

**An Examination of the Role of Parental
Cognitions in the Relationship Between
Parental Anxiety and Child Anxiety**

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ABSTRACT

Child anxiety problems are one of the most common referrals to child and adolescent mental health services. Research has identified a number of risk factors for the development of childhood anxiety problems, including parental anxiety, an anxious child temperament, and parenting interactions. Parents of anxious children are more likely to be over-controlling, yet little is known as to what beliefs or cognitions underlie these behaviours. Research from the more extensively studied area of child externalising problems, has shown that parental cognitions predict parental behaviour, which subsequently maintains child misbehaviour. In child anxiety, some studies have begun to show that parental cognitions are related to the presence of anxiety disorders in school aged children. Given that parental anxiety is related to child anxiety, it is not known whether parents' anxiety influences their cognitions about their children, and whether this influences the existence of child anxiety problems.

The present study examined the role of parental cognitions in the relationship between parental anxiety and child anxiety, in preschool children. In particular, it was hypothesised that parental cognitions would be related to both parental anxiety and child anxiety, and would mediate the relationship between these two variables. A community sample of 104 parents of children 3-5 years old completed questionnaires about their child's anxiety, their own anxiety, and three measures of parental cognitions. In addition, each child's nursery teacher completed questionnaire about the child's anxiety.

The results suggested that parental anxiety was related to child anxiety. Parental anxiety was also related to parental cognitions, namely parental locus of control and parent control of child anxious mood and behaviour. Child anxiety was related to parent expectations of child anxious mood and behaviour, and parent control of child anxious mood and behaviour. However, parental cognitions were not found to mediate the relationship between parental anxiety and child anxiety. Rather, whilst parent control of anxious *mood* was uniquely related to both parental anxiety and child anxiety, parent control of anxious *behaviour* was only uniquely related to parental anxiety.

The findings of the study have implications for the involvement of parents in interventions for child anxiety problems from as early as preschool age. They also highlight the importance of focusing on parental cognitions in the treatment of children with anxiety problems. In particular, addressing parental anxiety may help to increase parents' ability to change anxious children's avoidant behaviour.

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CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

Anxiety disorders are one of the most common forms of psychological problems in childhood and adolescence (Albano, Chorpita & Barlow, 1996; Anderson, Williams, McGee & Silva, 1987; Bernstein & Borchardt, 1991), and account for a high proportion of referrals to child and adolescent mental health services. Several risk factors have been highlighted for the development of child anxiety problems. Parental anxiety has been identified as being related to an increased risk for child anxiety. Over-controlling parenting behaviours are also associated with increased child anxiety problems. In more extensively researched areas of child difficulties, parental cognitions have been found to be significant in their impact on parenting behaviours, and subsequently on child behaviour. Recent studies of school-aged anxious children have also begun to highlight a relationship between parental cognitions and childhood anxiety problems. Less is known as to whether these parental cognitions are related to increased levels of parental anxiety.

This study examined the role of parental cognitions in the relationship between parental anxiety and child anxiety. In contrast to existing research, the current study focuses on young children at preschool age. In addition, it incorporates an assessment of parental anxiety as well as child anxiety. It is proposed that parental cognitions will be related to both parental anxiety and child anxiety, and will mediate the relationship between them.

This introduction outlines the definition of childhood anxiety problems, and presents epidemiological data on its prevalence and prognosis. Aetiological theories which have attempted to account for the development and maintenance of childhood anxiety are summarised, including genetic factors, life events, social learning. In addition, several risk factors for the development of child anxiety problems are then reviewed. In particular, the roles of parental anxiety, parenting behaviours, and an anxious vulnerability are highlighted. With regard to the potential importance of parental cognitions, findings from the field of externalising problems are summarised. The more limited existing research on the cognitions of parents with anxious children is then discussed. Finally, the rationale for the current study is presented along with the hypotheses.

1.2 DEFINITION OF CHILDHOOD ANXIETY PROBLEMS

Fear is a natural response to a stimulus, which poses a threat to well-being, safety or security (Carr, 1999). Anxiety is the body's adaptive response to these situations, a response which may be expressed through affect, behaviour, physiology, and cognitions. Nearly all children experience some degree of fear during their development (Muris & Merckelbach, 2000; Ollendick, King & Yule, 1994). These fears vary in intensity, frequency and duration, but tend to be mild, transitory and age-specific. The stimuli which elicit fear change over the course of developmental stages, in line with changes in children's cognitive and social development (Ollendick, King & Muris, 2002). For example, infants tend to fear loud noises, unexpected objects and strangers; toddlers fear separation from their parents and the

dark; and children 5-7 years often have fears of animals, injury and disasters (Carr, 1999; Dadds & Barrett, 2001).

For a small proportion of children and adolescents, these normal childhood fears may increase in intensity, becoming chronic and dysfunctional. For these children, normal daily activities are often impaired and their anxiety becomes a pervasive, intrusive problem requiring clinical intervention (Messer & Beidel, 1994). Childhood anxiety disorders include separation anxiety disorder, generalised anxiety disorder, social phobia, agoraphobia, panic disorder, specific phobias, as well as other disorders where anxiety plays a significant role, such as obsessive compulsive disorder and post-traumatic disorder. In both ICD-10 and DSM-IV, the different anxiety disorders are seen as marked and excessive, and lasting over an extended period of time. In addition, they are not adaptive or age-specific and cause significant interference with functioning. All have clinical features in the areas of affect, behaviour, perception, physiology and cognition as in adults (see Table 1).

Table 1: Clinical features of anxiety (adapted from Carr, 1999 pp.428-249)

Domain	Symptoms/features
Affect	Fear, worry, tension, uneasiness
Behaviour	Avoidance of danger
Physiology	Hyperarousal
Cognitions	Higher estimates of the probability and consequences of threat; lower estimates of coping ability

Spielberger and colleagues (Spielberger, Gorsuch, Lushene, Vaggs & Jacobs, 1983) have highlighted two forms of anxiety. *State anxiety* is an acute, transient experience which occurs in specific situations. *Trait anxiety* is a stable, enduring, chronic condition characterised by hyperarousal, and comprises non-specific symptoms of fear, worry, and other negative mood states not unique to a single disorder. Distinctions have also been made between trait anxiety and anxiety disorders (Craske, 1999). Trait anxiety is viewed as a continuous characteristic that when elevated represents a generalised vulnerability to mood disorders, but may not cause clinically significant functional impairment by itself, whereas anxiety disorders represent specific anxiety symptom clusters that cause distress or impairment. The definition of childhood anxiety problems varies greatly across different studies, but here it will be used to refer to both high trait anxiety and anxiety disorders, unless otherwise specified.

1.3 EPIDEMIOLOGY

Anxiety disorders are one of the most prevalent types of psychological disorder experienced by children (Albano et al., 1996; Anderson et al., 1987; Bernstein & Borchardt, 1991), especially school-aged children (Bell-Dolan & Brazeal, 1993; Bowen, Offord & Boyle, 1990; Schniering, Hudson & Rapee, 2000). Prevalence rates vary depending on the sample studied and the definition of 'anxiety', but several epidemiological studies have estimated the prevalence of anxiety disorders in non-selected community samples of children to range from 5.7%-17.7% (see Costello & Angold, 1995 for a review). Twelve-month prevalence rates have been estimated to range from 10-20% (Anderson et al., 1987; Bernstein & Borchardt,

1991; Kashani & Orvaschel, 1988; Kashani, Vaidya, Soltys, Dandoy, Katz et al., 1990). More general anxiety disorders that have a major impact on children's functioning are found in 3-10% children, with about 8% requiring clinical treatment (Anderson et al., 1987; Bernstein & Bocharadt, 1991; Kashani & Orvaschel, 1988; Kashani et al., 1990; Meltzer, Gatward, Goodman & Ford, 2000). In general, anxiety disorders are more prevalent in girls than boys, and in older than younger children (Ollendick et al., 2002). Furthermore, in community samples of children and adolescents, childhood anxiety has been found to be relatively co-morbid with depression, although this is less frequent for phobic disorders than for other anxiety disorders (Costello & Angold, 1995).

In general, there appears to be a modest level of continuity for childhood anxiety disorders. For the majority of children, anxiety is a common, functional and transitory experience, and childhood anxiety disorders typically remit within 3-4 years (Last, Perrin, Hersen & Kazdin, 1996). However, for many children the disorder is more chronic especially if untreated (Ollendick & King, 1994), with problems persisting into adolescence (Last et al., 1996). Dadds and colleagues (Dadds, Holland, Laurens, Mullins, Barrett et al., 1999) found that 50% children with anxiety disorders in a community sample still met criteria two years later, whilst Keller and colleagues (Keller, Lavori, Wunder, Beardslee et al., 1992) estimated that 46% children aged 6-19 with an anxiety disorder would still be having problems eight years later.

The significant impact of childhood anxiety disorders on functioning has also been highlighted (Keller et al, 1992). Childhood anxiety problems can be highly

distressing and are associated with a range of social impairments (Dadds, Spence, Holland, Barrett & Laurens, 1997; Klein & Last, 1989), and lower school achievements (Ialongo, Edelson, Werthamer-Larson, Crockett & Kellam, 1994). It seems that there is also an increased risk of later adjustment problems, including an increased risk for anxiety disorders in young adulthood (see reviews by Klein, 1995; Thyer, Nesse, Curtis & Cameron, 1996). Retrospective reports of adults with anxiety disorders, have described a history of childhood anxiety with an onset of symptoms in late childhood or adolescence (Berg, 1976; Berg, Marks, McGuire & Lipsedge, 1974; Gittelman & Klein, 1984; Klein, 1981; Klein, Manuzza, Chapman & Fyer, 1992; Thyer, Parrish, Curtis, Nesse & Cameron, 1985). For example, agoraphobic adults have recalled more school phobias or adjustment difficulties (Berg, 1976; Berg et al., 1974), and early histories of severe separation anxiety (Gittelman & Klein, 1984; Klein, 1981; Silove, Harris, Morgan & Boyce, 1995). Given that retrospective reports may be subject to recall biases, firmer evidence of the association between childhood anxiety and later anxiety has come from prospective studies (Last, Hansen & Franco, 1997) and larger longitudinal studies (Pine, Cohen, Gurley, Brook & Ma, 1998). Pine et al. (1998) found that adolescent anxiety or depressive disorders predicted a 2- to 3-fold increased risk for adulthood anxiety or depressive disorders. In addition, children with anxiety disorders are at risk of other adjustment problems in adult life. For example, separation anxiety disorder in childhood has been found to predict adolescent depression (Cole, Peeke, Martin, Truglio, Serocynski, 1998; Kovacs, Gatsonis, Paulauskas & Richards, 1989) especially for girls (Costello & Angold, 1995; McGee, Feehan, Williams & Anderson, 1992).

In summary, anxiety disorders are a highly prevalent childhood problem, which often have a significant impact on children's current and future functioning. Childhood anxiety problems are relatively stable over time and evidence suggests links with adult adjustment disorders, particularly anxiety. Therefore, it is important to consider the causes of child anxiety.

1.4 AETIOLOGICAL THEORIES OF CHILDHOOD ANXIETY PROBLEMS

Despite the problem being widespread and affecting children throughout childhood and adolescence, the aetiology and sequelae of childhood anxiety remain complex and elusive (Wood, McLeod, Sigman, Hwan & Chu, 2003). Various theories have been developed in attempt to account for the development of childhood anxiety problems.

1.4.1 Genetics

The genetic hypothesis is centred on the view that there is an inherited vulnerability to anxiety (Torgersen, 1990). Evidence from family-genetic and twin studies of adult and child probands has implicated a genetic component for anxiety disorders (Andrews, Stewart, Allen & Henderson, 1990; Crowe, Pauls, Slyman & Noyes, 1980; Crowe, Noyes, Pauls & Slymen, 1983; Kendler, Heath, Martin & Eaves, 1987; Topolski, Hewitt, Eaves, Sillberg et al., 1997; Torgersen, 1983). Eley's (2001) review of the genetic contribution in the aetiology of childhood anxiety concluded that there is genetic influence on anxiety in childhood, which accounts for approximately a third of the variance in most cases. The genetic contribution was found to depend on the definition of anxiety and who rated it. Researchers have

argued that what is inherited is a general propensity or vulnerability to neurosis (Andrews, 1996).

