to enhance effective treatment strategies (Southam-Gerow, 2013).

The primary aim of this thesis was to contribute to this important and emerging field of parental emotion socialisation and child emotion regulation in children with an anxiety disorder. To this end, there were three main objectives: (i) to examine the nature of emotion regulation, for a range of emotions (i.e., fear, anger and sadness) in clinically anxious children; (ii) identify aspects of emotion socialisation that may relate to or help explain emotion regulation among anxious children; and (iii) determine if

child emotion regulation or parental socialisation of emotion influences treatment outcomes in clinically anxious children. Thus, the examination of parental reactions to children's negative emotions was carried out first, and was presented in Chapter Two. This paper provided initial insight into emotion socialisation practices through parents' self-report of how they typically respond to their children's emotional displays. In addition, the paper drew attention to areas related to emotion regulation among anxious children and how this links to parental reactions.

Following this, mother and child dyads were observed interacting with each other during an anxiety-provoking task. The influence of maternal and child anxiety status on parenting in the context of child negative emotion was tested, and reported in Chapter Three. Next, Chapter Four presented an investigation into the underlying beliefs associated with parental emotion socialisation, along with an observation of the parental behaviours during an emotionally-charged discussion between parents and children. Child emotion regulation was also assessed, which involved multiple methods of inquiry (interviews, self-report and observation) to gain a range of insights. Finally, child emotion regulation and parental emotion socialisation were examined as predictors of treatment outcome in a sample of clinically anxious children, and was reported in Chapter Five.

Summary of Results

The results of this thesis can be summarised according to three key findings. These findings were in the areas of: child emotion regulation, parental emotion socialisation and treatment outcomes.

1. Child Emotion Regulation

The studies reported in Chapters Two and Four demonstrated that children with an anxiety disorder had a poorer overall ability to regulate their emotions compared to children who did not have an anxiety disorder. These difficulties fell into two broad areas of emotion functioning: (i) *adaptive emotion regulation (or coping)*, which refers to developmentally appropriate reactions to positive and negative emotions and the awareness of emotions (e.g., trying to calmly settle a problem; recover quickly from an emotional upset) and (ii) *maladaptive emotion regulation (or emotion dysregulation)*, which refers to the use of emotional suppression or inappropriate emotional expression, with behaviours and mood patterns characterised as inflexible and emotionally negative / labile (e.g., exhibiting wide mood swings; moping around when sad).

Adaptive emotion regulation. Clinically anxious children were rated by their parents as having significant difficulty regulating their emotions compared to children without an anxiety disorder. In addition, the study presented in Chapter Two asked children to provide their own perception of how well they cope with negative emotion. Results demonstrated that anxiety-disordered children rated themselves as experiencing greater difficulty managing the emotions of sadness and anger compared to non-anxiety disordered children. This means that when anxious children feel upset, they are less inclined to employ strategies that might help them feel better (such as doing something different until they no longer feel sad or calm down) and have difficulty with expressing their emotion in appropriate ways, such as communicating when they feel sad or angry.

These findings are consistent with earlier research conducted by Suveg and Zeman (2004) who similarly demonstrated that clinically anxious children experience difficulty regulating emotion. In addition, they showed through child-interviews on sadness, anger and worry, that anxious children generally feel less confident about their

ability to manage emotional situations. Southam-Gerow and Kendall (2000) similarly found anxious children to have less understanding and confidence with modifying or hiding a range of emotions. As such, not knowing how to modify one's emotions or feeling less self-efficacious about doing so, may help explain the relatively limited use of adaptive strategies among anxious children (Saarni, 2011). Low self-confidence may also be the result of having experienced several negative outcomes in the context of heightened emotion (e.g., nervousness negatively impacting on a performance) and/or perhaps is due to repeatedly withdrawing from or avoiding emotionally-provoking situations (e.g., Barrett, Rapee, Dadds, & Ryan, 1996), and thus failing to develop a sense of competence to manage such situations (e.g., Rapee, 1997).

Furthermore, the results of the paper presented in Chapter Two demonstrated that in comparison to nonclinical children, clinically anxious children were less aware of their own emotions. For instance, they were more likely to endorse items such as, "I often do not why I am angry" and "I often do not know how I am feeling" (based on the Emotion Expression Scale for Children). It stands to reason therefore, that poor emotional awareness might inevitably lead to greater difficulties managing emotions (since the child does not know what they are feeling; see Halberstadt, Denham, & Dunsmore, 2001) and therefore experience more frequent or ongoing difficulties with negative affect. In a community sample of adolescents, Heaven, Ciarrochi and Hurrell (2010) found that a measure of alexithymia (i.e., poor emotional awareness) related to high levels of negative emotion, such as sadness and fear and to low levels of positive emotion. Similarly, in another community sample of children ages 9 to 12 years, Zeman, Shipman and Penza-Clyve (2001) found that poor emotional awareness was strongly related to internalising symptoms. Thus, it is possible that poor emotional

awareness is one way in which emotion management difficulties and symptoms of psychopathology, such as anxiety, develops.

Maladaptive Emotion Regulation/Dysregulation. The study reported in Chapter Three included parent interviews on the nature of children's emotional experiences (i.e., ask parents to describe what happens when their child is sad, angry or afraid and how their child typically resolves the emotion). Across all three emotion types of fear, anger and sadness, clinically anxious children were found to be significantly more dysregulated in their expression of negative emotion (e.g., shouting, slamming doors, sulking), tended to take longer to calm down from the upset, and managed the emotion (or situation that led to the emotion) in a more maladaptive manner (e.g., refusing to talk, withdrawing) than nonclinical children. Furthermore, parents of anxious children reported that their children's negative emotions tended to blend together, so that for instance, expressions of sadness would often lead to expressions of anger (and vice versa). They further reported that the experience of dysregulated emotion in their children interfered across numerous life domains, such as at home (family life), school and in friendships. This result highlights that it is more than just anxiety-related emotions that are impacting on anxious children's functioning.

In addition, across the studies presented in Chapters Two and Four, parents in the clinical group rated their children as being more emotionally inflexible, negative and labile than parents of nonclinical children. This was also consistent with children's self-report, which indicated that anxious children rated themselves as having a tendency to express sad and angry emotions in more maladaptive ways than nonclinical children (such as, saying mean things to others when mad, crying and carrying on). Anxious children also indicated a preference to not communicate emotions – to keep feelings to themselves and to not talk about them. Finally, results from the parent-child interaction

tasks (speech-preparation and conflict discussion) that were reported in Chapters Three and Four, showed that observational indicators of emotional distress were significantly higher for children in the anxious groups compared to children of the nonclinical groups. This measure was based on a code that assessed the presence of negative emotion/discomfort as evidenced by body language, facial expression, emotion expression (clear emotional signals, e.g., crying) and child's tone of voice. This finding provided evidence of anxious children's emotion regulation and heightened response to emotionally-arousing situations.

The pattern of findings for anxious children's emotion dysregulation reported in this thesis is consistent with the results from previous research (e.g., Suveg, et al., 2008; Suveg & Zeman, 2004). For example, in an observation study on family emotion discussions with children ages 8 to 13 years, anxious children were found to display less positive affect, were more likely to suggest emotion regulation strategies that were maladaptive (e.g., avoidance or withdrawal) and showed evidence of poorer problem-solving skills when discussing ways to manage emotion (Suveg, et al., 2008).

Conclusions. In sum, the papers in this thesis demonstrated clear and consistent evidence for emotion regulation difficulties among clinically anxious children. Not only were they less likely to employ strategies to adaptively manage negative emotions, but were also more likely to use maladaptive emotion techniques. Moreover, emotion regulation difficulties occurred across a range of emotions, suggesting that anxious children have fundamental difficulties with emotion, as opposed to just anxiety or fear. A factor that differentiated this research from previous work, was the investigation of anxious children's self-reported level of emotional awareness and reluctance to communicate emotions to others. This potentially highlights a continuum of deficient emotional regulation, where from one end children are reluctant to express emotion,

through to the other end where children are expressing emotions in highly dysregulated ways. Thus, anxious children may need assistance with modulating their regulation techniques, along with increasing their emotional awareness. Another factor that differentiated this research was the finding from parent interviews that emotion dysregulation occurred across multiple settings (e.g., home, school) and this is likely to be compounding the already impaired functioning in these areas (Greco & Morris, 2004). Finally, the results were consistent across both parent and child reports, in addition to experimenter-observation, and across all three studies (Chapters Two, Three and Four) demonstrating clear patterns of emotion regulation deficit.

2. Parental Emotion Socialisation

The second major finding that this thesis demonstrated was the tendency for parents of clinically anxious children to respond to their children's negative emotions in sub-optimal ways. This finding was consistent across all three studies. Slightly different aspects of emotion socialisation were examined and a variety of assessment methods used (e.g., parent report, interviews and observation). Although results were not completely consistent across all measures, there was nonetheless a good degree of support for the distinction between parents of anxious and non-anxious children in the area of emotion-related parenting.

Chapter Two showed that in comparison to mothers of nonclinical children, mothers of anxious children tended to espouse less supportive emotion socialisation practices when reacting to their children's emotions. Specifically, they were less inclined to respond with strategies designed to soothe their child's emotion or to help them feel better (emotion-focussed strategies), such as providing comfort or talking about something pleasant. They were also less likely to assist their child with problem-

solving the situation that caused the negative emotion or to help them cope with the stressor (problem-focussed), such as helping them to figure out a solution to the problem. Even though mothers of anxious children did not report using more negative strategies (i.e., non-supportive reactions) than mothers of non-anxious children, the finding that they reported fewer supportive responses has implications for anxiety-disordered children's emotion regulation. According to Gottman, Katz and Hooven (1997), parental responses that provide children with emotional comfort and support helps to facilitate the development of children's own emotion regulatory skills and teaches them that emotions are welcome to be expressed and communicated. Therefore, if anxious children are not receiving optimal emotional support from their parents, nor are offered regular opportunities to communicate their emotional concerns, they may further be inclined to internalise their feelings and experience more intense anxiety symptoms as a result (e.g., Bradley, 2000; Zeman, et al., 2001).

Conversely, a trend emerged for paternal reactions in the anxious group to endorse more non-supportive reactions (e.g., punitive, distress and minimising reactions). This may warrant further investigation, as in previous research with a sample of clinically anxious children (e.g., Suveg, et al., 2008), fathers were found to show more negative affect and to be less involved during emotion discussions with their anxious child than fathers of nonclinical children. However, when fathers overall (clinical and nonclinical) were compared to mothers, they showed significantly less supportive reactions, indicating that fathers irrespective of their child's anxiety status are less inclined to encourage their child to express emotion or to engage in emotion- and problem-focussed strategies. This finding is consistent with previous research among nonclinical populations, which has found fathers to be generally less supportive in their reactions to children's emotions than mothers (Baker, Fenning, & Crnic, 2011;

McElwain, Halberstadt & Volling, 2007). In addition, among a sample of clinically depressed adolescents, Katz and colleagues (2014) found that fathers were less likely to use responses designed to enhance their child's positive affect (such as showing less interest in their child's positive news or mood). Just as this result highlights a potential implication for the treatment of adolescent depression (i.e., improve paternal engagement with and reinforcement of children's positive affect), it also suggests the possibility that paternal emotion socialisation practices might similarly show unique contributions to anxious children's emotion regulation and treatment outcomes, although further empirical study is needed.