Whereas adult studies of anxiety disorders have shown a lack of significant shared environment influence (Kendler, Neale, Martin & Eaves, 1992), Eley's (2001) review concluded that there is a significant influence of the shared environment on most anxiety disorders in children and adolescents. When encompassing family studies into the picture, genetic and shared environment factors (such as maternal psychopathology) together account between them for about half of the variance in anxiety (Eley, 2001). This suggests that a significant proportion of shared environment influence will consist of family experiences during childhood.

In summary, genetic research strongly suggests a significant contribution of genetic factors to most anxiety disorders. However, whilst genetic factors play a part in childhood anxiety, they do not explain all transmission, with the effects of the shared environment contributing significantly in childhood. Thus the contribution of environmental factors needs to be examined.

1.4.2 Life events

It has been proposed that one of the pathways in the development of childhood anxiety is the impact of negative or traumatic life events, or 'direct conditioning' (Rachman, 1977). A higher number of life events have been reported by children and adolescents with high anxiety levels (Bernstein, Garfinkel & Hoberman, 1989; Kashani et al., 1990; Ollendick, Langley, Jones & Kephart, 2001; Rapee & Szollos, 1997). However this association is often specific to certain anxiety disorders, such as

separation anxiety. Furthermore, self-reports are not always reliable, especially given that anxious participants report a significantly greater negative impact of the stressors (Rapee, Litwin & Barlow, 1990), thus experiencing similar life events as more traumatic. In addition, some researchers have highlighted that even severely traumatic events are not always necessary or sufficient to produce anxiety problems (Barlow, 1988; Lonigan, Shannon, Taylor, Finch & Sallee, 1994), as these may develop in the absence of life events. Instead life events and stressors appear to interact with predisposing factors such as temperament and prior learning history, to increase the risk of children developing an anxiety problem (La Greca, Silverman & Wasserstein, 1998; Lonigan et al., 1994; Rapee et al., 1990).

In summary, whilst life events can be significant precipitating factors in the development of anxiety problems in children, they are unlikely to be necessary or sufficient to lead to problems on their own.

1.4.3 Social learning (modelling and verbal instruction)

Rachman (1977) proposed two other pathways for the development of fears in childhood: vicarious acquisition of fears (modelling fearful behaviour in parent, peers etc.), and transmission of information (verbal instruction). Adults with anxiety disorders recall experiences suggesting the importance of modelling by their parents (Bruch, Heimberg, Berger & Collins, 1989; Rapee & Melville, 1997), whilst more rigorous observational studies have shown that children show greater fear expressions and avoidance of stimuli following negative reactions from their mothers (Gerull & Rapee, 2002). Furthermore, children may similarly learn to cope with anxiety through avoidance by observing that their anxious parents' avoidance

responses are reinforced by reductions in anxiety (King, Hamilton & Ollendick, 1988). Additionally children may also receive reinforcement for viewing problems catastrophically, or their coping thoughts or problem-solving may be extinguished or punished (Capps & Ochs, 1995; Whaley, Pinto & Sigman, 1999). The anxious child is also often allowed to escape or avoid the unpleasant aspects of frightening situations and therefore may be negatively reinforced (see Ollendick et al., 2001 for a review of operant factors).

Adults with anxiety also recall experiences suggesting the importance of verbal instruction by their parents in the development of their anxieties (Bruch & Heimberg, 1994; Bruch et al., 1989; Ehlers, 1993; Watt, Stewart & Cox, 1998). Studies with children have also shown the importance of verbal instruction in the onset of anxiety problems (Menzies & Clark, 1995; Ollendick & King, 1991; Öst, 1987; Muris & Merckelbach, 2001; Muris, Steernman, Merckelbach & Meesters, 1996). Anxious child behaviour can also be selectively reinforced through parental verbalisations about fear, statements about inability to cope, and beliefs about the uncontrollability of anxiety (Barrett, Rapee, Dadds & Ryan, 1996a). However, larger more recent community studies suggest that pathways to children's fears are phobia-specific and that the causes are multi-determined (Ollendick, 1979a), with combinations of direct conditioning experiences, vicarious conditioning and instruction/information. Furthermore, not all phobias are acquired through individual-specific learning histories hence other causal factors need to be considered (Ollendick, Vasey & King, 2002).

In summary, evidence suggests that modelling and verbal instruction are important in the development of child anxiety problems. It is likely, especially with young children, that parents are most significantly involved in these processes. In fact, research has highlighted parental anxiety as a major risk factor for the development of child anxiety problems.

1.4.4 Parental anxiety

Research has suggested that the offspring of anxious parents are at increased likelihood of developing anxiety problems. Evidence for this association has been derived from two main areas: family studies and treatment studies.

1.4.4 a) Family studies

Family studies have used two methodologies in examining the association between parental anxiety and child anxiety: “*top down*” studies, examining the offspring of anxiety disordered adults; and “*bottom up*” studies, assessing the parents of children with anxiety disorders. These studies are summarised in Table 2.

Top down studies

Children of parents with depression plus an anxiety disorder have been found to have significantly more anxiety disorders than children of non-clinical parents (Weissman, Leckman, Merikangas, Gammon & Prusoff, 1984). In fact, panic disorder in the parents conferred more than a threefold increase of separation anxiety in the children. A further study found that 68% children of agoraphobic parents met a DSM-IV diagnosis, with anxiety disorders being the most common (Capps, Sigman, Sena, Henker & Whalen, 1996). Other studies have also supported existence of a higher

prevalence of anxiety disorders in the offspring of anxious adults than is found in epidemiological studies (Berg, 1976; Beidel & Turner, 1997; Biederman, Rosenbaum, Bolduc, Faraone & Hirshfeld, 1991; Mancini, Van Ameringen, Szatmari, Fugere & Boyle, 1996; Mufson, Weissman & Warner, 1992). There is some evidence to suggest that the development of child anxiety problems is specific to children of anxious parents compared to other disorders. Turner and colleagues (Turner, Beidel & Costello, 1987) found that children of anxiety-disordered patients were seven times more likely than children of non-psychiatric disorder control parents, and twice as likely than children of depressed parents, to have an anxiety disorder. These children reported being more anxious and tearful, having more school difficulties, more worries about family members and themselves, and more somatic complaints, than comparison children.

Several studies have also used an anxious temperament or 'inhibition' in young children (see section 1.4.6) as a risk factor for child anxiety, to examine the relation with parental anxiety. Rosenbaum and colleagues (Rosenbaum, Biederman, Gersten, Hirshfeld, Meminger et al., 1988) found that the children of parents with an anxiety disorder had more anxious temperaments themselves. Biederman and colleagues (Biederman Rosenbaum, Bolduc, Faraone & Hirshfeld, 1991) compared the children of anxious parents to children of parents with depression plus anxiety, and controls. They found that children of anxious parents (either anxiety alone or co-morbid with depression) had higher rates of both anxiety and depressive disorders than non-clinical controls. When the children were then classified into 'inhibited' or 'not inhibited', it was found that children with anxious parents (with or without depression) demonstrated higher rates of inhibition than control children

(Rosenbaum et al., 1988). In addition the risk for anxiety disorders in temperamentally anxious children is higher if they also have a parent with anxiety disorder (Rosenbaum, Biederman, Bolduc, Hirshfeld, Faraone et al., 1992). Thus, parental anxiety appears to be related to an anxious vulnerability or temperament. Noticeably Rosenbaum et al.'s (1988) appears to be the only one of the 'top-down' studies which has examined *preschool* children of parents with anxiety problems.

In summary, evidence from top-down family studies shows that the risk for anxiety disorders is particularly high for the offspring of anxious parents. The association between parental anxiety and child anxiety is also apparent as early as preschool age, using anxious temperament as an index of child anxiety.

Bottom up studies

Family studies assessing the parents of children with anxiety disorders, have also shown the high familiarity of anxiety. Parents of children with anxiety disorders have higher rates of anxiety disorders themselves with little specificity of the anxiety disorders involved (Berg et al., 1974; Last, Hersen, Kazdin, Orvaschel & Perrin, 1991; Martin, Cabrol, Bouvard, Lepine, & Mouren-Siméoni, 1999; Messer & Beidel, 1994). The exception to this appears to be panic disorder and OCD, which seem to have a more genetic basis (Last et al., 1991), with parents of children with panic disorder being more likely to have panic disorder themselves, and similarly for OCD. Parents of children with other types of childhood disorder have not been found to have such high levels of parental anxiety (Gittelman-Klein, 1975; Last, Hersen, Kazdin, Francis & Grubb, 1987). Compared to parents of hyperactive children, parents of school phobic children had a higher rate of separation anxiety disorder

(Gittleman-Klein, 1975). Similarly, rates of anxiety disorders in parents of children with attention deficit hyperactivity disorder are similar to parents of non-clinical children, whereas the rate of familiarity is much higher for parents of anxious children (Last et al., 1991). Furthermore, compared to non-anxious psychiatric controls, a higher percentage of mothers of children with separation anxiety disorder and/or overanxious disorder had a lifetime history of an anxiety disorder (Last et al., 1987). Except for one study (Messer & Beidel, 1994), these effects have been found more for mothers than for fathers (McClure, Brennan, Hammen & Le Brocque, 2001), and this may be due to their role as primary caregiver.

Noticeably, bottom-up studies have focused on parents of children in middle childhood. Only one study appears to have assessed parental anxiety in a sample that included preschool children. Parents of children (aged 2-7 years) with an anxious temperament had higher rates of anxiety disorders, compared with parents of non-clinical control children and parents of children who did not have an anxious temperament (Rosenbaum, Biederman, Hirshfeld, Bolduc, Faraone et al., 1991). Furthermore, children who remained temperamentally anxious or 'inhibited' over five years were found to be more likely to have parents with higher rates of multiple anxiety disorders and continuing anxiety disorders (Hirshfeld, Rosenbaum, Biederman, Bolduc, Faraone et al., 1992).

In summary, bottom-up studies have also suggested a familial predisposition for anxiety disorders. The increased rates of anxiety disorders in parents of both anxious and inhibited children, highlights the relationship between parental anxiety and early child anxiety. Again whilst only one study has assessed the level of anxiety problems

in parents of preschool children (Rosenbaum et al., 1991), it seems that the relationship is identifiable in young children as early as preschool age.

Therefore, both top-down and bottom-up studies suggest that there is a relation between parental anxiety and child anxiety. Children of anxious parents are more likely to develop anxiety problems of their own, and parents of anxious children have more anxiety problems themselves. Thus, there appears to be strong evidence for the existence of a familial factor in the transmission in the anxiety disorders. Studies of children with an anxious temperament, as an early indicator and risk factor for anxiety, have shown that this relationship is apparent as early as preschool age. Further support for the association of child and parental anxiety can be found in treatment studies.

1.4.4 b) Treatment studies

Research examining the effectiveness of different treatments for childhood anxiety disorders also suggests that parental anxiety plays a significant role in the development or maintenance of childhood anxiety problems.

The use of cognitive and behavioural therapy (CBT) in the treatment of childhood anxiety disorders is well supported within randomised controlled trials, and has been shown to be effective in treating single disorders and mixed anxiety disorders (Kendall, 1994). However, Cobham and colleagues (Cobham, Dadds & Spence, 1998) found that high parental anxiety was a risk factor for poorer treatment outcomes for anxious children. Recent interventions have been designed to take account of this by incorporating family work. Barrett and colleagues (Barrett, Dadds

& Rapee, 1996b) found that post-treatment the percentage of children no longer meeting diagnostic criteria for anxiety disorders was 57% for CBT treatment for children alone, but rose to 84% when a family intervention was added. This enhanced effectiveness of family treatment has also been shown in group-based interventions (Barrett, 1998). Furthermore, by incorporating parental anxiety management in a family intervention, Cobham et al. (1998) found that the efficacy of CBT for children with anxious parents was enhanced. At post-treatment, 39% of children who received CBT no longer met diagnostic criteria, compared to 77% in the CBT plus parental anxiety management treatment group. Whilst these studies suggest that including parents in child treatment increases effectiveness, they did not specifically assess any change in parental anxiety. Therefore it is not known whether child anxiety decreased due to an improvement in parental anxiety, or improvements in parent interactions with their anxious children.