In addition, relations between emotion socialisation and children's emotion regulation were observed. In general, supportive reactions that encourage children to express emotion and to help them feel better, predicted better emotion regulation (adaptive coping) in children. Conversely, non-supportive reactions that discourage children to express emotion and involve the use of negative strategies (such as punishment), predicted poorer adaptive coping and higher dysregulated emotion (maladaptive coping) in children. These findings are consistent with several studies reported in the developmental and family psychology literature that show links between supportive parenting and better emotion regulation coping in children (e.g., Davidov & Grusec, 2006; Eisenberg, Fabes, & Murphy, 1996; Gottman, et al., 1996).

The study in Chapter Three sought to further investigate the supportive and non-supportive emotion socialisation practices, as detailed in the previous paper (Chapter Two), by using an observational approach. As such, interactions between mothers and children were observed during an anxiety-provoking situation (speech preparation task) as a way of eliciting negative emotion. The sample was comprised of children (anxious / non-anxious) and mothers (anxious / non-anxious). The aim of this design was to also

test the influence of both child and maternal factors (i.e., anxiety) on maternal reactions during an anxiety-provoking situation, since reciprocal models of child and parent behaviours have been implicated in models of child anxiety (e.g., Hudson & Rapee, 2004). This research used pre-existing data from a previous study (Gar & Hudson, 2008), which had been collected from mothers only and, as such, did not examine the role of fathers.

Several findings emerged from this study. First, all mothers (regardless of their anxiety status) displayed less supportive parenting to clinically anxious children compared to non-anxious children. That is, they tended to interact in less accepting/sensitive, warm, validating and enthusiastic ways. Mothers in dyads with anxious children also showed less insight into their child's emotional experience/attempts at completing the task and displayed fewer problem-solving behaviours. These findings are consistent with the results of the previous paper (Chapter Two) that showed that mothers of anxious children reported using less supportive reactions when responding to children's emotions. Second, it was shown that this level of maternal support was dependent on the anxiety status of the mother. Specifically, mothers *without* an anxiety disorder were significantly less supportive during interactions with anxious children in comparison to their interactions with non-anxious children and anxious mothers interacting with anxious and non-anxious children. Thus, symptoms of child anxiety could trigger lower levels of supportive parenting among mothers who are non-anxious. These findings lend support to reciprocal models of parent-child behaviour patterns (e.g., Hudson & Rapee, 2004; Williams, Kertz, Schrock, & Woodruff-Borden, 2012) and also suggests the possibility that non-anxious mothers experience particular difficulty relating to or coping with their child's anxiety problem and, therefore, respond with less support. Third, it was found

that non-supportive maternal reactions were significantly higher in dyads where either the mother or the child had an anxiety disorder. In other words, the presence of anxiety anywhere in the dyad elicited more negative parenting behaviours (e.g., criticising, correcting, intrusiveness, minimising emotions). This result is similar to an earlier study conducted by Hudson, Comer, and Kendall (2008), who found that discrete displays of negative emotion from anxious children elicited more negative behaviours from their parents, such as criticalness and dismissiveness, compared to parental behaviours towards nonclinical children. Finally, the most pleasant interactions were those that occurred between non-anxious mothers and non-anxious children. In these interactions, mothers were found to display the highest level of supportive parenting (e.g., warmth, sensitivity and acceptance) than in other dyads that involved the presence of anxiety. This finding is consistent with earlier research by Williams and colleagues (2012) who found non-anxious parent and child dyads to espouse the highest levels of positivity and warmth, thus again providing support for reciprocal models of parent-child behaviours.

The study presented in Chapter Four examined parents underlying "meta-emotion structure" – or feelings about feelings (Hooven, Gottman, & Katz, 1995) and observed parents interacting with their child during a negative emotion discussion (conflict task). Gottman, Katz and Hooven (1996) posit that parental meta-emotion philosophy influences the manner in which parents socialise their children's experience and expression of emotion. This theory maintains that the beliefs, thoughts and attitudes parents hold regarding emotions will guide their emotion socialisation behaviours, in addition to the regulation and expression of their own emotion. For example, parents who believe that children's expression of negative emotion are a good opportunity for teaching or closeness, will be more inclined to respond to their child's emotional displays with sensitivity, support and validation (i.e., emotion coaching; Gottman, et al.,

1996). Similarly, parents who are more aware and accepting of their own emotions will also be more likely to communicate on the topic of emotions and display appropriate emotion expression and regulation. In both instances, children gain insights into the nature and causes of emotion (i.e., develop emotion knowledge) and develop skills regarding their appropriate regulation and expression (Morris, Silk, Steinberg, Myers, & Robinson, 2007). Thus, given the differences in parental practices found so far in the thesis between clinical and nonclinical groups (Chapters Two and Three), it was of interest to inspect parents' underlying emotion beliefs. Furthermore, meta-emotion theory has been instrumental in helping to understand typical child emotional development and functioning, but has more recently been used to inform research concerned with atypical populations (e.g., adolescent depression; Katz, et al., 2014).

The results of this paper showed that parents of anxious children were significantly less aware of their own emotions and the emotions of their children. This was especially apparent for the emotion of fear (relative to sadness and anger). Secondly, from both observation and interview responses, parents of clinically anxious children were less coaching of their children's emotions. That is, parents of anxious children reported being less inclined to teach their children strategies to help cope with emotions and were unclear about how to effectively deal with their children's emotions. This was apparent during the interactions with their children, where they displayed less sensitivity, acceptance and warmth, offered fewer problem-solving strategies (teaching), appeared less engaged with their child and were less inclined to validate or encourage their child to express emotions and thoughts. Furthermore, parents of anxious children also tended to express more negative behaviours (e.g., criticising, minimising emotion, intrusiveness) when interacting with their children, displaying what Gottman and colleagues (1996) refer to as "emotion dismissing" parenting. These

findings parallel that of previous studies on emotion parenting in families of anxious children, where for example, Suveg and colleagues (2008) found parents of anxious children as being more likely to discourage emotion discussions and to engage in less emotion explanation than parents of non-anxious children. Thus, the evidence of less coaching behaviours among parents of anxious children (as observed in the parent-child interactions) appears to be consistent with their meta-emotion philosophy (as found on the parent interviews). This fits with Gottman and colleagues' (1997) hypothesis that parental meta-emotion structure guides emotion socialisation behaviours. Furthermore, the finding that parents of anxious children were lower on emotion coaching and that anxious children espouse emotion regulation deficits (Chapters Two and Four), is also consistent with Gottman's empirical research showing associations between emotion socialisation practices and child emotion regulation.

Surprisingly, evidence of these emotion coaching and dismissing behaviours between the groups were not found on the self-report questionnaire for this sample. The only finding that emerged was for fathers (across clinical and nonclinical groups) to endorse more emotion coaching and emotion dismissing attitudes than mothers in this sample. As discussed in the paper, there are several possibilities to help explain this finding, such as, the nature of bias (social desirability) associated with self-report measures and the utility of a short questionnaire to assess the depth and range of meta-emotion structure and associated behaviours.

Conclusions. The findings on parental emotion socialisation practices reported in this thesis add to the growing body of research concerned with understanding links between parenting and emotion-related deficits among anxious children. The pattern of parenting behaviours was shown to be mostly consistent throughout the three Chapters, revealing a trend for parents of anxious children to behave in less supportive (less

coaching) and more non-supportive (dismissing) ways when responding to or interacting with their children in situations involving negative emotion. Moreover, compared to parents in the nonclinical group, the underlying meta-emotion structure of parents in families of anxious children was low on emotion coaching, thus providing unique insight into *why* parents of anxious children may use more maladaptive methods of coping with their child's anxiety (such as intrusiveness, overprotection).

3. Treatment Outcomes

The paper presented in Chapter Five demonstrated that aspects of child emotion regulation and parental emotional socialisation predicted treatment outcomes in anxious children following cognitive behavioural therapy (CBT). However, the findings were largely mixed and this was due to several factors. This included, a relative lack of consistency across measures, reporters (mothers, fathers and children), anxiety disorders (primary versus all disorders), outcome measure (symptom change versus endpoint diagnostic status) and re-assessment (post-treatment versus follow-up). The most consistent predictor of treatment outcome to emerge was that of father reports of children's negativity/lability. Specifically, father reports of children's pre-treatment levels of negativity/lability predicted both remission from children's primary anxiety at post-treatment and follow-up, remission from all anxiety disorders at post-treatment and change in the severity of their diagnosis. This meant that children who more emotionally labile (moody), negative and more dysregulated prior to commencing treatment responded less well to CBT compared to children who were less emotionally negative and dysregulated. This result corresponds with the finding reported by Klay, Heinrichs, Bender and Tuschen-Caffier (2012) who investigated maladaptive emotion regulation as a treatment change process among socially anxious children. They found

that a reduction in children's use of maladaptive strategies (e.g., less use of withdrawal) significantly predicted improvements to children's anxiety symptoms at post-treatment. Together, these findings suggest that targeting anxiety-disordered children's maladaptive emotion regulation during treatment might help with ameliorating their anxiety symptoms along with potential remission.

Similarly, children who were more emotionally regulated at pre-treatment (i.e., showed more adaptive coping, quicker recovery from emotional upsets) demonstrated improvements to the severity of their anxiety disorder at follow-up compared to children who were less well regulated at pre-treatment. There was also indication that mother reports of child emotion regulation predicted remission of children's primary anxiety. However, this result was no longer significant after taking into consideration children's initial anxiety severity, suggesting that pre-treatment severity was a more important predictor of remission than was children's emotion regulation.

The only child-reported pre-treatment variable of emotion regulation found to predict treatment was the extent to which children inhibited their emotions (across anger and sadness). Specifically, children who reported higher levels of emotional inhibition at pre-treatment were more likely to be free of all anxiety disorders at follow-up compared to children who reported less emotion inhibition at pre-treatment. This finding was unexpected and contrasts with both theory and research (see Gross, 2008 for a review; Suveg, Sood, Comer, & Kendall, 2009). For instance, Suveg and colleagues examined change in emotion regulation following CBT and observed that improvements to worry regulation (less inhibition and less dysegulation) predicted improvements to children's anxiety symptoms. However, it is unclear the extent to which inhibition on it's own predicted change, as in the study by Suveg the variables of emotion inhibition and dysregulation were averaged together to form a single measure

of "maladaptive" coping. In the current thesis, the components of emotion regulation were examined separately (i.e., inhibition, regulation and dysregulation). In addition, the current thesis did not examine worry regulation and so it is possible that different findings may have resulted if this emotion was included.

With regard to parental emotional socialisation, mother report of non-supportive reactions was the only significant predictor of treatment outcome. That is, children of mothers who reported using more negative behaviours (e.g., punitive, minimisation and distress reactions) at pre-treatment were less likely to show remission of all anxiety disorders at follow-up compared to children of mothers who reported using less negative behaviours at pre-treatment. Since non-supportive parental reactions reflect poor coping with children's emotions (Fabes, Poulin, Eisenberg, & Madden-Derdich, 2002) this finding might suggest that mothers who espouse these behaviours are perceived by their children as less emotionally available or effective when it comes to supporting them through anxiety-provoking exposure tasks. Indeed, Festen and colleauges (2013) showed that pre-treatment levels of maternal warmth was predictive of improvements to children's anxiety symptoms at follow-up. Together, these findings could be interpreted to suggest that warmer parents (or parents who are less disposed to negative parenting styles), might better tolerate their child's distress and therefore are able to assist them more adaptively with treatment.

Conclusions. Predictors of treatment outcome are useful for identifying which children are likely to best respond to treatment. Although not consistent across all measures, pre-treatment child emotion regulation skills and non-supportive parental emotion socialisation predicted how well anxiety-disordered children responded to CBT. As such, it has helped to bridge gaps in the literature and point future research towards considering these variables in related treatment outcome studies.

Conclusions and Clinical Implications

This thesis has provided clear evidence of emotion regulation deficits among children with an anxiety disorder. Specifically, it demonstrated that deficits extend beyond the regulation of anxiety/worry to that of other negative emotions, such as sadness and anger. Several aspects of emotion functioning were also problematic for anxious children, such as emotional awareness, communication, expression and management. Together, these insights add to models of anxiety development by supporting the view that anxiety disorders are fundamentally related to problems with emotion regulation (Bradley, 2000) and thus serve as key aetiological variables (e.g., Cisler, Olatunji, Feldner, & Forsyth, 2010). The findings of this thesis on parenting practices may also help to explain the emotion-related deficits observed among anxious children, although the results cannot be interpreted to imply cause. In general, parents of anxious children showed a reduced tendency to discuss emotions with their children, were less inclined to resolve emotions/problems in supportive and sensitive ways and were less clear about how to manage their children's emotion compared to parents of nonclinical children. Thus, if anxious children have not been provided regular opportunities to engage with their parents on the issue of emotions nor feel that emotions should be expressed/communicated, it stands to reason that they will fail to develop adequate emotion regulation skills and will rely more on maladaptive strategies (e.g., avoidance, dysregulated expression; Morris, et al., 2007). The finding that anxious children received less emotion-related teaching may also help explain their relative lack of emotion understanding and reduced confidence (self-efficacy) to modify emotions (Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004).

Implications with regard to prevention and treatment are also apparent. For instance, early interventions could target children who are at high risk of developing an

anxiety disorder (e.g., behaviourally inhibited children, children of parents with anxiety disorders; Beidel & Turner, 1997; Fox, Henderson, Marshall, Nichols, & Ghera, 2005) in order to build their regulation strategies and provide children (and potentially their parents) with skills to improve their understanding of emotions. This may help reduce children's overall levels of dysregulated emotion (or prevent further dysregulation), thereby disrupting one potential pathway that has been linked with anxiety symptoms (e.g., Suveg, et al., 2010). Similarly, equipping parents with more supportive parenting skills (e.g., emotion coaching) to improve their responses to children's emotions along with increasing awareness of their children's emotional experiences (e.g., situational and physical cues for feelings, emotion responses) may also facilitate children's emotion regulation and thus potentially prevent or ameliorate early anxiety problems. Research has shown, for instance, that early interventions aimed at preventing the development of childhood anxiety disorders (e.g., through parent-education) can help to reduce the likelihood of later anxiety diagnoses (Rapee, Kennedy, Ingram, Edwards, & Sweeney, 2005). As suggested by the findings reported in Chapter Five of this thesis, child emotion regulation and parental emotion socialistion may be relevant areas for treatment to target. For example, traditional CBT could be supplemented with emotion-focussed material to improve children's coping with challenging emotions, in addition to enhancing their general emotion understanding (e.g., linking feelings with bodily sensations; see http://www.guilford.com/add/forms/southam-gerow.pdf, for example worksheets; see also Southam-Gerow, 2013 for a guide to treatment). Preliminary findings of an emotion-focussed form of CBT (ECBT) for the treatment of childhood anxiety disorders has shown initial benefit in a multiple-baseline study, including improvements to children's ability to identify and regulate emotions (Suveg, Kendall, Comer, & Robin, 2006). However, this was a multiple-baseline evaluation with a small

sample (N = 6) and ECBT has yet to be compared with CBT in a randomized clinical trial.

Limitations and Future Directions

Although this thesis lends additional support to emotion dysregulation models of anxiety disorders (e.g., Mennin, Heimberg, Turk, & Fresko, 2005; Southam-Gerow & Kendall, 2002) and shows links with parenting, the findings cannot be interpreted to imply causality. The child and parenting variables were measured in samples of children who had a current anxiety disorder, and thus it could be the anxiety that is contributing to less optimal parenting and poor emotion regulation in the children. Longitudinal research is needed to help delineate the causal nature of these variables. Similarly, experimental designs that can make use of sequential techniques in analysing parent-child interactions (i.e., the sequence of parent and child behaviours during interactions) might also help with improving the understanding of the transactional and mutual nature of parent and child behaviours, thus better informing aetiological and maintenance models relating to child anxiety and emotion functioning. Such studies might also like to consider the role of parental psychopathology, as the paper presented in Chapter Three demonstrated effects for maternal anxiety disorders. Indeed, this thesis would have been strengthened if parental psychopathology (actual diagnoses) were assessed and included as a potential factor influencing emotion socialisation practices. It should also be noted that the findings of the observation tasks were conducted in laboratory settings and this tends to be more contrived, which may have influenced participant expectations and behaviours. It is also possible that interactions between parents and children do not reflect typical interaction styles outside of the laboratory. Furthermore, results were not completely consistent across all measures relating to

emotion socialisation and this naturally limits the conclusions that can be drawn. For instance, in chapter Two certain parent reactions predicted child emotion regulation, whereas others did not. The findings were also found to vary according to parent gender and who reported on children's emotion regulation (i.e., mother, father or child). This similarly occurred in the paper that examined pre-treatment outcomes (Chapter Five), with inconsistent findings again emerging based on who the respondent was (children versus parents) and the variable that was being tested (e.g., supportive parenting versus non-supportive parenting). Results for parent emotion socialisation practices also showed some variation depending on whether it was parent-reported (e.g., emotion coaching attitudes questionnaire) or assessed through interview (meta-emotion interview).

More attention to how individual (e.g., genetic, temperament) and environmental (e.g., family, peers) processes interact or have additive contributions to emotion regulation and anxiety disorders is also needed. This thesis did not explore the role of mediating or moderating variables, which may have shed more light on pathways between parenting, emotion regulation and child anxiety. With respect to parenting practices, this thesis showed that meta-emotion structures (emotion beliefs and attitudes) appear to be influential with respect to how parents socialise their children's emotions. However, it did not test parental tolerance to negative emotion (i.e., their own regulation) in themselves or in their children. Tolerance may be distinct to emotion beliefs and therefore exert an additional influence on parental coping with and responses to child emotion. Also, the study of emotion-coaching behaviours (or related constructs) during parent-child emotion discussions could be expanded to include both positive and negative emotions. This has been useful in past research (e.g., Hudson, et al., 2008) in revealing how socialisation practices vary by emotion type.

Future study designs may also wish to consider combinations of parent and child gender, as well as cultural influences, in order to assess how emotion socialisation practices vary between different groups and dyad types (e.g., mothers and sons) and potential differences in methods of emotion regulation (e.g., boys versus girls, older versus younger children).

The examination of predictors of treatment outcomes for anxious children also warrants more attention. The study presented in Chapter Five was not primarily designed as a predictor study and this resulted in a number of shortcomings including, a relatively small sample size, the inability to re-administer measures (child emotion regulation and socialisation practices) for the purpose of assessing treatment change process (i.e., changes to children's emotion regulation) and the combination of follow-up points (6 and 12 months) into a single follow-up, which may have influenced the findings. Lastly, this thesis was predominantly based on samples drawn from a middle-class socioeconomic background and mostly Caucasian. As such, it is not known whether these findings will generalise to other populations. Future research should consider other ethnic and socioeconomic groups.

In conclusion, the study of emotion regulation in anxious children is an important area worthy of attention. Research that can further elucidate the emotion functioning of anxious children and identify deficits will ultimately enhance treatment strategies. Similarly, research that can improve the understanding of how emotion regulation deficits develop and the manner in which they interact with other processes (e.g., such as parenting), may also improve intervention strategies and assist with identifying early risk factors. Doing so may provide children and their parents the relevant assistance to more effectively manage and prevent childhood anxiety disorders. This thesis has provided novel insight into the emotion functioning of clinically anxious

children and the role of familial factors. It is hoped that clinicians and researchers alike might be guided by the findings, so that strategies and preventive measures can be enhanced and delivered for the ultimate goal of improving outcomes for children with anxiety disorders.

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APPENDIX A

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Parental reactions to children's negative emotions: Relationships with emotion regulation in children with an anxiety disorder

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ABSTRACT

Research has demonstrated that parental reactions to children's emotions play a significant role in the development of children's emotion regulation (ER) and adjustment. This study compared parent reactions to children's negative emotions between families of anxious and non-anxious children (aged 7–12) and examined associations between parent reactions and children's ER. Results indicated that children diagnosed with an anxiety disorder had significantly greater difficulty regulating a range of negative emotions and were regarded as more emotionally negative and labile by their parents. Results also suggested that mothers of anxious children espoused less supportive parental emotional styles when responding to their children's negative emotions. Supportive and non-supportive parenting reactions to children's negative emotions related to children's emotion regulation skills, with father's non-supportive parenting showing a unique relationship to children's negativity/lability.

1. Introduction

Difficulty regulating negative emotion is emphasised in etiological and maintenance models of anxiety (Mennin, Heimberg, Turk, & Fresko, 2005; Southam-Gerow & Kendall, 2000; Suveg, Morelan, Brewer, & Thomassin, 2010; Thompson, 2001). Evidence of these difficulties has been reported in studies comparing children with an anxiety disorder (AD) to youth with no psychopathology. Specifically, AD children are found to have less understanding of hiding and changing emotions (Southam-Gerow & Kendall, 2000), experience negative emotion more intensely (Carthy, Horesh, Apter, Edge, & Gross, 2010; Suveg & Zeman, 2004), are more dysregulated in their expression of emotion (Suveg & Zeman, 2004), and engage in more maladaptive and fewer problem-solving emotion regulations (ER) strategies (Carthy et al., 2010; Suveg et al., 2008; Suveg & Zeman, 2004). In addition, emotional awareness, a specific facet of ER, has been shown to correlate with other emotional symptoms (e.g. depression) in children with ADs (Kerns, Comer, & Zeman, 2014). Evidence in support of the relationship between ER difficulties in anxious children and other important life domains is also starting to emerge (e.g. social functioning; Jacob, Suveg, & Whitehead, 2013).