In summary, the involvement of parents in treatment helps to increase treatment effectiveness for anxious children. Whilst this does not provide concrete evidence that parental anxiety is related to child anxiety, it does appear that parents do play a significant role in maintaining their children's anxiety problems, and it is possible that their own anxiety may be involved in this.

Therefore, the evidence from family studies and from treatment studies shows that parental anxiety is related to child anxiety. Whilst genetics are able to explain the development of anxiety in a percentage of children, the shared environment has also been highlighted as significant. Thus, it is also important to consider the nature of

parenting interactions, to examine whether these differ when either parents or children are anxious.

Table 2: Summary of studies examining the association between parent anxiety and child anxiety

Authors	Sample N=	Assessments	Finding
<i>1) Top down studies</i>			
Beidel & Turner (1997)	129 children (7-12 years) of: 1) parents with anxiety disorder (n=28) 2) depressive parents (n=24) 3) parents with anxiety and depression (n=29) 4) parents with no psychiatric disorder (n=48)	Child interviews	Offspring of anxious parents were more likely to have only anxiety disorders.
Berg (1976)	Children (7-15 years) of 299 mothers with agoraphobia	Family history interviews	Prevalence of school phobia of 7% for 7-15 year old children and 15% for 11-15 year old children of anxious mothers.
Biederman et al. (1991)	121 children of: 1) parents with panic disorder and agoraphobia (PDAG) without major depressive disorder (MDD) (n=14) 2) parents with comorbid PDAG and MDD (n=25) 3) parents with MDD without comorbid PDAG 4) other psychiatric control parents (n=23) 5) non-clinical comparison parents (n=47)	Parent interviews	Children of parents with panic disorder and agoraphobia (alone or with comorbid depression) had higher rates of anxiety and depressive disorders.
Capps et al. (1996)	32 children (8-14 years) of: 1) agoraphobic parents in treatment (n=16) 2) controls with no history psychopathology, matched on age, gender and socio-economic status (n=16)	Child self-report and interviews; parent self-report and interview	Children of anxious parents more fearful and anxious. 68% children of anxious parents met DSM-III-R criteria, anxiety disorders being the most common. Anxious parents reported more separation anxiety.
Mancini et al. (1996)	47 children (12-18 years) of 26 social phobic outpatients	Parent and child interviews	49% children had at least one lifetime anxiety disorder diagnosis, 65% had more than one.
Mufson et al. (1992)	214 children (6-23 years) of parents (from 89 families) with: 1) major depression and panic disorder 2) major depression and no panic disorder 3) other psychiatric disorder controls 4) no psychiatric disorder controls	Child and parent interviews	Children of parents with major depression and panic disorder were at greatest risk for both major depression and anxiety disorders

Rosenbaum et al. (1988)	Inhibited and not-inhibited children (2-7 years) of parents with: <ol style="list-style-type: none"> 1) panic disorder and agoraphobia 2) major depressive disorder 3) panic disorder with agoraphobia and major depressive disorder 4) neither disorder 	Parent interviews; videotaped observations for inhibition in children	Children of anxious parent (with and without depression) were more likely to be inhibited than the other two groups.
Silverman et al. (1988)	42 children (6-16 years) of parents with anxiety disorders	Parent questionnaires and interviews; child self-reports	Children of mothers with anxiety disorders viewed their families as less cohesive, more conflictual, less independent, and more controlling
Turner et al. (1987)	59 children (7-12 years): <ol style="list-style-type: none"> 1) 16 children of parents with anxiety disorders 2) 14 children of dysthymic parents 3) 13 children of parents with psychiatric disorder 4) 16 non-clinical control 	Child self-report questionnaires and interviews	Children of anxious parents reported they felt more anxious and tearful, more school difficulties, more worries about family members and themselves, and more somatic complaints. Also were 7 times more likely than children of control parents, and twice as likely than children of depressed parents, to have an anxiety disorder than the control children.
Weissman et al. (1984)	Children (6-17 years) of 215 probands: <ol style="list-style-type: none"> 1) 37 children of parents with major depressive disorder and anxiety 2) 23 children of parents with depression 3) 40 children of non-clinical controls 	Child interviews and medical records	3 fold increase of separation anxiety in children of parents with depression + anxiety

Authors	Sample N=	Assessments	Finding
<i>2) Bottom up studies</i>			
Berg et al. (1974)	Mothers of inpatient children: 1) 100 school phobic 2) 113 non-school phobic	Maternal interviews	20% mothers of anxiety-disordered adolescents had a history of psychiatric disturbance, 50% from an affective disorder.
Gittelman-Klein (1975)	Parents of 1) 42 school phobic 2) 42 hyperactive children	Parent interviews re self and child	Parents of school phobic children had a higher rate of separation anxiety disorder than control parents.
Kashani et al. (1990)	Parents of 100 inpatient children (7-12 years): 1) 21 children with anxiety disorders 2) 48 possibly anxious 3) 31 non-anxious children	Parent self-report questionnaire	Mothers of children with anxiety disorders had the highest rate of negative symptoms (somatization, phobic anxiety, depression and hostility)
Last et al. (1991)	First and second degree relatives of children: 1) 94 children with anxiety disorders; 2) 58 children with attention deficit hyperactivity disorder; 3) 87 never psychiatrically ill children	Family history method	Rates of anxiety disorders for the parents of the ADHD children similar to those of the non-clinical children. Rate of familiarity was higher for parents of anxious children. Parents of children with overanxious disorder were more likely to have adult relatives with panic disorder.
Last et al. (1987)	Mothers of 73 children (mean ages range 9.1 - 13.9 years): 1) Mothers of 58 children with anxiety disorders 2) Mothers of 15 psychiatric control children	Interviews with mothers and children	83% of mothers of anxious children had a lifetime history of an anxiety disorder. 57% had anxiety disorder at same time as child.
Martin et al. (1999)	Parents of 51 anxious school refusing children (6-18 years)	Parent interviews; child interviews	Increased prevalence of simple phobias and/or social phobia among parents of phobic school refusers; increased prevalence of panic disorders among parents of school refusers with separation anxiety disorder.
McClure et al. (2001)	816 offspring (15 years) of community sample of parents at high-risk of depression and anxiety	Interviews with mothers, fathers, and children	Children of anxious mothers twice as likely to have had an anxiety disorder. Maternal, but not paternal, anxiety disorder significantly predicted the presence of anxiety disorders in children.
Messer &	Community sample of parents of 100 children (3 rd -6 th grade):	Child interview	Fathers of anxious children (both anxiety disorder and test-

Beidel (1994)	<ol style="list-style-type: none"> 1) with anxiety disorders 2) with test anxiety 3) non-clinical controls 	Parent self-report questionnaire	anxious children) had more obsessive compulsive symptoms.
Rosenbaum et al. (1991)	Parents of children (7-8 years): <ol style="list-style-type: none"> 1) children identified as inhibited (at 21 or 31 months) 2) children identified as uninhibited 3) non-clinical control children 	Parent interviews	Parents of inhibited children had higher rates of anxiety disorders (multiple anxiety disorders, continuing anxiety disorder, social phobia, and childhood anxiety disorders).
Rosenbaum et al. (1992)	Parents of children (4-7 years): <ol style="list-style-type: none"> 1) Inhibited children with anxiety disorders 2) Inhibited children without anxiety disorders 3) Children with neither inhibition or anxiety disorders 	Parent interview	Parents of inhibited children with multiple anxiety disorders had higher rates of anxiety disorders themselves.
Hirshfeld et al. (1992)	Parents of children (7.5-8 years) <ol style="list-style-type: none"> 1) consistently inhibited children who had remained inhibited over five years 2) children who were not consistently inhibited 	Parent interviews	Consistently inhibited children were more likely to have parents with higher rates of multiple anxiety disorders and continuing anxiety disorders.

1.4.5 Parent interactions

There is a large literature examining interactions between anxious children and their parents, and to a lesser extent the interactions between anxious parents and their children. Studies have typically assessed parental behaviours, focusing on two main factors – rejection and control (see Rapee, 1997 for a review). The results of this research have suggested that parent interactions with anxious children are characterised by an over-protective or over-involved style, with higher levels of parent control behaviours. These parenting behaviours have been seen as significant in the development and maintenance of childhood anxiety. Evidence is derived from several sources, including retrospective studies, self-reports from children and parents, and observational studies.

1.4.5a) Retrospective studies

Studies have examined anxious adults' recall of their experiences of being parented. These show that anxiety disordered adults, compared to non-clinical controls, are more likely to remember their parents as having employed a parenting style characterised by overprotection, a lack of warmth and care with more rejection and control (Bruch & Heimberg, 1994; Gerlsma, Emmelkamp & Arindell, 1990; Parker, 1981; Rapee, 1997; Silove, 1986). However, this evidence is based on recall and therefore may be subject to memory biases. Concurrent reports of anxious children about parenting might represent a more reliable collection of information about differences in parent behaviours.

1.4.5 b) Children's reports

Further evidence for a particular parenting style that might contribute to childhood anxiety has come from children's reports of parenting. These studies have used child reports through questionnaires and interviews with non-clinical samples of children, clinically anxious children, and children of clinically anxious parents.

Studies of *non-clinical children* have shown that self-rated anxiety symptoms were positively correlated with inconsistent parenting (Kohlmann, Schumacher & Streit, 1988), as well as rejecting and controlling parenting based on child report (Gruner, Muris & Merckelbach, 1999; Muris, Merckelbach & Hulsenbeck, 2000; Stark, Humphrey, Crook & Lewis, 1990). Studies of *children with anxiety disorders* have also assessed their perception of their parenting compared to controls. These have found that anxious children describe their families as less accepting (Siqueland, Kendall & Steinberg, 1996), less promoting of independence (Messer & Beidel, 1994), highly conflictual and controlling, lacking in support and cohesion, and poor in communication and problem solving (Ginsburg, Silverman & Kurtines, 1995). Research has also assessed the *offspring of anxious parents* and has provided further support for the influence of parenting. Children of mothers with anxiety disorders view their families as less cohesive, more conflictual, less independent, and more controlling than children of non-anxious mothers (Silverman, Cerny & Nelles, 1988). Children of anxious parents also report less control over negative events than comparison children (Capps et al., 1996), suggesting that parental over-controlling behaviours may transmit to their child's sense of control.

In summary, studies examining children's self-reports suggest that parent control is related to child anxiety. However, child self-reports may not always be reliable, especially given that the children studied have anxiety problems which may bias their interpretation of their parenting. Thus other studies have assessed parental reports of their own parenting behaviours.

1.4.5 c) Parents' reports

When parents are asked to report on their childrearing style, further support has been found for an association between parenting control and childhood anxiety (Berg & McGuire, 1974; Boer, 1998; Chorpita, Brown & Barlow, 1998; Nilzon & Palmerus, 1997), although this is not true of all studies (Muris et al., 1996). For example, Boer's (1998) study of offspring of anxiety disordered parents also showed that anxious parents themselves reported a somewhat less affectionate and more controlling rearing style, particularly if they had a child with an anxiety disorder. However, parental reports of their parenting are potentially subject to recall biases including a concern about reporting 'bad' parenting. Two studies have used more behaviourally operationalised measures of maternal control, which might be less likely to be associated with negative connotations. These have found that mothers of withdrawn and anxious children reported that they would use high control strategies based on directive and coercive teaching strategies to socialise their preschool children (Rubin, LeMare & Lollis, 1990; Mills & Rubin, 1998).