Research examining family influences on anxiety disorders has been a steady focus for more than a decade. The study of emotion socialisation and related parenting styles, in particular, have provided insight into the practices that might contribute to AD children's emotion functioning. For example, in studies involving observations of family emotion discussions, parents of AD children tend to discourage their children's emotion discussions, engage in less explanation of emotions and espouse a less positive interaction style than parents of ND children (Suveg et al., 2008; Suveg, Zeman, Flannery-Schroeder, & Cassano, 2005). Similarly, observed parental responses to children's affect differ between nonclinical and clinical families, with mothers of AD children behaving more intrusively and with less warmth in response to child negative affect than mothers of ND children (Hudson, Comer, & Kendall, 2008). In the study conducted by Hudson and colleagues (2008), no significant group differences emerged for observed parental responses to positive child affect, suggesting that parents of AD children have particular difficulty coping with their children's negative emotion. This study focused on observed reactions to discrete episodes of emotion that emerged during the experimental session. To date, we have limited information in clinically anxious children about parent's response to negative emotions outside the laboratory setting.

1.1. Emotion socialisation within the family

There is substantial empirical evidence to support the notion that parental coping with children's emotions relate to children's overall emotion socialisation and the quality of their emotional competencies (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Denham & Kochanoff, 2002; Fabes, Poulin,

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Eisenberg, & Madden-Derdich, 2002; Hooven, Gottman, & Katz, 1995). Amongst nonclinical populations, research demonstrates a significant relationship between parental reactions and children's ER skills and coping (e.g. Davidov & Grusec, 2006; Eisenberg, Fabes, & Murphy, 1996), with a strong emphasis on emotion socialisation practices that involve emotion-discussion, validation and problem solving (Gottman, 1997).

Research further suggests a number of pathways through which emotion socialisation processes can occur. These include direct pathways (e.g. emotion discussion, coaching) and indirect pathways (e.g. modelling). It is considered that children's ER, an important skill underlying emotional competence, also develops through these pathways (Morris, Silk, Myers, & Robinson, 2007; Saarni, 1999) and is fundamental to healthy psychological adjustment (Cicchetti, Ackerman, & Izard, 1995). According to Eisenberg, Cumberland, & Spinrad (1998), there are three main ways by which parents can socialise their children's emotions: emotion discussion, parent reactions to children's emotions and family expressiveness. With regard to parent–child discussion of emotion, both direct and indirect mechanisms are purported to assist children's development of emotion-related knowledge, language and skills (Denham, 1998; Dunn, Brown, & Beardsall, 1991; Eisenberg et al., 1998; Gottman, Katz, & Hooven, 1997). When parents are available to discuss emotions with their children and use these opportunities to impart both knowledge and ways to manage them, children's developing emotional awareness and regulation appears to benefit. Similarly, parent reactions to children's emotions can directly influence children's developing emotion management styles, such that supportive responses tend to facilitate appropriate emotional expression, communication and ER, and non-supportive responses to children's greater use of emotional inhibition and dysregulated affect (Eisenberg & Fabes, 1992, 1994; Eisenberg et al., 1996; Gottman, 1997). Finally, the frequency, intensity and type of emotional expression that occurs in families is suggested to contribute to children's developing emotion-related schemas, such as which emotions to express or inhibit, when to express them and the manner in which to regulate them (for a review see Dunsmore & Halberstadt, 1997). Finally, positive family expressivity has been associated with better ER strategies and fewer negative emotional displays in children (Garner, 1995; Garner & Power, 1996).

1.2. Parental emotional styles and child emotion regulation

In regard to the direct pathways of emotion socialisation, research to date has correlated specific parental reactions to some important child outcomes. For instance, children whose parents react in non-supportive ways (e.g. punitive, dismissing or minimising) tend to display more maladaptive, avoidant or inappropriate methods of ER and coping (Eisenberg, Fabes, Carlo, & Karbon, 1992; Eisenberg et al., 1996) and tend to exhibit lower levels of socio-emotional competence (Jones, Eisenberg, Fabes, & MacKinnon, 2002). In contrast, children whose parents react in supportive ways (e.g. emotion-and-problem-focused and encourage emotional expression) tend to be higher in levels of socio-emotional competence (e.g., Eisenberg & Fabes, 1994; Eisenberg et al., 1996; Roberts & Strayer, 1987).

Similarly, Gottman (1997; Gottman and colleagues, 1997) proposes that parents who respond to their children's emotions in an accepting, sensitive and supportive manner will enhance the development of ER skills in their children. Research on this *emotion-coaching* parental style has yielded positive outcomes in relation to children's ER and other socio-emotional areas of competence, such as self-esteem and peer relationships (Gottman, 1997; Gottman et al., 1997). In contrast, parents who ascribe an *emotion-dismissing* parental style tend to offer little guidance regarding emotions and refrain from using emotional experiences as opportunities to bond or problem-solve with their child. This latter style has been associated with poorer outcomes for children, such as poorer ER skills, poorer academic coping and lower levels of socio-emotional competence (Gottman, 1997; Gottman et al., 1997).

Amongst other clinical populations, research also shows the benefits of providing children with emotionally sensitive and supportive parenting. For instance, in children diagnosed with oppositional defiant disorder (ODD), parental emotion-coaching behaviours are related to greater child ER and more adaptive behaviours (Dunsmore, Booker, & Ollendick, 2013) and to better peer relations (Katz & Windecker-Nelson, 2004). In a sample of depressed adolescents, youth whose mothers held more proactive, coaching and insightful emotion beliefs, tended to have more adaptive emotion beliefs themselves (Hunter et al., 2011). In addition, younger children with symptoms of attention-deficit hyperactivity disorder (ADHD) showed improvements to their ER skills and hyperactivity when mothers were taught emotion socialisation skills, such as emotion coaching (Herbert, Harvey, Roberts, Wichowski, & Lugo-Candelas, 2013). Thus, whilst parents of clinically disordered children appear to espouse less optimal emotion socialisation practices than parents of non-disordered children (e.g. Katz & Windecker-Nelson, 2004; Katz et al., 2014; Suveg et al., 2005, 2008), evidence indicates that for children high in emotional lability, supportive parental emotional styles may reduce the risk of worsening emotional and behavioural difficulties (see Dunsmore et al., 2013) and may also help to attenuate symptoms. As such, a greater focus on emotion-related responses of parents may serve to guide intervention programmes for anxious children. Indeed, recent preliminary evidence from a study that coached parents to model effective ER strategies and respond adaptively to children's negative emotion showed improvements in clinical outcomes of AD children (Lebowitz, Omer, Hermes, & Scahill, 2014).

In sum, findings on ER in anxious children indicate they have fundamental difficulties managing negative emotions, over and above that reported by non-anxiety disordered children. The study of parent-reported reactions to children's negative emotions more generally in daily life is yet to receive full attention in the study of childhood anxiety disorders. Parent reactions have otherwise been documented in the normative literature (e.g. see Eisenberg et al., 1998; Fabes, Leonard, Kupanoff, & Martin, 2001; Fabes et al., 2002; Morris et al., 2007) and in studies of at-risk children (Shaffer, Suveg, Thomassin, & Bradbury, 2012; Suveg, Sheffield, Morelan, & Thomassin, 2011). Thus, further research is needed to incorporate the emotion-related variables of supportive (problem-focused, emotion-focused and encouragement of emotional expression) and non-supportive (minimisation, punitive and distress reactions) parental reactions in clinically anxious children. These variables further stem from emotion socialisation theory and research, having shown links with children's emotion functioning (Eisenberg et al., 1998; Fabes et al., 2001, 2002).

1.3. The current study

Parent-report of reactions to children's negative emotions has not yet been assessed in a sample of children diagnosed with an anxiety disorder. Previous work has employed observation methods to capture parental behaviours and interaction/communication styles in the context of child emotion (e.g. Hudson et al., 2008; Suveg et al., 2005, 2008), but have not directly asked parents about their typical responses to child emotion. This study attempted to fill this gap by comparing self-reported parental responses of clinically anxious children to children with no psychopathology.

Given the empirical links between ER difficulties and psychopathology (Casey, 1996; Southam-Gerow & Kendall, 2000; Suveg & Zeman, 2004; Zeman, Shipman, & Suveg, 2002) and that anxious children are among the clinical groups to be especially at

risk of ER difficulties (Suveg & Zeman, 2004), it was of interest to determine whether parenting practices relate to ER using a sample of clinically anxious children, in particular, the role of 'supportive' and 'non-supportive' parental emotional styles, in response to children's negative emotions (e.g., fear, sadness and anger).

It was hypothesised that in contrast to parents of ND children, parents of AD children would display greater use of non-supportive parental reactions and less use of supportive strategies. Consistent with previous findings, it was also expected AD children would display poorer ER skills and higher levels of dysregulated emotion than children without an anxiety disorder. Finally, it was expected that parental emotional styles involving supportive reactions would relate to and predict better ER skills in children.

2. Methods

2.1. Participants

Participants in the study were 134 children between the ages of 7 and 12 years and their biological parents. The sample was primarily of middle-class socioeconomic status (SES). The clinical group consisted of 36 girls (M age = 10, SD = 0 months) and 33 boys (M age = 9, SD = 3 months), who presented with their parents for treatment at the Emotional Health Clinic, Macquarie University, Sydney. Trained postgraduate clinical psychology students and Clinical Psychologists assessed the children using the semi-structured clinical interview, the Anxiety Disorders Interview Schedule for DSM-IV – Child and Parent Version (ADIS-IV-C/P: Silverman & Albano, 1996), resulting in the following principal diagnoses: generalised anxiety disorder 43%, social phobia 20%, separation anxiety disorder 13%, obsessive-compulsive disorder 4% and specific phobia 2%. Forty percent of the children were diagnosed with an additional anxiety disorder, the most common being social phobia. Three children also met criteria for an additional diagnosis other than anxiety: mood disorder (n = 2) and oppositional defiant disorder (n = 1).

The nonclinical group consisted of 35 girls (age M = 9 years, SD = 6 months) and 30 boys (age M = 9 years, SD = 9 months) who had never sought treatment from a mental health professional. Children in the control group did not meet diagnostic criteria for a psychological disorder based on the ADIS-IV and scored within the normative range on both the Spence Child Anxiety Scale – Child and Parent Versions (SCAS-C/P) and the Strengths and Difficulties Questionnaire (SDQ). Nonclinical families were recruited from the community via advertisements in local sporting and recreational organisations, community noticeboards and local independent schools. To ensure comparable SES, nonclinical families were recruited from the same geographical area as the clinical group.

2.2. Measures

2.2.1. Psychopathology

Anxiety Disorders Interview Schedule for DSM-IV, Child and Parent Versions (ADIS-IV-C/P; Silverman & Albano, 1996). The ADIS-IV Child and Parent versions consists of child and parent semi-structured clinical interviews that makes diagnoses based on the criteria set out in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994). Children were assigned a diagnosis if either the parent or child reported that symptoms were causing significant interference in functioning and if the Clinical Severity Rating (CSR) of 4 or more was assigned (as outlined in the clinician's manual of the ADIS-IV by Silverman & Albano, 1996). The ADIS-IV-C/P has demonstrated good psychometric properties of inter-rater and test-retest reliability (Silverman & Albano, 1996; Silverman, Saavedra, & Pina, 2001; Wood, Piacentini, Bergman, McCracken, & Barrios, 2002). Research from our clinic has demonstrated excellent reliability for the ADIS with interrater agreement of kappa = 1.00 for an overall anxiety disorder diagnosis and between kappa = .80 and kappa = .93 for specific anxiety diagnoses (Lyneham, Abbott, & Rapee, 2007).

Spence Children's Anxiety Scale, Parent and Child Report (SCAS; Spence, 1998). The SCAS is a 38-item measure of anxiety symptoms on 6 subscales: Generalised Anxiety Disorder; Obsessive-Compulsive Disorder; Specific Phobia; Panic and Agoraphobia; Separation Anxiety; and Social Anxiety. The measure contains an additional six positive 'filler items' to reduce negative response bias. Respondents indicate the frequency with which each symptom occurs on a 4-point scale from 0 (*never*) to 3 (*always*). Sound psychometric properties have been reported, including adequate test-retest reliability, high internal consistency and high concurrent validity (Nauta et al., 2004; Spence, 1998; Spence, Barrett, & Turner, 2003). Internal consistency for the total SCAS score in this study was Cronbach's alpa .94 and .67 (Cronbach's alpha) for mothers' and fathers' reports, respectively.

Strengths and Difficulties Questionnaire, Parent and Child Report (SDQ; Goodman, 1997). The SDQ is a 25-item behavioural screening questionnaire that is divided into 5 scales: Emotional Symptoms; Conduct Problems; Hyperactivity/Inattention; Peer Relationship Problems; and Pro-social Behaviour. Respondents indicate on a 3-point Likert scale, 1 (*not true*), 2 (*somewhat true*), or 3 (*certainly true*), how each attribute applies to the child. This measure is found to have good psychometric properties, including an ability to distinguish between clinical and nonclinical samples, high construct validity, as evidenced by convergence with established measures of child psychopathology (e.g. Achenbach, 1991), predictive validity, internal reliability and retest reliability (Goodman & Goodman, 2009; Goodman, Meltzer, & Bailey, 1998; Goodman & Scott, 1999). Internal consistency for the SDQ in this sample was Cronbach's alpha = .59 and 1 for mothers and fathers, respectively.

Depression Anxiety Stress Scales-21 (DASS; Lovibond & Lovibond, 1995). The DASS-21 was included as an adult measure of depression, anxiety and stress. Parents rated each of the 21 items using a 4-point Likert scale from 0 (*not at all*) to 3 (*most of the time*). The DASS-21 has been assessed as a reliable and valid instrument in both community and clinical samples, with high internal consistency, and good convergent and discriminant validity (Antony, Bieling, Cox, Enns, & Swinson, 1998; Clara, Cox, & Enns, 2001; Henry & Crawford, 2005; Lovibond & Lovibond, 1995). Internal consistency was Cronbach's alpha of .93 and 1, for mothers and fathers, respectively.

2.2.2. Emotion regulation

Emotion Expression Scale for Children (EESC; Penza-Clyve & Zeman, 2002). This 16-item self-report questionnaire was included to measure aspects of deficient emotional expression. It has two subscales: (a) Poor Awareness – difficulty labelling internal emotional experiences (e.g., "I often do not know why I am angry") and (b) Expressive Reluctance – lack of motivation or willingness to communicate or express negative emotional states to others (e.g., "I prefer to keep my feelings to myself"). The EESC uses a 5-point Likert scale from 1 (*not at all true*) to 5 (*extremely true*). The EESC has yielded acceptable psychometric properties, including high internal consistency, retest reliability and construct validity as evidenced by convergence with other measures of emotion management (Penza-Clyve & Zeman, 2002). The internal consistency in this sample was Cronbach's alpha = .88.

Children's Emotion Management Scales (CEMS; Zeman, Shipman, & Penza-Clyve, 2001). The CEMS assesses children's self-reported sadness (12 items) and anger (11 items) management skills. It is comprised of three subscales: (a) Inhibition, suppression of

emotional experience (e.g., "I get sad inside but don't show it"); (b) Dysregulated Expression, culturally inappropriate emotional expression (e.g., "I say mean things to others when I am mad"); and (c) Emotion Regulation coping, adaptive methods of emotion management (e.g., "When I am feeling sad, I do something totally different until I calm down). The CEMS uses a Likert scale of 1 (*hardly ever*), 2 (*sometimes*), or 3 (*often*). Adequate psychometric properties have been demonstrated, with coefficient alphas ranging from .60 to .77 and test-retest reliability ranging from .63 to .80 and evidence of convergent and discriminant validity with measures of emotion awareness, regulation, social functioning and psychopathology (Zeman et al., 2001). In the current study, internal consistency for sadness was Cronbach's alpha of .71, .57 and .66 for Inhibition, Emotion Regulation Coping and Dysregulated Expression, respectively. For anger, internal consistency was Cronbach's alpha of .80, .72 and .69 for Inhibition, Emotion Regulation Coping and Dysregulated Expression, respectively. Although the alpha for the subscale Emotion Regulation coping is low, we decided to retain the scale as the reliability is comparable to previously reported data (e.g. McAuliffe, Hubbard, Rubin, Morrow, & Dearing, 2007; Suveg, Sood, Comer, & Kendall, 2009). It is not uncommon for psychometric properties to be affected by factors such as test length (Kline, 2000) and since the ER subscale (sadness) is comprised of only five items, this may have contributed to the low alpha value. The argument to discard a subscale on the basis of a low Cronbach alpha alone has been criticised in discussions on psychometric theory and practice (e.g. Kline, 2000; McCrae, Kurtz, Yamagata, & Terracciano, 2011).

Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997). The ERC is a 24-item adult-report measure (4-point Likert scale; 1 = *never* to 4 = *always*) of children's typical methods of managing emotional experiences, which was administered to both mothers and fathers. The checklist has two subscales: (a) Emotion Regulation – measures appropriate emotional display, empathy and emotional self-awareness (e.g., "Is empathetic towards others") and (b) Lability/Negativity – represents a lack of flexibility, mood lability and dysregulated negative affect (e.g., "Exhibits wide mood swings"). Shields and Cicchetti (1997) report high internal consistency for both subscales (emotion regulation = .83; lability/negativity = .96), strong construct validity with established measures of emotion regulation, strong discriminate validity and the ability to differentiate between well-regulated and poorly-regulated groups (Shields & Cicchetti, 1997). In this study, internal consistency was Cronbach's alpha of .61 and .74 for mothers and .60 and .70 for fathers, respectively for Emotion Regulation and Lability/Negativity scales. Although the reliability coefficients for the Emotion Regulation scales were acceptable, the current values are lower in comparison to values reported in validation studies (Shields & Cicchetti, 1997), it was decided to retain the use of the subscale on the basis of previous research having employed the measure in studies of child anxiety (e.g. Suveg & Zeman, 2004).

2.2.3. Parental reactions to children's negative emotions

Coping with Children's Negative Emotions Scale (CCNES; Fabes, Eisenberg, & Bernzweig, 1990). The CCNES is a self-report questionnaire that assesses parental behaviours in response to children's negative emotions (e.g. anger, fear, anxiety). Parents are presented with 12 hypothetical vignettes that depict a typical childhood incident that causes child distress. Parents rate each vignette according to how likely they would be to respond in a given way, from 1 (*very unlikely*) to 7 (*very likely*). Ratings are coded according to the six following subscales: Problem Focused (PF), e.g., "help my child think of places he/she hasn't looked yet"; Emotion Focused (EF), e.g., "distract my child by talking about happy things"; Expressive Encouragement (EE), e.g., "encourage my child to talk about his/her fears"; Minimisation Responses (MR), e.g., "tell my child that he/she is over-reacting"; Punitive Reactions (PR), e.g., "send my child to his/her room to cool off"; and Distress Reactions (DR), e.g., "feel upset and uncomfortable because of my child's reaction". Adequate psychometric properties have been reported, with internal reliability estimates ranging from .69 to .85 and acceptable test-retest reliability (Fabes et al., 2002). In this study, mothers' CCNES had Cronbach's alphas of .54, .70, .82, .80, .80 and .77 respectively for DR, PR, MR, EE, EF and PF scales. For fathers, Cronbach's alphas were .47, .75, .82, .89, .85 and .83 respectively for DR, PR, MR, EE, EF and PF scales. Due to the comparatively low Cronbach's alphas in both mother and father DR, no further separate analyses were used with this subscale.

In line with the initial validation paper (Fabes et al., 2002) and subsequent research (e.g. McElwain et al., 2007; Suveg et al., 2011), the subscales of the CCNES were combined to form new composites of *supportive reactions* and *non-supportive reactions*. Through Principal Components Analysis (PCA) extraction method with Varimax rotation, the CCNES for both mother and father responses resulted in a two-factor solution: (i) supportive parenting, which comprised the subscales of EF, PF and EE and (ii) non-supportive parenting, which comprised the subscales of DR, PR and MR. Internal consistency for Supportive Parenting was Cronbach's alphas of .91 and .93 for mothers and fathers, respectively. Internal consistency for Non-supportive parenting was Cronbach's alphas of .89 and .84 for mothers and fathers, respectively.

2.3. Procedure

After obtaining informed written consent from parents and verbal assent from children, a trained clinical psychologist or intern clinical psychologist administered the ADIS-IV-C/P. During the parent interview, children completed measures of symptomatology and emotion regulation. During the child interview, parents completed measures of symptomatology, emotion-related parenting styles and child emotion regulation. All clinical families went on to receive treatment at the clinic. Nonclinical families were reimbursed $50 for time and travel expenses.

2.4. Data analysis

A series of *t* tests were used to examine group differences on the descriptive measures and parental reactions to children's negative emotions. The Bonferroni correction was applied to protect against an increased risk for a Type 1 error (critical alpha level = .05/6 = .01). To examine the influence of parent reactions on children's ER skills, separate multiple regression analyses (using General Linear Model procedures; GLM) were performed for each of the dependent variables. Each model contained the following predictor variables: CCNES (supportive parenting and non-supportive parenting), age, sex, parent psychopathology (total DASS score) and group (anxious and non-anxious). The dependent variables were divided into parent reported ER (ERC – subscales of Emotion Regulation and Negativity/Lability) and child reported ER (EESC – total score and CEMS – subscales of Sadness and Anger Inhibition, Sadness and Anger Regulation and Sadness and Anger Dysregulation). In this study, not all variables met the assumption of normality in which case a logarithmic (Lg10) transformation was conducted. There were no changes to the findings of the study following the transformation and so all results presented are from non-transformed data.