In summary, parent reports also suggest the importance of parent control in relation to child anxiety. However, parental reports are often subject to inherent perceptual biases and therefore these cannot be relied upon for firm evidence that parental

behaviours with anxious children differ to parents of control children. Observations of parent-child interactions are a better indicator of actual parenting interactions, especially given that they do not rely on parent or child perception, which may share biases in perception.

1.4.5 d) Observational studies

Observational studies have examined the interactions of non-clinical children and their parents, clinically anxious children and their parents, and children of parents with anxiety disorders. They also highlight the importance of specific parenting behaviours which appear related to the development and/or maintenance of child anxiety.

Studies observing interactions between *non-clinical children* and their parents, particularly during difficult tasks, have found evidence of a controlling and rejecting parenting style in more anxious children (Dumas, LaFreniere & Serketich, 1995; Hermans, Ter Laak & Maes, 1972; Krohne & Hock, 1991; Mills & Rubin, 1998). One study has suggested that this interaction may be specific to mothers in relation to their female offspring (Krohne & Hock, 1991). It seems that the evidence for the role parental controlling behaviours is specific to child anxiety. When parent-child interactions of more anxious children have been compared to interactions of aggressive and non-distressed dyads, only the parents of more anxious children were more likely to use strategies such as criticism, intrusiveness, and punishment (Dumas & LaFreniere, 1993; Dumas et al., 1995). These interactions were characterised by relatively high parental control and aversiveness, with parents responding less often to their children.

The observational studies of interactions of non-clinical children with high anxiety and their parents have mostly been based on the interactions between parents and children from seven years upwards, with little research on preschool children. One study which observed the parenting interactions of preschool children (aged 2-6 years), used a sample of anxiously withdrawn children and their parents, and compared them to socially competent and average children and their parents (LaFreniere & Dumas, 1992). They found that mothers of anxious withdrawn toddlers engaged in a high degree of negative reciprocity and superfluous control, and were instead highly aversive in response to their child's aversive behaviour and extremely negative in response to their child's negative affect.

A more recent study with preschool children observed parent interaction during three types of play: structured, unstructured and peer play (Rubin, Cheah & Fox, 2001). Children's anxious behaviour (shyness and socially reticence) was predicted by maternal over-solicitousness in free play (highly affectionate but directive controlling behaviours). Children's anxiety was predicted by the interaction of an anxious vulnerability (emotional regulation) and parent behaviours (lack of maternal control or guidance) in structured play, but not unstructured play. Thus whilst parental behaviours may be associated with child anxious behaviours, this may depend on the task and it is likely that parental behaviours moderate a child's anxious predisposition. Thus it seems that aversive interactions with anxious children may be established at an early age, and may be significant in the aetiology and maintenance of childhood anxiety.

However, these observational studies are cross sectional, showing only correlations between child anxiety and parental behaviours. Thus they do not help establish the direction of causality as to whether children become anxious because of their parents' over-controlling and over-protective behaviours or whether parents are reacting to anxious behaviour in their children. However, one longitudinal study of parenting of anxious toddlers has been conducted (Rubin, Nelson, Hastings & Asendorpf, 1999). Parental perceptions of child anxiety (shyness) predicted parental controlling behaviours (lack of encouragement of independence) two years later. However, parental controlling behaviours at two years did not predict later anxiety at four years. This gives support to the hypothesis that young children's dispositional characteristics predict subsequent parental behaviour. Therefore, it is likely that parents are responding to an anxious vulnerability in their children with over-controlling behaviours.

Observational studies of *clinically anxious children* and their parents also support the hypothesis that a more controlling style of childrearing is associated with childhood anxiety. Parents of children with anxiety disorders have been observed to be less granting of psychological autonomy than the parents of non-anxious control children (Siqueland et al., 1996). Again this effect seems to be specific to anxiety disorders compared to other childhood disorders. Hudson and Rapee (2001) observed mother-child interactions of clinically anxious children, oppositionally defiant children and non-clinical children aged 7-15, whilst the child completed difficult cognitive tasks. They found that mothers of both anxious and oppositional children displayed greater and more intrusive involvement than mothers of non-clinical children. Mothers of anxious children were also more negative during the interaction than mothers of non-

clinical children. Further research has examined whether the nature of these parenting interactions are specific to one child in the family. Hudson and Rapee (2002) observed children (with anxiety disorders compared with non-clinical children) and their siblings interacting with their parents during a puzzle task. Consistent with their previous study, they found that mothers of children with anxiety disorders were more involved and intrusive. In addition they found that mothers of anxious children were also more involved with the anxious child's sibling. This suggests that over-involved parenting may not just be a feature of interaction with the anxious child, but may be more related to child anxiety in conjunction with child characteristics.

Finally, observational studies of *the children of parents with anxiety problems* have also highlighted the importance of parenting behaviour in childhood anxiety. Compared to controls, clinically anxious mothers are more critical to their children (Hirshfeld, Biederman, Brody, Faraone & Rosenbaum, 1997), less warm and positive in their interactions, less granting of autonomy and more critical and catastrophising (Whaley et al., 1999). In fact, maternal behaviours exhibited during interactions were found to be the most salient predictors of child anxiety, more than maternal psychopathology (Whaley et al., 1999). Thus, the behaviours displayed by these mothers seem to be potential mediators of the association between maternal anxiety and child anxiety.

In a recent observational study Turner and colleagues (Turner, Beidel, Roberson & Tervo, 2003) used a situation which contrary to former studies, was not anxiety provoking or conflictual. They found that parents with anxiety disorders did not

actually restrict their children (aged 7-12) more than non-clinical control parents. But the emotional climate of the interaction was found to differ, with anxious parents more physically distant and less cohesive and expressive. Interestingly, anxious parents reported higher levels of distress, feeling more apprehensive when their child was involved in risky play. Anxious parents were also more worried about everyday events such as parental separation, skateboarding and staying out overnight. Therefore it seems that in non-anxiety provoking situations anxious parents are not more over-controlling, but they do feel more worried about their child in potentially anxiety-provoking situations.

In summary, a large number of observational studies have assessed parent behaviours. These have found that parental behaviours, particularly control and over-protectiveness, appear to be related to child anxiety. This true for both clinically and non-clinically anxious children, as well for the children of parents with anxiety disorders. This evidence is in concordance with studies already summarised using parent reports and child reports. Although less research has been conducted on younger children, it seems that these patterns of interaction are established at least as early as toddlerhood and occur during anxiety-provoking situations. Evidence also seems to suggest that parents may be reacting to an anxious vulnerability in their children. This has been found to be another potential risk factor for the development of child anxiety problems.

1.4.6 Behavioural inhibition

Genetic studies seems have suggested that what is inherited is an anxious vulnerability (Andrews, 1996). A number of researchers have examined this

possibility using ‘behavioural inhibition’, which has been found to be associated with later anxiety problems in children.

Behavioural inhibition is defined as a temperamentally-based predisposition of children to react consistently to novel and unfamiliar events, both social and non-social, with initial restraint and avoidance together with signs of wariness and fear or distress (Kagan, 1997; Reznick, Hegeman, Kaufman, Woods & Jacobs, 1992). In response to encounters with unfamiliar objects, people and situations, these children show a tendency to decrease verbalisations, withdraw, and seek proximity to a familiar person. Inhibited children characteristically also have a long latency to approach, in the face of novelty and social interaction (Kagan, Arcus, Snidman, Feng, Hendler et al., 1994; Kagan, Reznick, Clarke, Snidman & Garcia-Coll, 1984). These children have a low threshold for arousal in these situations (Kagan, Reznick & Snidman, 1987), shown in physiological correlates such as increased arousal in the limbic-sympathetic axes (heart rate, heart rate variability, blood pressure, pupil dilation, muscle tension, cortisol levels, urinary norepinephrine levels and vocal frequency) (Kagan, Reznick, & Snidman, 1988a).

1.5.2 a) Measurement

The construct of behavioural inhibition has been operationalised in observational research as approach and interaction versus avoidance and distress in response to novel stimuli. Different situations have been used to study behavioural inhibition across developmental stages: using visual and auditory stimuli in babies (Snidman, Kagan, Riordan, Shannon et al., 1995); using interactions with a strange adult or toy in 2 year olds (Reznick, Gibbons, Johnson & McDonough, 1989); and using social

situations such as peer group play in older children (Kagan, 1989). Increasingly, it seems that behavioural inhibition is used as a measure specific to encounters with strangers (Asendorpf, 1993) and has not only been measured through observation of interaction with unfamiliar peers and adults during a variety of different tasks, but also through teacher q-sorts and parent reports (Asendorpf, 1990, 1993; Asendorpf & van Aken, 1994). Parental reports of behavioural inhibition in children have been found to be correlated with observational measures in a longitudinal study (Asendorpf, 1993), and shows the highest predictive power from two other observational measures and a teacher q-sort rating (Asendorpf (1990). Studies have used behavioural inhibition both as a continuous measure and also as a categorical measure. In the latter, children in the upper and lower ends of the distribution are selected to represent ‘inhibited’ and ‘uninhibited’ children, with the inhibited group varying between the top 10-40% of the distribution (Kagan, Reznick & Gibbons, 1989; Scarpa, Raine, Venables & Mednick, 1995).

1.5.2 b) Reliability and stability

Garcia-Coll and subsequently Kagan and colleagues have conducted the most extensive studies of behavioural inhibition using longitudinal research on children. Two samples were used: children (aged 21 or 31 months) from a large community sample followed up to 7.5 years of age; and a clinical sample of 56 children (aged 2-7 years) of parents with anxiety disorders followed up three years later (see Oosterlaan, 2001, and Turner, Beidel & Wolff, 1996 for reviews). Children were categorised as ‘inhibited’ and either ‘uninhibited’ or ‘not inhibited’, with approximately 10-15% of children in each group. Inter-individual differences in inhibition towards the unfamiliar (used both categorically and as a continuum) have

shown a substantial stability over time and a moderate consistency across different social and non-social unfamiliar situations beyond the age of 21 months (Asendorpf, 1990, 1993; Broberg, Lamb & Hwang, 1990; Bronson, 1981; Garcia-Coll, Kagan & Reznick, 1984; Gersten, 1989; Gest, 1997; Kagan et al. 1984; Kagan et al., 1987; Kagan, Reznick, Snidman, Gibbons & Johnson, 1988b; Kagan et al., 1989; Reznick et al., 1989; Robinson, Kagan, Reznick & Corley, 1992; Scarpa et al., 1995).

1.5.2 c) Later anxiety problems

Several studies have shown that inhibited children have increased rates of later anxiety disorders (Biederman, Rosenbaum, Hirshfeld, Faraone, Bolduc et al., 1990; Biederman, Rosenbaum, Bolduc-Murphy, Faraone, Chaloff et al., 1993; Caspi, Henry, McGee, Moffitt & Silva, 1996; Hirshfeld et al., 1992; Reznick et al., 1992). Undergraduates with panic disorder or depression were found to retrospectively report more childhood inhibition than non-clinical controls (Reznick et al., 1992). Using more reliable methodology in the two non-clinical and clinical samples described above alongside a non-psychiatric control group of children, inhibited children were found to have an increased risk for anxiety disorders (Biederman et al., 1990). A further study using the non-clinical sample found that children who remained inhibited over a period of five years were more likely than other children to develop anxiety disorders (Hirshfeld et al., 1992). Additional support for behavioural inhibition as a risk factor for later child anxiety comes from a longitudinal study of the clinical and non-clinical samples conducted by Biederman and colleagues (Biederman et al., 1993), in which inhibited children and those classified as 'not-inhibited' were followed up over three years. This found that inhibited children showed higher rates of anxiety disorders at follow-up than not-inhibited children,

with rates increasing from baseline to follow-up. Finally several studies have begun to suggest that inhibition may be a risk factor for later adult adjustment problems (Caspi et al., 1996; Gest, 1997).

The methodology of studies measuring behavioural inhibition in young children has been subject to criticism, particularly its measurement (Turner et al., 1996). It seems that inhibition is most apparent and stable for those children who manifest it in its extreme, using physiological measures alongside behavioural ones. However, Asendorpf's (1990, 1993) studies have suggested that inhibition is largely determined by unfamiliarity, which can be measured using parental and teacher report.

In summary, behavioural inhibition is moderately stable over the years of childhood and has good cross-situational consistency. It is measurable both through observation and parental report, with regard to the child's response to unfamiliar situations or people. There appears to be considerable evidence that inhibition in young children predicts later anxiety problems in childhood, suggesting that behavioural inhibition in children is a risk factor for the development of later anxiety disorders.

Three risk factors for the development of childhood anxiety problems have been discussed: parental anxiety, parenting behaviours, and behavioural inhibition. These have been incorporated in a more integrative theory of the development of childhood anxiety problems.

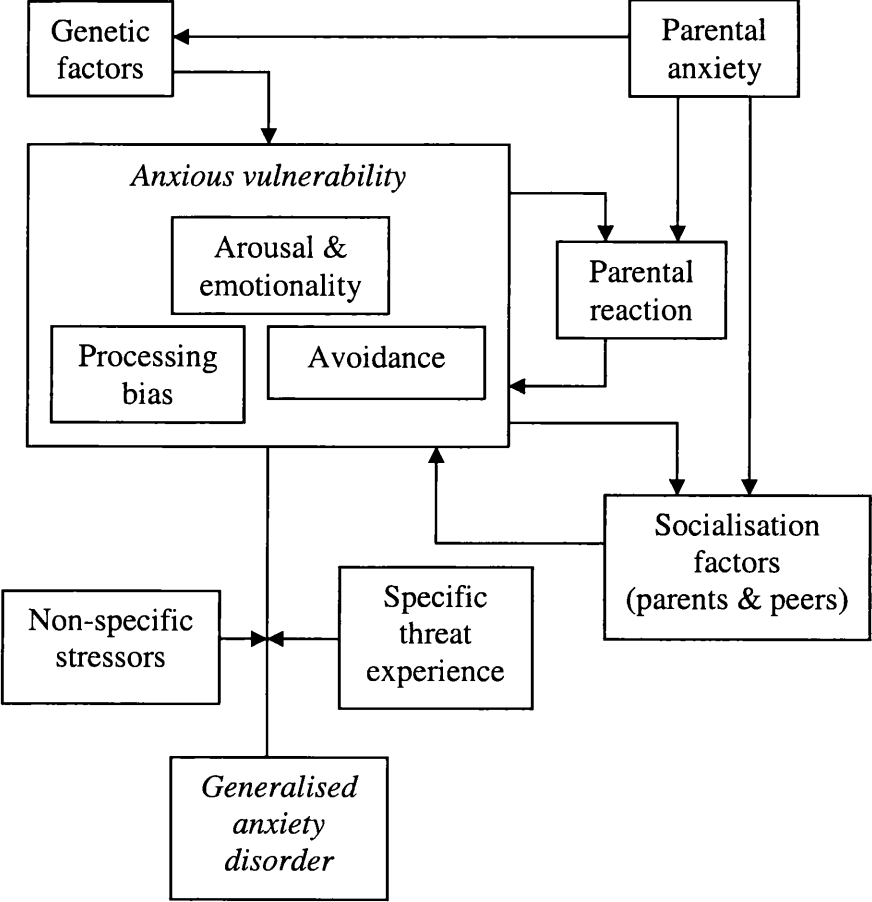
1.4.7 Integrative theories of childhood anxiety problems

Whilst the previously discussed models of childhood anxiety have attempted to explain the development of anxiety in terms of single effects, these models do not account for much of the variance in children's anxiety symptoms (Eley, 2001; Mattanah, 2001; Vasey & Dadds, 2001). The failure of these single pathway models has led researchers to move towards a view that the ontogeny of childhood anxiety is a complex, multi-determined process (Craske, 1999; Rapee, 2001; Vasey & Dadds, 2001).

More integrative models of childhood anxiety disorders have incorporated a number of risk factors into a more cohesive model of the development and maintenance of childhood anxiety. Rapee (2001) has proposed one such model of anxiety development (see Figure 1). In this model, children born to an anxious parent may have a genetic vulnerability to anxiety, and are likely to exhibit high levels of arousal and emotionality. The anxious parent then responds to their sensitive child with increased control and protection in order to reduce and prevent the child's distress. Rapee suggests that over time the parent may anticipate the child's distress and attempt to avoid the expected distress. This over-protection may increase the child's vulnerability to anxiety by strengthening the child's tendencies to perceive more threat and to avoid threat, therefore reinforcing a belief in the child that they have no control over danger (Rapee, 1991). Future social learning experiences, especially through the parent, may then enhance anxious vulnerability in the child. The model suggests that parental instruction regarding threat and modelling of anxious reactions may increase a child's tendency to associate specific stimuli with danger or by inflating the degree of danger expected.

In summary, Rapee's (2001) model encompasses a more interactive consideration of the development and maintenance of childhood anxiety. It also highlights the importance of parental anxiety and parent reactions (or behaviours) alongside an anxious vulnerability, as risk factors for the development and maintenance of childhood anxiety. However it is less clear *why* parents behave in an over-controlling manner with their anxious children. It is possible that parents are being protective of children who are prone to an anxious temperament (Rapee, 2002), but little is known about what beliefs parents hold about their anxious children. The examination of parental cognitions and attributions for child behaviour may help to understand the reasons for parenting behaviours which maintain or contribute to childhood anxiety problems.

Figure 1 – Rapee’s (2001) model of the development of generalised anxiety disorder (as cited in Vasey & Dadds, 2001, pp.495)



1.5 PARENTAL COGNITIONS

Attribution theory (Heider, 1958; Kelley, 1973) proposes underlying rules by which people attribute motives or causes to behaviours they observe, and parents have been found to spontaneously offer causal explanations about their children's behaviour (Johnston, Reynolds, Freeman & Geller, 1998). Identical child behaviours elicit different reactions from different adults based on their attributions regarding those behaviours. Existing research has highlighted the role of parental attributions or cognitions as an influence on parental feelings and actions (Goodnow, 1988), and there is increasing evidence that parental attributions affect their behavioural and emotional reactions toward their children (Dix, Ruble, Grusec & Nixon, 1986; Dix, Ruble & Zambarano, 1989). The majority of research on parental cognitions has been conducted on parental attributions about externalising problems in children. These studies are further advanced than the research on parental cognitions regarding anxious children, and emphasise the importance of studying parental cognitions, and therefore will be reviewed first.

1.5.1 Externalising problems in children

Morrissey-Kane and Prinz (1999) have highlighted that there are two categories of parental attributions about child behaviour: child-referent and parent-referent. Child-referent attributions about child age, competence, and intentionality have been found to influence parental reactions to child misbehaviour (Dix et al., 1986, 1989). Parents who attribute their children's misbehaviour as dispositional, intentional and blameworthy have an increased the probability that they will react with more negative affect and negative parental responses, including power-assertive

disciplinary strategies (Dix, 1993; Dix & Lochman, 1990; Dix et al., 1986; Dix et al., 1989). Moreover, parents of children with externalising problems have been found to have a hostile or negative bias in their attributions of their children's actions (Baden & Howe, 1992; Dix & Lochman, 1990). They are more likely to attribute their children's misbehaviour to stable, global factors outside of the mother's control, and to expect that attempts to influence their child's misbehaviour will be ineffective (Baden & Howe, 1992). In addition, Slep and O'Leary (1998) demonstrated that experimentally manipulating mothers' attributions led to differences in maternal behaviour and affect. Mothers who were told that children were misbehaving voluntarily and with more negative intent, were found to feel angrier and were observed to be more over-reactive in their discipline, than mothers told their children were not to blame for misbehaving. Furthermore, these manipulated parental attributions had an impact on child behaviour, with children exhibiting higher rates of negative affect.

Research on parent-referent attributions has examined causes such as parental competence and skill in managing child behaviour, focusing primarily on parental locus of control (Campis, Lyman & Prentice-Dunn, 1986; Rotter, 1966). Parents with an external locus of control believe their children's behaviour and development are influenced by factors outside of their control, such as dispositional factors and chance. Mothers attending mental health clinics have been found to have a more external locus of control than non-referred mothers (Mouton & Tuma, 1988), compared to community samples who have a more internal locus of control (Janssens, 1994). Furthermore, parents of children with externalising problems have

been found to have a more external locus of control (Roberts, Joe & Hallbert-Rowe, 1992).

Using a similar concept to parental locus of control, parents' attributions about success or failure in childrearing have been assessed in relation to externalising child problems. This research has shown that the way a mother interprets her child's behaviour acts as an important influence on her affective state and ultimately on her caregiving strategy (Bugental, 1993). Specifically, parents with a low perceived control of caregiving interactions (attributing unsuccessful caregiving interactions as due to more child factors than adult factors), have been found show responses that foster and maintain coercive interactions. Parents with a 'low perceived control' are more likely to show: a) increases in autonomic arousal (Bugental, Blue, Cortez, Fleck, Kopeikin et al., 1993; Bugental, Blue, Cortez, Fleck, et al., 1994; Bugental, Lewis, Lin, Lyon & Kopeikin, 1999; Lin, Bugental, Turek, Martorell & Olster, 2002); b) increases in negative affect (Bugental, Blue & Lewis, 1990; Bugental, et al., 1993; Bugental et al., 1994); decreases in the use of positive control tactics (Bugental et al., 1993); c) increases in verbal derogation of children (Bugental & Happaney, 2000); and d) increases in use of physical force and power orientated strategies when giving punishment (Bugental et al. 1999; Bugental, Lyon, Lin, McGrath & Bimbela, 1996). Furthermore, these parental reactions to children's misbehaviour appear to maintain unresponsive child behaviour (Bugental & Shennum, 1984). Finally, including cognitive retraining in a treatment package led to lower levels of harsh parenting in parents at risk for maltreating their children child (Bugental, Ellerson, Lin, Rainey, Kokotovic & O'Hara, 2002). Thus, manipulating

parental attributions influenced parental affect and behaviour, which highlights the importance of parental attributions and cognitions in predicting parental behaviours.

In summary, these studies have highlighted several parental cognitions – parental locus of control and perceived control of caregiving failure – which are significant in predicting parental affect and behaviour, and in maintaining child externalising problems. Therefore, parental cognitions about their child’s behaviour appear to have a marked influence on the way parents’ interpret and respond to their children’s behaviour patterns. Whilst the direction of the association between parental attributions and parental affect and behaviour is less clear, there appears to be some evidence that parental attributions may lead to parental behaviour (Slep & O’Leary, 1998; Bugental et al., 2002).

Given the importance of parental cognitions in influencing parent affect and behaviour and thus potentially maintaining childhood difficulties as highlighted above, it is important to consider the evidence from research on parental cognitions of their anxious children.

1.6.2 Anxiety problems in children

Although a relatively unexplored area, more recent research has begun to examine parental cognitions regarding their anxious children. These studies have provided evidence to suggest that parental cognitions about anxious children differ to parental cognitions about other children.

In the only study of parental cognitions using preschool children, a community sample of 121 four-year olds, classified children into three categories using observations and teacher reports – anxious withdrawn children, aggressive children and average children (Rubin & Mills, 1990). Mothers of anxious-withdrawn children were found to be more likely to blame themselves when their child displayed unskilled social behaviours, and felt more guilty, embarrassed, angry and disappointed in their children. Mothers were also more likely to attribute both anxious-withdrawal and aggressive behaviour to dispositional factors, compared to mothers of other children. Furthermore, the study provided evidence that parental attributions might be linked to parent behaviour, as mothers of anxious-withdrawn children placed greater emphasis on the directive teaching of social skills, and were more likely to choose high power strategies for dealing with unskilled behaviours (Rubin & Mills, 1990).