3. Results

3.1. Descriptive measures

There were no differences in mean age between anxious children and nonclinical children, $t(132) = -0.11$, $p > .05$ (anxious $M = 9.59$ years, $SD = 1.84$, nonclinical $M = 9.63$ years, $SD = 1.91$). A

Table 1
Means and standard deviations for measures of symptomatology across groups.

	Clinical		Nonclinical	
Questionnaire	*M*	*SD*	*M*	*SD*
SCAS – Mother	34.61[a]	14.35	9.27[b]	6.04
SCAS – Father	32.17[a]	13.22	10.02[b]	16.21
SDQ – Mother	15.08[a]	6.80	5.43[b]	4.13
SDQ – Father	15.13[a]	7.20	5.10[b]	3.50
	Clinical		Nonclinical	
	M	*SD*	*M*	*SD*
Mothers				
Depression	7.2[a]	6.48	5.1[a]	5.72
Anxiety	5.46[a]	5.82	4.64[a]	6.28
Stress	14.28[a]	9.46	10.26[b]	6.9
Fathers				
Depression	7.94[a]	8.9	4.86[b]	5.38
Anxiety	3.9[a]	5.84	3.12[a]	4.14
Stress	14.26[a]	8.44	9.88[b]	6.02

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). SCAS = Spence Child Anxiety Scale Scales; SDQ = Strengths and Difficulties Questionnaire (Total Difficulties).

Table 3
Means and standard deviations for child emotion regulation across groups.

	Clinical		Nonclinical	
Questionnaire/Subscale	*M*	*SD*	*M*	*SD*
ERC – Mother				
Emotion Regulation	24.42[a]	3.66	28.63[b]	2.83
Lability/Negativity	31.15[a]	6.86	23.48[b]	5.03
ERC – Father				
Emotion Regulation	24.94[a]	3.50	28.35[b]	2.60
Lability/Negativity	31.38[a]	5.73	24.04[b]	5.29
EESC – Child				
Poor Awareness	20.73[a]	6.15	13.82[b]	5.28
Expressive Reluctance	20.91[a]	5.55	16.37[b]	5.67
CEMS – Child				
Sadness Inhibition	7.66[a]	2.10	7.05[a]	2.17
Anger Inhibition	6.89[a]	2.07	7.38[a]	2.33
Sadness Regulation	9.49[a]	1.91	10.95[b]	2.37
Anger Regulation	7.38[a]	2.05	9.45[b]	1.88
Sadness Dysregulation	5.66[a]	1.60	4.73[b]	1.55
Anger Dysregulation	5.45[a]	1.73	4.60[b]	1.60

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). ERC = Emotion Regulation Checklist; EESC = Emotion Expression Scale for Children; CEMS = Child Emotion Management Scales.

Chi-square test for independence (with Yates Continuity Correction, used to reduce the error in approximation) indicated that children's gender did not differ between the clinical and nonclinical groups, $\chi^2(1, N = 134) = .0$, $p > .05$ (clinical = 48% male, 52% female; nonclinical = 46% male, 35% female). There were also no differences in family income between the clinical and nonclinical groups, $\chi^2(3, N = 126) = .54$, $p > .05$ (clinical = 75% of families earn over $80, 000; nonclinical = 78% of families earn over $80,000).

The mean scores for both child and parent measures of symptomatology for the clinical and nonclinical groups are presented in Tables 1 and 2, respectively. Anxious children were found to have significantly higher scores on the SCAS and the SDQ than nonclinical children. For the DASS, mothers and fathers of anxious children had significantly higher stress scores than mothers of nonclinical children. In addition, fathers of anxious children reported significantly higher symptoms of depression than fathers of nonclinical children. Differences between groups on the symptom measures provide support for the distinction between the clinical and nonclinical groups.

3.2. Parental reactions to children's negative emotions

Examination of maternal reactions revealed significant differences between mothers of anxious children and mothers of nonclinical children on the Emotion Focused (EF) subscale, $t(128) = -3.60$, $p < .01$; $d = 0.6$ and the Problem Focused (PF) subscale, $t(126) = -4.34$, $p < .01$; $d = 0.8$. Results indicated that mothers of non-anxious children reported using more Emotion- and Problem-Focused Reactions than mothers of anxious children. Comparisons of fathers between the clinical and nonclinical groups revealed no significant differences on any of the subscales of the CCNES. The mean scores for both mothers and fathers on the subscales of the CCNES are presented in Table 2.

Table 2
Means and standard deviations for parent reactions across groups.

	Clinical		Nonclinical	
CCNES Subscale	*M*	*SD*	*M*	*SD*
Mothers				
Punitive Reactions	29.76[a]	8.61	28.39[a]	7.92
Minimisation Reactions	30.71[a]	11.34	32.66[a]	10.69
Emotion-Focused	64.86[a]	9.22	70.45[b]	8.30
Problem-Focused	67.09[a]	8.98	72.95[b]	5.73
Expressive Encouragement	55.88[a]	12.38	60.60[a]	10.25
Fathers				
Punitive Reactions	30.31[a]	7.95	27.40[a]	8.75
Minimisation Reactions	36.64[a]	10.96	35.49[a]	12.45
Emotion-Focused	62.47[a]	10.19	65.28[a]	11.26
Problem-Focused	63.29[a]	9.39	67.00[a]	10.80
Expressive Encouragement	50.90[a]	14.00	48.35[a]	16.80

Note. Means sharing superscripts are not significantly different at the critical alpha ($p < .01$). CCNES = Coping With Children's Negative Emotions Scale.

Supportive and non-supportive parenting variables were also examined to compare maternal and paternal responses. Results within-groups revealed that mothers ($M = 194.24$, $SD = 25.09$) reported significantly more supportive reactions than fathers ($M = 178.83$, $SD = 31.72$), $t(98) = 4.02$, $p < .0005$ (two-tailed); $d = 0.8$. No difference was found between mothers and fathers for non-supportive parenting. A mixed between-within subjects analysis of variance was also conducted to examine the influence of group (Anxious, Non-Anxious) on parental reactions, across mothers and fathers. For supportive parenting, there was a substantial main effect, Wilka Lambda = .85, $F(1, 97) = 17.81$, $p < .00005$, partial eta squared = .16, with both groups showing less supportive parenting from fathers. The main effect comparing groups was also significant, $F(1, 97) = 5.962$, $p < .05$, partial eta squared = .058, suggesting higher levels of overall parental support to non-anxious children compared to anxious children. No significant findings emerged for non-supportive parenting.

Effects of child sex on parent reactions for mothers and fathers were also examined. No significant differences emerged between girls and boys for maternal supportive and non-supportive parenting, $F(1, 83) = 1.64$, $p > .05$, partial eta squared = .02 and $F(1, 83) = 1.47$, $p > .05$, partial eta squared = .02, respectively. There were also no significant differences between girls and boys for paternal supportive and non-supportive parenting, $F(1, 83) = 2.18$, $p > .05$, partial eta squared = .03 and $F(1, 83) = .683$, $p > .05$, partial eta squared = .01, respectively.

3.3. Children's emotion regulation

The mean scores and standard deviations for both parent- and self- reported ER skills are seen in Table 3. For the Regulation subscale on the ERC, both mothers and fathers in the clinical group rated their children as having greater difficulty regulating their emotions than mothers and fathers in the nonclinical group, $t(134) = -7.45$, $p < .01$; $d = 1.29$ and $t(115) = -5.82$,

$p < .01$; $d = 1.09$, respectively. On the Negativity/Lability subscale, mothers and fathers of anxious children rated their children as being more inflexible, labile and emotionally negative than parents in the nonclinical group, $t(121) = 7.12$, $p < .01$; $d = 1.29$ and $t(112) = 7.01$, $p < .01$; $d = 1.32$, respectively. For the EESC, anxious children rated themselves as significantly less aware of their emotions on the Poor Awareness subscale, $t(127) = 6.82$, $p < .01$; $d = 1.21$. Anxious children were also less likely to express their emotions on the Expressive Reluctance subscale compared to ratings of non-anxious children, $t(127) = 4.59$, $p < .01$; $d = 0.81$. Using the CEMS, anxious children rated themselves on the Regulation subscales as having greater difficulty regulating feelings of both sadness and anger than non-anxious children, $t(129) = -3.84$, $p < .01$; $d = 0.68$ and $t(129) = -5.94$, $p < .01$; $d = 1.05$, respectively. For the Dysregulated subscales, anxious children rated themselves as significantly more dysregulated in their expression of both sadness and anger compared to non-anxious children, $t(128) = 3.35$, $p < .01$; $d = 0.59$ and $t(134) = 2.95$, $p < .01$; $d = 0.51$, respectively. No differences on the Inhibition subscales for sadness and anger were found between anxious and non-anxious children, $t(129) = 1.63$, $p > .01$; $d = 0.29$ and $t(131) = -1.28$, $p > .01$; $d = 0.22$, respectively.

3.4. Analysis of parent reactions to children's negative emotions in relation to child emotion regulation skills

Since mothers and fathers of anxious children respectively reported higher stress and depression scores on the DASS than parents of non-anxious children, correlations between parental psychopathology and the CCNES were examined to determine if it was an appropriate covariate. Results of the bivariate correlations between the Stress and Depression subscales of the DASS and the six subscales of the CCNES revealed no significant relationships. However, it was decided to include parental psychopathology in order to control for the influence of parent symptomatology on children's ER. In regards to parent reactions on the CCNES, correlation analyses showed that only three of the subscales were correlated between mother and father responses: Distress Reactions, Minimisation Reactions and Emotion-Focused Reactions. Due to a lack of agreement between mothers and fathers on every scale of the CCNES, it was decided to examine each GLM model separately for mothers and fathers.

3.5. GLM models examining parent reactions with parent-reported child emotion regulation

The Emotion Regulation and Negativity/Lability subscales from the ERC were used as the dependent variables. For the models examining maternal responses, the R squared values were .39 and .45 for Emotion Regulation and Negativity/Lability, respectively. For the models examining paternal responses, the R squared values were .32 and .43 for Emotion Regulation and Negativity/Lability, respectively. Only maternal supportive parenting significantly predicted children's Emotion Regulation, $b = .038$, $t(98) = 2.84$, $p < .01$, partial eta squared = .07, such that higher levels of supportive parenting was associated with higher children's ER skills. Father's non-supportive parenting significantly predicted both child's Negativity/Lability, $b = 0.067$, $t(85) = 2.80$, $p < .01$, partial eta squared = .079 and Emotion Regulation, $b = -.03$, $t(88) = -1.98$, $p < .05$, partial eta squared = .04, respectively. However, mother's non-supportive parenting did not predict either children's Negativity/Lability or Emotion Regulation. Group was also a significant predictor for maternal-reported ER on the Emotion Regulation subscale, $b = -3.36$, $t(98) = -3.67$, $p < .0005$, partial eta squared = .12 and Lability/Negativity subscales, $b = .8.75$, $t(98) = 4.88$, $p < .0005$, partial eta squared = .22. For paternal-reported child ER, group was a significant predictor for both the Emotion Regulation subscale, $b = -3.74$, $t(88) = -4.59$ $p < .0005$, partial eta squared = .20 and Lability/Negativity subscales, $b = 6.93$, $t(85) = 4.14$, $p < .0005$, partial eta squared = .18. For parent psychopathology, both maternal and paternal symptoms were found to be a significant predictor for the Lability/Negativity subscales, $b = 0.18$, $t(98) = 2.34$, $p < .05$, partial eta squared = .03 and $b = 0.15$, $t(85) = 2.15$, $p < .05$, partial eta squared = .07, respectively, such that higher scores on the DASS related to higher levels of child dysregulated emotion. Parent psychopathology was not found to be a significant predictor for the Emotion Regulation subscale. Age and sex were not found to be significant predictors for the ERC subscales ($ps > .05$).

3.6. GLM models examining parent reactions with child-reported emotion regulation

Results for supportive and non-supportive parental reactions on children's self-reported ER skills are presented in Table 4 for mothers and Table 5 for fathers. The individual subscales were examined separately in the GLM analyses, with the exception of EESC that provides an interpretable total scale score.

In the GLM models examining maternal supportive and non-supportive reactions, a number of significant predictors emerged for children's self-reported ER (see Table 4). In all cases, child sex was not found to be a significant predictor ($p < .05$). For Sadness Inhibition (CEMS-SI), supportive parenting was a significant predictor such that higher levels of supportive parenting were associated with lower inhibition of sadness. For Anger Inhibition (CEMS-AI), age was a significant predictor, suggesting reduced inhibition of anger with increasing age. For Sadness Regulation (CEMS-SR), non-supportive parenting, group and age were significant predictors such that higher levels of non-supportive parenting and clinical group membership related to less regulation for sadness, whereas increasing age related to higher regulation for sadness. For Anger Regulation (CEMS-AR), group was found to be the only significant predictor. There were no significant predictors for Sadness Dysregulation (CEMS-SD). For Anger Dysregulation (CEMS-AD), supportive parenting and psychopathology were significant predictors such that higher levels of supportive parenting related to less dysregulated anger, whereas a higher DASS score was associated with increased dysregulation for anger. For children's awareness of and willingness to express emotion (EESC), supportive parenting and group were significant predictors, relating to better awareness and expression of emotions for supportive parenting and less awareness and expression of emotions for clinical group membership.

For the GLM models examining paternal reactions, non-supportive parenting was found to be significant predictor for Sadness Regulation (CEMS-SR) such that increasing levels of non-support related to poorer regulation for sadness. For inhibition of sadness (CEMS-IS), neither supportive or non-supportive, nor group, age, sex or psychopathology were significant predictors. For inhibition of anger (CEMS-IA), age was the only significant predictor such that inhibition for anger increased with age. For Anger Regulation (CEMS-AR), group was a significant predictor such that clinical group membership related to poorer regulation. For Sadness Dysregulation (CEMS-SD) and Anger Dysregulation (CEMS-AD), there were no significant predictors. For children's awareness of and willingness to express emotion (EESC), group and parent psychopathology were significant predictors, relating to less awareness and expression of emotions for higher paternal DASS scores and clinical group membership.

4. Discussion

The results from this study provide further support for (a) ER difficulties in children with an anxiety disorder; (b) differences

Table 4
Summary of GLM analyses for child emotion regulation with maternal supportive and non-supportive reactions, group, age and parent psychopathology.

	Supportive parenting				Non-supportive parenting				Group				Age				Parent psychopathology				
Dependent variables	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	R^2
CEMS																					
Sadness Inhibition	−.02	−2.30	.02*	.06	−.01	−1.30	.20	.02	.06	.09	.93	.00	.15	−1.17	.24	.03	−.02	−.70	.49	.01	.10
Anger Inhibition	−.01	−.63	.53	.00	−.01	−1.40	.16	.02	−.87	−1.82	.20	.02	.35	2.75	.01**	.08	−.02	−.85	.40	.01	.13
Sadness Regulation	.01	.99	.33	.01	−.03	−3.22	.00***	.12	−1.36	−2.18	.03*	.05	.25	2.04	.04*	.05	−.03	−1.2	.23	.02	.28
Anger Regulation	.01	1.45	.15	.02	−.01	−1.41	.16	.02	−2.26	−3.75	.00***	.14	.22	1.79	.08	.04	−.01	−.45	.66	.04	.33
Sadness Dysregulation	−.01	−.95	.35	.01	.01	1.10	.28	.01	.86	1.81	.07	.04	−1.1	−1.43	.16	.02	.01	.75	.45	.01	.17
Anger Dysregulation	−.02	−2.31	.02*	.06	.00	.05	.96	.00	.46	.96	.34	.01	.01	.09	.93	.00	.04	2.4	.02*	.06	.20
EESC	−.11	−2.45	.02*	.07	−.05	−.88	.38	.01	9.45	3.04	.00***	.10	.32	.54	.59	.00	.04	.40	.69	.00	.30

Note. CEMS = Child Emotion Management Scales; EESC = Emotion Expression Scale for Children. Overall R^2 also includes Sex in the model.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

Table 5
Summary of GLM analyses for child emotion regulation with paternal supportive and non-supportive reactions, group, age and parent psychopathology.

	Supportive parenting				Non-supportive parenting				Group				Age				Parent psychopathology				
Dependent variables	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	*B*	*t*	*p*	η_p^2	R^2
CEMS																					
Sadness Inhibition	.00	.22	.83	.00	−.00	−.40	.69	.00	.92	1.44	.16	.02	.18	1.45	.15	.04	.02	.52	.61	.00	.07
Anger Inhibition	−.00	−.30	.77	.00	.00	.40	.74	.00	−.90	−1.33	.19	.02	.31	2.43	.02*	.07	−.04	1.20	.24	.02	.12
Sadness Regulation	−.01	−.75	.46	.01	−.03	−2.44	.02*	.07	−.90	−1.38	.17	.02	.26	2.40	.06	.45	.02	.53	.60	.00	.21
Anger Regulation	−.01	−1.88	.08	.04	−.00	−.12	.91	.00	−1.84	−2.80	.01**	.1	.21	1.59	.12	.03	−.00	−.1	.92	.00	.22
Sadness Dysregulation	.00	.32	.75	.00	.01	.98	.33	.01	.09	.19	.85	.00	−.14	−1.65	.10	.03	−.01	−.35	.73	.03	.09
Anger dysregulation				.03	.00	.54	.59	.00	−.02	−.04	.97	.00	−.06	−.55	.59	.00	.04	1.52	.13	.00	.06
EESC	.03	.66	.51	.01	−.00	−.02	.98	.00	10.78	3.28	.00**	.13	.96	1.52	.13	.03	.34	2.28	.03*	.07	.31

Note. EESC = Emotion Expression Scale for Children; CEMS = Child Emotion Management Scales. Overall R^2 also includes Sex in the model.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

in parental emotional styles between parents of anxious children and parents of non-anxious children; and (c) a link between parental emotional styles and ER difficulties in children using parent-reported data. Results also document differences in parenting practices between mothers and fathers.

4.1. Emotion regulation in children with anxiety

The hypothesis that anxious children would exhibit poorer ER skills than non-anxious children was supported. Mothers and fathers in the clinical group rated their children as having greater difficulty regulating their emotions and as being more inflexible, labile and emotionally negative than did mothers and fathers in the nonclinical group. From self-report, anxious children also indicated that they were less aware of their emotions and as less likely to express and communicate their emotions to others compared to non-anxious children. This is consistent with earlier findings showing that mothers of anxious children perceive their children as having greater difficulty regulating negative affect and with anxious children also rating themselves as having greater difficulty in this area (Suveg & Zeman, 2004). The finding that anxious children in the current study also rated themselves as poorer in ER skills provides some level of convergent evidence for their emotion management difficulties.

For the specific emotions of anger and sadness, children with an anxiety disorder indicated higher dysregulated expression and less adaptive coping than children in the control group. However, anxious children were equally likely to suppress their emotions as non-anxious children. This is a surprising result and seemingly inconsistent with the finding that anxious children in this study were more reluctant to express their emotions (as measured by the EESC) and with typical perceptions of anxious children as being inhibited. However, the CEMS in comparison does not ask children about their efforts to communicate and discuss their emotions, but rather about hiding them. Interestingly, Suveg and Zeman (2004) also found a lack of group differences for emotional inhibition on this same scale and they also included a measure for worry. Perhaps anxious children are less motivated to communicate their negative emotions, but do not necessarily 'mask' them. On the contrary, it may seem that they are quickly venting their emotions in an attempt to cope (e.g. slam doors when mad), as evidenced by their higher scores for dysregulated expression. Such regulation difficulties may be due to anxious children's initial troubles identifying their negative emotions, as indicated by higher scores on the Poor Awareness subscale, and/or due to the intensity with which they experience such emotions. Although not examined in the current study, Suveg and Zeman (2004) found that children with an anxiety disorder reported experiencing their emotions more intensely than non-anxious children. In part, this would explain their higher levels of dysregulated emotion, since stronger emotions are inevitably more difficult to manage. Parental report of anxious children's greater lability and negativity also lends support to this notion.

4.2. Parental reactions to children's negative emotions

The hypothesis that parental emotional styles in the clinical group would be less supportive than parental emotional styles in the nonclinical group was partially supported: mothers of children in the clinical group reported significantly fewer Emotion Focused and Problem Focused reactions than mothers of children in the nonclinical group. However, the two groups were indistinguishable from each other for Expressive Encouragement, suggesting that mothers of anxious children are equally likely to encourage their children to express their emotions as mothers of non-anxious children. This finding contrasts with previous emotion socialisation studies where mothers of anxious children were found to be more discouraging of emotion discussions compared to parents of non-anxious children (Suveg et al., 2005, 2008). Perhaps methodological differences between the studies account for this discrepancy. For instance, in the dyadic analyses of Suveg and colleagues (2005; 2008), mothers engaged in actual emotion discussions with their children. Not surprisingly, this approach may lend itself to revealing more in-depth and detailed information regarding group differences in the encouragement of emotional expression than would otherwise be captured by a self-report measure. It is further possible that the lack of group differences on this subscale be due to mothers of nonclinical children placing a stronger emphasis on and a greater involvement with Emotion-and-Problem Focused responding, rather than on encouraging their child to express their feelings. Nonclinical children in this sample also reported themselves as being significantly more motivated to express their emotions than clinical children, which may preclude the need for parents in this group to encourage their children to express emotion.

In regards to non-supportive parenting reactions, the data did not support the additional hypothesis that parents of anxious children would report higher levels of non-supportive parenting. Rather, results indicated that mothers in the clinical group are just less likely to offer support when their child is emotionally distressed, as opposed to reacting in more negative ways. This finding is somewhat surprising, as it was expected that parents of anxious children would engage in behaviours that quickly dampen down child emotion (e.g. punitive or minimising strategies). To a degree, this also contrasts with the use of maladaptive strategies that previous research identified in parents of anxious children, such as a greater use of intrusiveness/control (Hudson et al., 2008) that theoretically serves a similar purpose of reducing child distress.