Further studies have assessed parental cognitions about how older children will respond in both ambiguous situations and anxiety-provoking situations. These have examined parent and child expectations about children's mood, behaviour, performance and ability to cope. The ambiguous situations have used hypothetical situations that could be seen as either threatening or non-threatening and asked how children and parents would respond to them (Barrett et al., 1996a). The anxiety provoking situations primarily have used the task of children speaking in front of a video camera and asked parents and children about their expectation of how children will react (Cobham, Dadds & Spence, 1999; Kortlander, Kendall & Panichelli-Mindel, 1997; Levin, 1997). These studies have been conducted with clinically anxious children aged 7-14 and their parents, and have compared them to parents of

non-anxious children (Barrett et al., 1996a; Cobham et al., 1999; Kortlander et al., 1997; Levin, 1997) and children with externalising disorders (Barrett et al., 1996a; Cobham et al., 1999). The research has primarily focused on mothers, with the exception of one study which included both parents (Barrett et al., 1996a).

These studies have found that parents of anxious children make higher levels of threat interpretations about hypothetical ambiguous situations, than parents of non-clinical control children (Barrett et al., 1996a). In addition, parent expectations of how their anxious children will respond in ambiguous or threatening situations also differs from parents of other children. First, parent expectations of anxious children's *mood* in anxiety provoking situations have been assessed, and found that mothers of anxious children expect them to be more scared (Levin, 1997) and upset (Kortlander et al., 1997). Second, parent expectations of anxious children's *behaviour* have been examined. Parents of anxious children are more likely to expect that their child will choose an avoidant solution in response to potentially threatening situations, compared to parents of both clinical and non-anxious control children (Barrett et al., 1996a).

The results are conflicting as to whether these children are actually more anxious in mood and behaviour, in ambiguous and anxiety-provoking situations. Some research has found that anxious children themselves do not expect to be more anxious than either clinical or non-clinical controls (Cobham et al., 1999). However, behavioural observations of these children during the situations have found them to be more anxious than non-anxious control children (Kortlander et al., 1997). With regard to whether they see ambiguous situations as threatening, both anxious and oppositional

children make higher levels of threat interpretations than non-anxious control children. However only anxious children predominantly chose an avoidant solution as a response (Barrett et al., 1996a). In a smaller study of four clinically anxious children compared with non-clinical controls, both high anxious and low anxious children exhibited high threat interpretation about ambiguous situations. However, only highly anxious children also included avoidance as the method of dealing with the perceived threat (Chorpita, Albano & Barlow, 1996). This research is further supported by anxious children's expectations about their behavioural response to anxiety-provoking situations, which match their parents' expectations. Anxious children report that they would be more likely to respond avoidantly, than non-clinical and clinical controls (Barrett et al., 1996a).

Avoidance appears to be a key factor which differentiates parental expectations about how anxious children will respond in these situations, compared to parents of non-anxious children. Several research studies have highlighted the influence of parents in their anxious children's use of avoidance. Following family discussions about ambiguous vignettes, anxious children are more likely to report avoidant coping as their response (Barrett et al., 1996a). The researchers referred to this as the 'FEAR' effect (Family Enhancement of Avoidant and Aggressive responses). Similar results concerning the influence of parents on anxious children's behavioural plans are reported by Chorpita et al. (1996), who found that parental discussions were related to changes in how anxious children planned to respond to an ambiguous situation. However, a further study did not support these findings regarding parental reinforcement of avoidance (Cobham et al., 1999). In Cobham and colleagues' study, following a discussion with their parents, anxious children's ratings did *not* become

more negative as expected. The researchers suggested that their differing results regarding parental reinforcement of avoidance might have been due to parental misunderstanding of the children's task as part of treatment. This may have potentially influenced the children in their study to choose more proactive solutions.

Further examination of the parental discussion in Barrett et al.'s (1996a) study explored how parents reinforced child avoidance. This showed that parents of anxious children were more likely to reciprocate the child's proposals of avoidant solutions, and were less likely to encourage prosocial solutions (Dadds, Barrett, Rapee & Ryan, 1996). Specifically, parents of anxious children were less likely to grant and reward autonomy of thought and action, than parents of non-clinical children. They also influenced their child to be more cautious and avoid taking a social risk by modelling caution, providing information about risk, expressing doubt about the child's competency, and rewarding the child for avoidance by expressing agreement and nurturance when the child decided not to join with the other children. Thus, the way in which the parents of anxious children cognitively appraised the situation appeared to be different to parents of non-clinical children.

Given that parents of anxious children are more likely to be anxious themselves, it seems important to explore whether their cognitive appraisals of situations and their expectations about their child, stem from their own anxiety. Although only one study has accounted for parental anxiety, this found that where parents of anxious children were also identified as suffering from higher levels of trait anxiety themselves, they were more likely to expect their children to be more anxious and choose an avoidant solution, than non-anxious parents of anxious children (Cobham et al., 1999). This

suggests that parental expectations and cognitions may be more influenced by parental anxiety, rather than child anxiety. It also may suggest that parental anxiety places children at increased risk of having their anxiety maintained by the negative expectations their parents hold for them. This would not be surprising given that anxious adults have been found to have biases in their own cognitions, in particular a heightened perception of threat and a decreased estimation of coping ability (Bandura, 1977; Beck & Emery, 1985; Foa & McNally, 1996; Taylor & Rachman, 1994). Therefore, anxious adults have an exaggerated tendency to perceive, attend to, and respond to threat across a variety of hypothetical events and situations, with higher estimates of the consequences of danger in their environments (Beck & Emery, 1985; Butler & Mathews, 1983; 1987; Foa & McNally, 1996; MacLeod & Mathews, 1991; Mathews, Mogg, May & Eysenck, 1989; Mogg, Mathews, Eysenck & May, 1991).

Other cognitive biases due to parental anxiety may also be important, when more anxious parents interact with their children. Anxious adults have been found to have a lower perceived control over threat than non-anxious adults (Rapee, Craske, Brown & Barlow, 1996), with lower estimates of coping ability in threatening situations. Anxious adults also have a more external locus of control and stable attributions for negative situations (Bell-Dolan & Wessler, 1994), and therefore are more likely to believe that situations are outside of their control. Whether low external locus of control and low estimates of coping extend to parent beliefs about child behaviour has received less attention. However, it seems that parents who are high in external locus of control are more likely to have children high in anxiety (Ollendick, 1979b). It is not known whether this is a factor of their own anxiety, as parental anxiety was

not measured in this study. It is possible that children may internalise their parent perceptions of threat and coping (Barlow, 1988), and thus feel more anxious themselves.

Research has also assessed parental cognitions regarding their child's coping in anxiety provoking tasks. These studies have found that parents of anxious children expect their children to be less able to make themselves feel comfortable or cope unassisted, than mothers of non-anxious children (Kortlander et al., 1997; Levin, 1997). In addition, parents of anxious children are less confident in their children's abilities to perform task-related behaviour (Kortlander et al., 1997), especially if they are anxious themselves (Cobham et al., 1999). These lowered parental expectations for their child's coping are in accordance with their anxious children's self-reports, who also rate themselves as lower in coping ability than non-anxious control children (Kortlander et al., 1997). In terms of their actual performance, whilst anxious children's own expectations of their performance skills in ambiguous situations has not been found to differ from clinical and non-clinical controls (Cobham et al., 1999), independent observers have rated them as performing less well (Kortlander et al., 1997). These results coincide with other results showing that clinically anxious children rate themselves lower in coping in stressful situations (Chansky & Kendall, 1997). Not surprisingly, mothers of anxious children reported that they would be more likely to step in to help the child (Levin, 1997), highlighting that parental over-protective behaviour may be influenced by parental cognitions that their anxious child is less able to cope.

In summary, parent expectations of anxious children in potentially anxiety-provoking situations, differ from the expectations of parents of non-anxious children. In particular, they expect their children to be more threatened by the situation, and respond with more upset mood and avoidant behaviour. Parents of anxious children expect them to be less able to cope, and are less confident about their child's abilities to perform. The use of avoidance as a behavioural response seems to be related to parents' reinforcement of this as a coping strategy. Some research has suggested that parent expectations of their anxious children may be influenced by their own anxiety. In particular, anxious parents are likely to have increased expectations about threat and lowered expectations about coping, alongside a more external locus of control. These parental cognitions may impact of parent beliefs about their children, particularly in potentially anxiety-provoking or ambiguous situation. Comparisons to parents of children with other clinical disorders suggest that these cognitions are specific to parents of anxious children.

There are several shortcomings to the research on parental cognitions of anxious children. First, only one study has examined the cognitions of parents with younger children (Rubin & Mills, 1990), and this focused on child-referent attributions. The dearth of research on younger children is striking given that aversive parenting interactions are already established with anxious children at preschool age (LaFreniere & Dumas, 1992). In addition, the wide age ranges (usually 7-14 years old) included in the studies to date have not enabled an assessment of the role of child age. It is likely that parental cognitions vary depending on the developmental stage of their child (Dix et al., 1986). Parental expectations of their children may vary at different developmental stages. Second, with one exception (Rubin & Mills,

1990), the studies have been based on clinical samples of anxious children. Therefore it is not known whether parents have the same expectations of more anxious children in non-clinical samples. An examination of these issues in a community samples may further aid understanding of the role of parental cognitions in child anxiety. Third, only one study has included an examination of the role of parental anxiety. This is crucial given that parents of more anxious children are likely to be more anxious themselves, and anxious adults have cognitive processing biases, especially regarding threat and coping.

1.6 SUMMARY

Despite being one of the most common forms of psychological problems in childhood and adolescence, anxiety disorders are relatively poorly understood. Evidence has shown both parental anxiety and an anxious temperament in young children are both likely to be risk factors for the development of anxiety problems in children. Whilst this is partly explained by genetic factors, the familial context has also been highlighted as significant in both the development and maintenance of anxiety disorders in children. In particular a more controlling parenting style seems related to the development and maintenance of childhood anxiety. However, the reasons behind why parents with anxious children behave in this manner are relatively poorly understood.

Research from other areas of childhood difficulties has identified the importance of parental attributions and cognitions in maintaining child problems, through their influence on parental affect and behaviour. The few studies which have examined

parental cognitions about their anxious children, suggest that parents expect their anxious child to be more upset in potentially anxiety-provoking situations, more avoidant and less able to cope. These cognitions may be linked to increased parental anxiety. Anxious parents are likely to have a more external locus of control, an increased perception of threat and a decreased estimation of coping ability. It is not known whether these anxious cognitions extend to parents' expectations about their own children and about parenting in general. The few studies examining parental cognitions of anxious children have neglected community samples of parents of younger children, and have rarely measured parental anxiety alongside child anxiety and parental cognitions.

1.7 CURRENT STUDY

The aim of the current study was therefore to examine the role of parental cognitions in the relationship between parental anxiety and child anxiety. The study examined three main factors: parent anxiety, parental cognitions, and child anxiety. It was proposed that parental cognitions would be related to both parental anxiety and child anxiety, and that parental cognitions would act as a mediator in this relationship.

Since existing studies have focused on school-aged children, the relationship between parental cognitions and child anxiety was examined in younger children. Therefore, a community sample of preschool children and their parents was chosen. Aversive parenting interactions with anxious children are already established at preschool age (LaFreniere & Dumas, 1992), and thus an examination of parental cognitions at this age may be particularly important for the development of early

interventions. In addition, given that parents of anxious children are more likely to be anxious themselves, it was important to explore whether their cognitive appraisals of situations and their expectations about their child, are related to their own levels of anxiety. Furthermore, the inclusion of parent anxiety would help determine whether any relationship between parental cognitions and child anxiety was a factor of the parent's own anxiety. Only one study has previously included a measure of parental anxiety alongside measures of child anxiety and parental cognitions, but this focused on older children with anxiety disorders. Therefore this study included a measure of parental anxiety. In addition, a measure of parental depression was included, as this has been found to be co-morbid with adult anxiety problems (Brown & Barlow, 1992), and negative affect has been found to be associated with parental cognitions about their children (Lovejoy, Verda & Hays, 1997).