Together, the results indicate that when confronted by displays of negative affect from their children, mothers of anxious children are less likely to respond with strategies designed to soothe their child, such as providing comfort or engaging in something fun (emotion focused) and as less likely to problem-solve strategies with their child in addressing the cause of their distress (problem focused). Observational research on emotional socialisation practices offer similar insights, whereby mothers of anxious children were less inclined to discuss negative emotions with their child and denoted a less positive and less supportive interpersonal style when discussing emotions in a family interaction task (Suveg et al., 2005, 2008). These findings are meaningful with respect to the theoretical and empirical perspectives on emotion socialisation practices, which indicate that higher levels of supportive parenting relate to better outcomes for children's overall emotional well-being (e.g. Eisenberg & Fabes, 1992, 1994; Eisenberg et al., 1996; Gottman, 1997). Furthermore, the finding that mothers of non-anxious children were more supportive in coping with their children's emotions and that non-anxious children were found to have better emotion regulation skills, points further to the important area of parental practices in the context of the child emotion.

With respect to paternal emotional styles, there was a trend for fathers of anxious children to rely more on non-supportive parenting practices, however the results did not reach statistical significance. Whilst previous research has found that fathers of anxious children tend to display more negative affect and appear less involved when discussing emotions with their children (Suveg et al., 2008), the current study did not find any group differences. Since this study employed self-report as a means of assessing parental reactions, the situations depicted in the vignettes may not have been intense or 'real' enough to elicit these types of distress reactions, which may be particularly pertinent for fathers.

When examining differences between mothers and fathers, a unique finding for paternal reactions emerged, with fathers overall reporting significantly less supportive reactions than mothers.

In part, this may explain the lack of statistical differences between fathers in the clinical and nonclinical groups, since their combined levels of supportive parenting was less than that of mothers. An earlier study using a nonclinical sample also found fathers to be less supportive than mothers when coping with their child's negative emotions (McElwain, Halberstadt, & Volling, 2007), thus highlighting possible differences in emotion socialisation practices between the genders and/or father's capacity to cope with their child's negative affectivity.

For parenting reactions across groups, the results indicated that parents irrespective of their gender were much more inclined to respond to anxious children in less supportive ways. This finding appears counterintuitive, since anxious children are seemingly more in need of support, not less, when dealing with challenging situations. Yet, earlier research comparing anxious and non-anxious families found mothers of anxious children behaving more intrusively and negatively towards their children than mothers of non-anxious children (Hudson & Rapee, 2001, 2002). In addition, a study that compared mothers interacting with children who were not their own, found mothers of anxious children interacting in less negative ways with non-anxious children than children with an anxiety disorder (Hudson, Doyle, & Gar, 2009). Thus, despite their apparent need for managing emotions and coping with challenging situations, anxious children appear to receive less support from parents comparatively to non-anxious children. Clearly, further research is needed to examine the directionality of these parent–child factors, since it is possible that anxious children elicit less support from their parents due to frequently expressing more dysregulated emotion. On the other hand, a pattern of low parental support early on in a child's development may contribute to poorer emotion skills and resulting dysregulated affect. Whilst this latter view has been well documented in the literature (e.g. Gottman, 1997), family interaction studies that include experimental designs are needed to tease apart these dyadic factors.

4.3. Relationship between parental emotional styles and ER difficulties in children

The third major aim of this study was to examine the influence of parent reactions on children's ER skills. A number of significant findings emerged in the expected direction for the current study. The first of these was the relationship between supportive parental emotional styles and parent-reported children's ER. Results showed that for mothers only, higher levels of supportive reactions to children's negative emotions predicted better ER skills in children. For non-supportive parental emotional styles, only reactions from fathers were found to predict children's levels of negativity and lability, such that children's difficulty regulating negative emotions increased with higher levels of non-support from fathers. These findings are consistent with the work of Gottman (1997; Gottman and colleagues, 1997), who previously demonstrated that an emotion-coaching style of parenting predicts better ER skills in children. With respect to the current study, specific emotion-coaching behaviours are identified as those that encourage emotion expression (EE), provide comfort to the child (EF) and assist with problem-solving (PF). The current results showed that greater use of these emotion-coaching behaviours in mothers, positively related to children's ability to cope with and manage their emotions. Gottman has similarly highlighted the relationship between emotion-dismissing behaviours and greater difficulties regulating emotions. The results of the current study also demonstrated this link, but only for fathers.

A similar pattern of findings emerged between parental reactions to children's negative emotions and children's self-reported ER skills. Maternal reactions on the whole predicted a larger set of ER skills for children than did paternal reactions. Specifically, maternal support correlated with and predicted fewer ER difficulties in the areas of inhibition for sadness, dysregulated expression of anger and children's awareness of and expression of emotions. Surprisingly, father's supportive reactions showed no relationship to nor predicted any of the child-reported ER variables. In contrast, both maternal and paternal non-supportive emotional styles predicted children's ER for sadness, so that children's ability to regulate sad feelings became increasingly more difficult when parents reported a greater use of minimising and punitive strategies or when they feel emotionally distressed (e.g. become upset).

As the findings indicated, not all areas of child ER related to parenting reactions in the same way. For instance, when parent-reported ER was examined with supportive parental emotional styles, a distinct and positive relationship emerged suggesting that children's overall abilities to regulate their emotions was predicted by greater use of emotion-and-problem focused strategies and encouraging emotional expression. However, when children reported on their own ER skills, this relationship varied according to the method of emotion management (e.g. inhibition, regulation) and the emotion type (sad or angry). Furthermore, the results were only significant for mother's supportive parenting, whereas the effect for father's non-supportive parenting was observed on two distinct occasions: the first was for father's report of children's levels of lability/negativity and the second for children's reported ability to regulate sad feelings. It is surprising that regulation for anger did not correlate with non-supportive parental reactions, since earlier research using normative samples have identified links between externalising negative emotions and greater use of non-supportive strategies by parents (e.g. Eisenberg et al., 1999). Perhaps relying solely on children's self-report influenced the current findings, as opposed to ultilising parental reports and/or observational ratings that had been adopted in the earlier studies.

4.4. Conclusions

The findings of the current study support previous assertions regarding the role emotion regulation difficulties play in psychopathology. Results have highlighted the deficits associated with anxious children's emotion functioning, which appear to extend beyond that of anxiety to the inclusion of other negative emotions, such as sadness and anger. In line with the emotion socialisation literature, the current study has demonstrated the importance of responding to children's negative emotions in a supportive way and how this may be particularly important for children with an anxiety disorder.

In addition, the findings add to the literature on parenting practices that are associated with child anxiety. Specifically, results demonstrated that mothers of anxious children tend to provide less emotional and problem-solving assistance to their children during times of emotional distress. This could indicate that they experience a degree of difficulty addressing emotions directly in their child and might explain the tendency to engage in more maladpative strategies such as, encouraging avoidance and overprotection (e.g. Barrett, Rapee, Dadds, & Ryan, 1996; Hudson & Rapee, 2001).

Although this study yielded a number of significant findings, several limitations should be acknowledged. First, parent reactions to negative emotions were assessed solely by self-report. This approach not only lends itself to the influence of social desirability, but also to the possibility of being less accurate and less objective. However, given the CCNES depicted 12 specific scenarios and parents were asked to consider each type of reaction listed on the questionnaire, the risk for inaccurate responding has been reduced (for a review see Holden & Edwards, 1989). Second, the data were based on predictive and correlational analyses that cannot permit causal conclusions. Longitudinal research is required to test causal hypotheses, particularly pertinent to examining the influence of

parenting variables on childhood outcomes. Third, generalisation of the findings may not be guaranteed to families other than middle-class SES or those who are predominantly Caucasian. Fourth, the current study examined group differences on emotion socialisation practices without exploring the role of moderating and mediating variables. There is a need for future research to consider the influence of such variables in the relationship between parenting and child anxiety. Finally, there are important conceptual issues to consider when assessing ER and parenting, particularly for research on psychopathology. Weems and Pina (2010) discuss challenges associated with delineating the construct of ER from other related constructs (e.g. emotion expression/activation, clinical symptoms). Thus, future research would benefit from attending to this literature and implementing empirical designs to better discriminate these constructs.

4.5. Implications for research, policy and practice

In summary, a supportive parental emotional style showed a significant and positive relationship to children's ER and was a style less adopted by mothers of anxious children. The ability for anxious children to regulate negative emotions was inferior compared to non-anxious children and this difference may be partially explained by levels of supportive parenting. As research on parenting continues to be dominated by studies involving mothers, future research is needed to delineate both joint and unique maternal and paternal influences on children's emotion functioning, particularly in the context of child anxiety where family emotion socialisation practices are demonstrating an important role. Interventions for families of anxious children is crucial because it can reduce the development of further psychopathology and assist with improving child symptomatology. Outcomes for current treatment programmes for childhood anxiety might be improved by considering the findings of this research, namely (i) the benefit of parents using supportive coping strategies in reacting to children's negative emotions and (ii) equipping children with skills to better recognise and manage their emotions.

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APPENDIX B

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8 December 2009

Mrs Katherine Hurrell
Centre for Emotional Health
Department of Psychology
Macquarie University

Reference: HE30OCT2009-D00166

Dear Mrs Hurrell,

FINAL APPROVAL

Title of project: The role of parent factors in children and adolescents with anxiety disorders

Thank you for your recent correspondence. Your response has addressed the issues raised by the Ethics Review Committee (Human Research) and you may now commence your research.

Please note the following standard requirements of approval:

1. The approval of this project is **conditional** upon your continuing compliance with the *National Statement on Ethical Conduct in Human Research (2007)*.

2. Approval will be for a period of five (5 years) subject to the provision of annual reports. **Your first progress report is due on 08 December 2010.**

   If you complete the work earlier than you had planned you must submit a Final Report as soon as the work is completed. If the project has been discontinued or not commenced for any reason, you are also required to submit a Final Report on the project.

   Progress Reports and Final Reports are available at the following website:
   http://www.research.mq.edu.au/researchers/ethics/human_ethics/forms

3. If the project has run for more than five (5) years you cannot renew approval for the project. You will need to complete and submit a Final Report and submit a new application for the project. (The five year limit on renewal of approvals allows the Committee to fully re-review research in an environment where legislation, guidelines and requirements are continually changing, for example, new child protection and privacy laws).

4. Please notify the Committee of any amendment to the project.

5. Please notify the Committee immediately in the event of any adverse effects on participants or of any unforeseen events that might affect continued ethical acceptability of the project.

6. At all times you are responsible for the ethical conduct of your research in accordance with the guidelines established by the University. This information is available at: http://www.research.mq.edu.au/policy

If you will be applying for or have applied for internal or external funding for the above project it is your responsibility to provide Macquarie University's Research Grants Officer with a copy of this letter as soon as possible. The Research Grants Officer will not inform external funding agencies that you have final approval for your project and funds will not be released until the Research Grants Officer has received a copy of this final approval letter.

Yours sincerely

Dr Karolyn White
Director of Research Ethics
Chair, Ethics Review Committee (Human Research)

Cc: Dr Carolyn Schniering, Department of Psychology