Early childhood poses extra problems for the assessment of anxiety, because self-report measures are not valid when used with children younger than middle childhood, given the difficulty in assessing child thoughts and feelings. Recently researchers have begun to develop measures of child anxiety suitable for preschool children, based on assessments of anxious behaviours rather than cognitions (e.g. Children's Behaviour Questionnaire: Eley, Bolton, O'Connor, Perrin, Smith & Plomin, in press). Other researchers have assessed related constructs that are hypothesised to be early risk factors for anxiety problems, in particular temperamental traits of infants identified as early signs of internalising problems. Of these, behavioural inhibition has received the most empirical support as a specific risk factor for later anxiety problems. Therefore, two measures were included - a measure of anxious behaviours together with a measure of behavioural inhibition.

Whilst previous studies have shown an association between parental anxiety and child anxiety, only a few have examined this relationship in preschool children using behavioural inhibition. Therefore this study proposed to replicate these results in children aged 3-5 years, using behavioural inhibition as well as a newer measure assessing anxious behaviours.

The assessment of anxiety in children is subject to the same difficulties as other areas of child psychological problems, with different informants providing inconsistent reports (Achenbach, McConaughty & Howell, 1987; Offord, Boyle & Racine, 1989). Cross-situational differences in child behaviour can also lead to differences in rating of child anxiety, as parents observe children at home compared to teachers who observe the child as one of many children in the school setting. However, agreement about internalising problems tends to be lower than that about externalising problems in children (Jensen, Traylor, Xenakis & Davis, 1988; Kolko & Kazdin, 1993; Edelbrock, Costello, Dulcan, Conover & Kalas, 1986). In research on older children, there has been debate about whether increased levels of child anxiety reported by parents reflect real differences, or distortions in parental perceptions of child behaviour. Several studies have found that maternal anxiety is associated with discrepancies between mothers' and teachers' reports of girls' (Briggs-Gowan, Carter & Schwab-Stone, 1996) and boys' (Jensen et al., 1988) internalising problems. A recent study found more general maternal symptoms to be significantly related to father-mother discrepancies in rating internalising behaviour (Treutler & Epkins, 2003). In contrast other studies have found no significant relation between parental anxiety and parent report of child anxiety, but a significant role of parental depression (Krain & Kendall, 2000). Whilst increased parental ratings of child

anxiety may be an artefact of situational differences, there is also evidence to suggest that there is a relationship between parental anxiety and child anxiety. Therefore, child anxiety measures were completed by the primary caregiver and also the nursery teacher of each child.

The current study incorporated three different measures of parental cognitions. Two measures were derived from the more extensively researched area of externalising problems in children. 'Parental locus of control' and 'perceived control of caregiving failure', have been found to be highly predictive of parental responses to child externalising behaviour. Given that anxious adults are likely to have a more external locus of control, and lower estimates of coping, these attributions may also be important in maintaining child anxiety problems. In addition, parental cognitions may be specific to potentially anxiety-provoking situations versus general parenting interactions and therefore a third measure assessing parental cognitions about their child in ambiguous situations was also included. This measure assessed 'parent expectation of child anxious mood and behaviour', and 'parent control of child anxious mood and behaviour'. Anxious adults have been found to have higher estimates of threat, and past research on parental cognitions about anxious children has also highlighted the importance of threat in potentially anxiety-provoking situations. Therefore, it was hypothesised that more anxious parents would expect their child to be more upset and avoidant in ambiguous situations. Additionally, given that more anxious adults have lower estimates of coping, it was hypothesised that anxious parents would expect to be less able to control their child's anxious mood and behaviour in these situations. The three measures of parental cognitions also assessed parent attributions about interactions with their own children and with

other children, in general and specific to an unsuccessful caregiving interaction. It was hypothesised that parental cognitions would be related to both parental anxiety and child anxiety. More specifically, it was hypothesised that parental cognitions would act as mediating variables in the relationship between parental anxiety and child anxiety.

1.8 HYPOTHESES

This study examined four hypotheses (see Figure 2):

Hypothesis 1: More anxious parents will have more anxious children

Hypothesis 2: Parental anxiety will be associated with parental cognitions

This hypothesis specifically addresses whether parents with higher levels of anxiety will have:

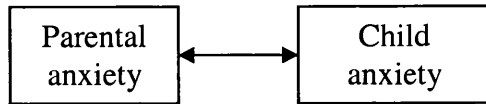
- (a) a higher external locus of control
- (b) a lower perceived control of caregiving failure
- (c) an expectation that their child would display more anxious *mood* (i.e. be more upset) in ambiguous situations
- (d) an expectation that their child would display more anxious *behaviour* (i.e. be more avoidant) in ambiguous situations
- (e) an expectation that they would be less able to control (i.e. change) their child's anxious mood in ambiguous situations
- (f) an expectation that they would be less able to control (i.e. change) their child's anxious behaviour in ambiguous situations

Hypothesis 3: Parental cognitions (as mentioned in Hypothesis 2) will be associated with increased child anxiety

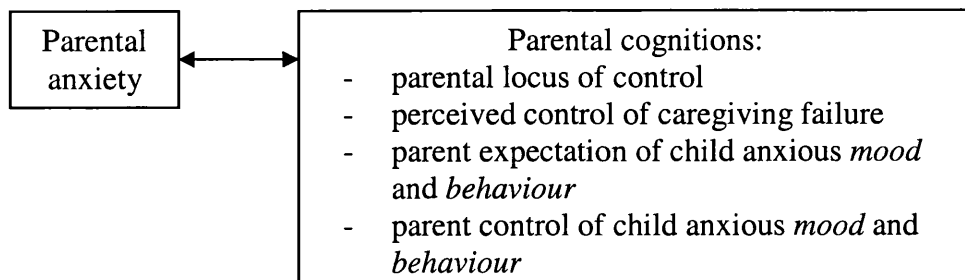
**Hypothesis 4: Parental cognitions will mediate the relationship between
parental anxiety and child anxiety**

Figure 2: Hypotheses for the current study

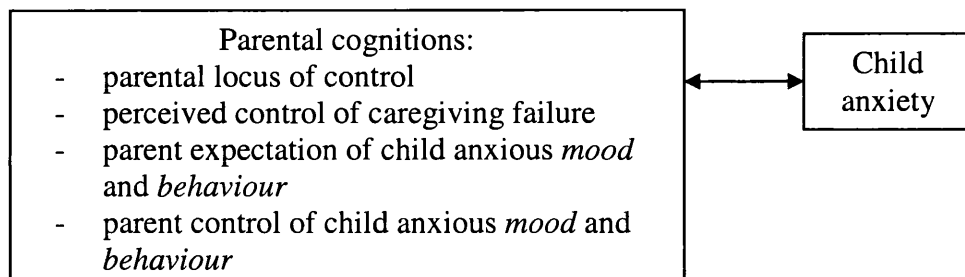
Hypothesis 1:



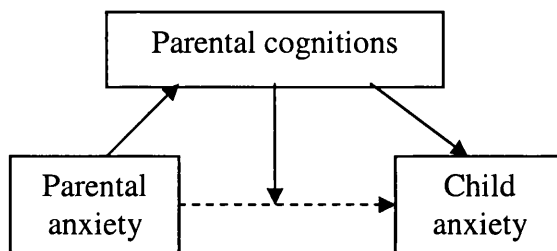
Hypothesis 2:



Hypothesis 3:



Hypothesis 4:



CHAPTER 2

METHOD

2.1 OVERVIEW

104 parents of children aged 3-5 years participated in the study. Parents completed questionnaires about their child's anxiety, their own anxiety, and their cognitions about parenting and child behaviour. Nursery teachers of each child also completed questionnaires about the child's anxiety.

2.2 PARTICIPANTS

Participants in the research were the primary caregiving parent and nursery teacher of children aged 3 to 5 years old. The research was aimed at a community sample of parents of nursery children in two regions: London and Kent. This involved four different boroughs: Camden, Islington, Bexley and Dartford. A community sample of parents was targeted, representative of children of preschool age. Therefore parents were recruited from two types of preschool provision: state nursery schools or early years centres, and private nurseries. Parents were excluded only if, based on teacher information, their child had a serious physical or learning disability, or if their command of the English language was not sufficient to be able to understand and complete the questionnaires.

2.3 RESPONSE RATES

Twenty nurseries were invited to participate in the research. Of these, all state nurseries agreed to take part, but four private nurseries declined to take part (20%). Reasons cited were moving premises, OFSTED inspections, inability to contact owner for permission and a concern about time constraints for parents. In total 14 nurseries (70%) agreed to take part, and of these 11 were used in the research. Participation from the remaining three nurseries was not pursued, as these were not needed once the sample size had been achieved.

Within the 11 nurseries a total of 272 parents were approached to take part in the study. 110 agreed to participate giving a 40% response rate. All nursery teachers agreed to take part in the study and completed questionnaires on children of all participant parents. However two parents with English as a second language were excluded, as they were not able to understand all of the questionnaires. A further four participants were excluded from data analyses due to incomplete questionnaires by parents or nursery teachers. This resulted in an eventual sample size of 104 participants, and 168 non-participants. Nursery teachers agreed to provide additional questionnaires on the non-participant group, regarding anxiety symptoms and behaviour inhibition. Of the 168 non-participants, teacher questionnaires were completed on 156 (93%). Nurseries also provided basic demographic details for most non-participant children and parents, including child age, child ethnicity, child parity, parent ethnicity and parents first language.

2.4 DEMOGRAPHIC INFORMATION

2.4.1 Parents

The 104 primary caregivers who were included in the study were asked to provide some basic demographic information about themselves and their child (see Table 3). A minimum of 101 participants supplied information on all variables. Of the 104 participating parents approximately 94% were mothers, and 25% were single parent families. Parental age ranged from 21 to 64.5 years, with a mean age of 33.44 years. Of 101 parents who gave their ethnicity, 67% were classified as 'White UK'. A further break down of parent ethnic background can be found in Appendix A. Regarding their occupations, 28% parents were classified as skilled (in accordance with Registrar General's Classification I and II) and 72% non-skilled.

2.4.2 Children

Demographical information was provided on a minimum of 103 children on all demographic variables (see Table 3). Children were aged from 3-4.67 years, with a mean age of 3.76 years. 46.2% were female, and 54.4% were first-born. In terms of ethnic background 66.3% children were from a 'White UK' ethnic background.

Table 3: Demographic information on participants

PARENT		N =	Number/Mean	(% or range)
Parent relationship - mothers		104	98	(94.2%)
Age (years)		103	Mean 33.44	(21-64.5)
Single parents		104	25	(25.3%)
Ethnicity - white UK		101	68	(67.3%)
Employment - none/student		102	48	(47.1%)
part-time			33	(32.4%)
full-time			21	(20.6%)
Occupation - skilled		99	28	(28.3%)
<hr/>				
CHILD				
Gender - female		104	48	(46.2%)
Age (years)		103	Mean 3.76	(3.00-4.67)
Parity - first-born		103	56	(54.4%)
Ethnicity - white UK		103	67	(66.3%)
<hr/>				
NURSERY				
Provision - State nurseries		104	52	(50%)
Borough: A		104	44	(42.3%)
B			18	(17.3%)
C			19	(18.3%)
D			23	(22.1%)
Nursery: 1		104	3	(2.8%)
2			6	(5.8%)
3			5	(4.8%)
4			5	(4.8%)
5			13	(12.5%)
6			5	(4.8%)
7			11	(10.6%)
8			27	(26%)
9			12	(11.5%)
10			8	(7.7%)
11			9	(8.7%)

2.4.3 Comparison to non-participants

Of the 168 children whose parents declined to take part in the study, data was collected from nurseries on several demographic variables for non-participating parents and children to allow comparison to the participant group. This was based on nursery records and therefore some data was missing, particularly that concerning parents. However data was collected on a minimum of 142 children and 121 parents from the non-participant group.

T-tests and chi-squares were conducted to test for significant differences in demographics between participants and non-participants (see Table 4). This found that there were no significant differences between the participant and non-participant group in terms of child age, gender or parity. However, the two groups differed significantly on child ethnic background ($\chi^2 (1) = 7.67, p=.006$) and parent ethnic background ($\chi^2 (1) = 4.99, p=.03$), with more White UK children and parents in the participants group. This was not surprising given that the study used nurseries with a wide ethnic and cultural background. Due to the high percentage of non-English speaking parents nurseries had requested that parents determine themselves whether their own English was sufficient to complete questionnaires. Several of the questionnaires involved more complex English and non-English speaking parents may well have found this too difficult. Data collected on the non-participant parents suggested that only 31% spoke English as a second language. This data was not collected for the participants but it is possible that a higher percentage spoke English as a first language.

In addition, there was a significant difference between the two groups in the number of parents who were working ($\chi^2 (3) = 35.09, p < 0.001$), with less parents working in the non-participant group. Data on the nurseries also showed that there were significant differences between the two groups on the number of parents from each group from state or private nursery provision ($\chi^2 (1) = 31.72, p < 0.001$). Non-participants were more likely to attend state nurseries, with 84% of children attending state nurseries, compared to only 50% in the in the participant group. Furthermore, there were significant differences between the two groups in terms of the number of which borough the nursery was in ($\chi^2 (10) = 46.19, p < 0.001$). This was expected given that different types of nursery provision were approached in different boroughs (see Table 5). In Borough A there were no state nurseries and there was only one in Borough C, and therefore in these boroughs primarily private nursery provision had to be used. To compensate for this only state nurseries were approached in Boroughs B and D.

In summary, the participants were not fully representative of the sample approached to take part in the study, as they were more likely to be working parents from a White UK, with children attending private nurseries. Whilst this is consistent with research on community samples on the type of responders to questionnaire studies, it also seemed that this difference might be accounted for by the large number of non-English speaking parents in the non-participant group.

Table 4: Comparison of participants and non-participants on demographic information

	Participants		N =	Non-participants		N=	Sig.
Child gender - female	48	(46.2%)	104	74	(46.8%)	158	
Child age (years)	Mean 3.76		103	Mean 3.82		150	
Child parity - first born	56	(54.4%)	103	91	(64.1%)	142	
Child ethnicity - white UK	67	(65%)	103	78	(49.4%)	158	**
Parent ethnicity - white UK	68	(67.3%)	101	85	(53.8%)	142	*
Parent first language - English	--	--	---	108	(69.2%)	156	-
Parent working	54	(52.9%)	102	51	(42.1%)	121	**
Nursery provision - state	52	(50%)	104	137	(83.5%)	164	**
Nursery borough - A	44	(42.3%)	104	24	(14.6%)	164	**
B	18	(17.3%)		37	(22.6%)		
C	19	(18.3%)		38	(23.2%)		
D	23	(22.1%)		65	(39.6%)		
Nursery - 1	3	(2.8%)	104	0	(0%)	164	^a
2	6	(5.8%)		17	(10.4%)		
3	5	(4.8%)		3	(1.8%)		
4	5	(4.8%)		34	(20.7%)		
5	13	(12.5%)		20	(12.2%)		
6	5	(4.8%)		17	(10.4%)		
7	11	(10.6%)		35	(21.3%)		
8	27	(26%)		13	(7.9%)		
9	12	(11.5%)		14	(8.5%)		
10	8	(7.7%)		2	(1.2%)		
11	9	(8.7%)		9	(5.5%)		

^a = No chi square computed as 22% cells have expected count <5

Table 5: Number of children (n=272) at private or state nurseries by borough of school

Borough of nursery	Type of nursery provision		Total
	State	Private	
A	0	68	68
B	56	0	56
C	47	11	58
D	90	0	90
Total	193	79	272

Table 6: Parent questionnaires - construct assessed

Construct	Parent Questionnaires	Teacher Questionnaires
1) Child anxiety	Children's Behaviour Questionnaire	Children's Behaviour Questionnaire
	Behaviour Inhibition Questionnaire	Behaviour Inhibition Questionnaire
2) Parent anxiety and depression	State Trait Anxiety Inventory	-
	Beck Depression Inventory	-
3) Parental cognitions	Parenting Locus of Control Scale	-
	Parent Attribution Test	-
	Vignettes	-

Table 7: Internal consistency (reliability analysis) for Preschool Ambiguous Scenarios Questionnaire (n=104)

Item	Alpha if item deleted - range	Alpha
Parent expectation of child anxious mood	.67 - .73	.72
Parent expectation of child anxious behaviour	.66 - .72	.71
Parent control of child anxious mood	.89 - .90	.90
Parent control of child anxious behaviour	.90 - .91	.91

2.5 ETHICAL CONSIDERATIONS

This proposal was reviewed by the Joint UCL/UCLH Committee on the Ethics of Human Research. A copy of the approval letter can be found in Appendix B.

2.6 PROCEDURE

Permission was sought from the Head of Education in each of the four boroughs to approach nurseries. Letters were sent to nurseries inviting them to take part in the research. Once nurseries had agreed to take part, parents of children aged 3-5 years were sent an invitation letter from the nursery about the research. The author attended nurseries at times when children were being dropped off or collected by their parents, and handed out an information sheet and consent form to parents (see Appendix C and D) along with the questionnaire pack. Two nurseries preferred to send the questionnaires out themselves. Questionnaires were taken home by parents to complete and were returned in envelopes into a sealed 'research postbox' emptied by the author. Parents were invited to contact the researcher if they had any queries about the questionnaires.

The nursery teacher of each child (either a nursery teacher, nursery nurse or nursery assistant) was then given the two questionnaires on child anxiety for all children whose parents had completed questionnaires. In addition, they were asked to complete questionnaires and basic demographic information on non-participants children. This allowed a comparison of the children of the participants and non-participants, with regards to the level of the child's anxiety and basic demographics.

Nurseries were given vouchers for toys and equipment based on the number of questionnaires returned, in recompense for the parents' and teachers' time taken to complete the questionnaires.

2.7 MEASURES

Parents completed seven questionnaires alongside a short demographic questionnaire, which altogether took approximately 20-30 minutes to complete.

Nursery workers completed two questionnaires on child anxiety, which took approximately 2-3 minutes per child. Parent questionnaires assessed three main areas (see Table 6): 1) their child's anxiety; 2) their own anxiety and depression; 3) their cognitions about child behaviour.

2.7.1 Demographic information

Parents were asked to complete some basic demographic information details concerning themselves and their child. This included parent age, ethnicity, occupation, working hours, whether they were a mother or father, and whether they were a single parent family.

2.7.2 Child anxiety

Few measures of child anxiety have been standardised on preschool children.

Additionally, of those that are suitable for children of this age, most measure anxiety within a range of internalising problems. In contrast, current measures of anxiety used were selected as they specifically assessed anxiety in preschool children:

2.7.2 a) *Children's Behaviour Questionnaire (Eley et al., in press)*

The Children's Behaviour Questionnaire (CBQ – see Appendix E) is a 16-item measure of anxiety related behaviours in preschool children, containing items selected from existing reliable and valid measures of temperament and psychopathology (Achenbach, 1991; Behar & Stringfield, 1974; Berg, Rapoport & Flament, 1986; Elander & Rutter, 1996; Goodman & Scott, 1999). The CBQ is one of the few questionnaires that assesses anxious behaviours in preschool children. There are five sub-scales: a) General distress (e.g. Many worries, often seems worried); b) Obsessive-compulsive behaviours (e.g. Tends to check that some things are done exactly right); c) Shy/inhibited (e.g. Takes a long time to warm to strangers); d) Separation anxiety (e.g. Is often extremely upset or distressed when parent leaves); and e) Fear (e.g. Is extremely afraid of day to day things such as the dark, water, animals, blood). Participants rate children on these items using a 3-point response scale ('never', 'sometimes', 'often'). The instructions were modified slightly for ease of understanding in this study, including the rating of the scale. Participants in this study were asked to indicate whether the items were true of their child ('not true', 'sometimes true', 'certainly true'). One item concerning sleep was dropped from the teacher version, as it was not relevant to most nurseries.

Regarding the psychometric qualities of this questionnaire, it has been used in a large longitudinal twin study of child development: the Twins Early Development Study (Dale, Simonoff, Bishop, Eley, Oliver et al., 1998). The study invited families of all twins born in England and Wales in 1994, 1995 and 1996 to take part, and data on over 9100 children is available at age 18 months, and at 2, 3, and 4 years. Reliability coefficients from this study show that the scales have good internal consistency:

General Distress .58, Obsessive compulsive behaviours .59, Shy/Inhibited .64, Separation anxiety.41, Fear .59.

2.7.2 b) Parental Inhibition Scale (Asendorpf, 1990, 1993)

The Parental Inhibition Scale (BI) (see Appendix F) is a measure of child behavioural inhibition, thought to be a measure of early anxious temperament. It consists of eight questions completed by parents about child behaviour towards unknown adults and children, particularly withdrawal and inhibited behaviour. Two subscales can be obtained, inhibition to peer strangers (e.g. My child is shy towards unknown children) and inhibition to adult strangers (e.g. When my child meets unknown adults s/he needs a long time to warm up), as well as a total behavioural inhibition score. The items are rated on a 7-point scale from 'never' to 'always'. The original wording was modified slightly on two items for ease of understanding ('inhibited' changed to 'withdrawn').

With regard to the psychometric properties of the BI, the internal consistency of the measure has been reported to be very high (Cronbach's alpha = .93-.95) (Asendorpf, 1990). It correlates with significant observational measures of child inhibition, such as the latency of the child's first utterance towards stranger ($r = .64, p < 0.001$) (Asendorpf, 1990).

2.7.3 Parental anxiety and depression

2.7.3 a) State-Trait Anxiety Inventory for Adults (STAI-AD) – Spielberger et al. (1983)

The STAI-AD has been extensively used in research and clinical practice to measure adult anxiety, for both clinical samples and screening in community samples. It consists of two self-report scales for measuring state and trait anxiety. In this study only the Trait scale (STAI Form Y-2) and not the State scale was used, to measure a more stable measure of anxiety rather than situational anxious reactions. Trait anxiety is defined as relatively stable individual difference in anxiety-proneness (Spielberger et al, 1983). The questionnaire consists of 20 statements such as “I worry too much over something that really doesn’t matter”, and ”I feel nervous and restless”. Respondents indicate how they generally feel by rating the frequency of their feelings of anxiety using a four-point scale (not at all - very much so). A total score is obtained of between 20-80. Regarding psychometric qualities, the trait anxiety score has good test-retest reliability (ranging from .65 to .86) and an internal consistency of .90 (Spielberger et al., 1983). It also correlates relatively highly (.85 to .73) with other trait measures of anxiety (Spielberger et al., 1983).

2.7.3 b) Beck Depression Inventory (BDI) - Beck, Epstein, Brown & Steer (1988)

The BDI is a questionnaire designed to measure the severity of depression in adults. It is a 21-item self-report questionnaire of how the respondent has felt over the last week. Each item (as a symptom of depression) is rated on a four-point scale (0-3) of increasing severity of depression. A total score is obtained by adding the score for each item, with a maximum of 63.

The BDI is one of the most widely used measures of depression severity (Gould, 1982; Steer, Beck & Garrison, 1985). It has been used with normal as well as clinical populations (Beck, Steer & Garbin, 1988), and thus is particularly relevant for this community population. It has good test-retest reliability with correlations of greater than .60 (Beck, et al., 1988). It also correlates well with other measures of depression ($r=.60$) and has reasonable construct, content and discriminant validity (see Beck et al., 1988, for a review). Internal consistency for non-psychiatric populations has been reported to range between .73-.92 (Beck et al., 1988).

2.7.4 Parental cognitions

Three measures of parental cognitions were used:

2.7.4a) Parental Locus of Control Scale (PLOC) – Campis et al., (1986)

The PLOC is a 47-item questionnaire assessing parental beliefs about the control of children's behaviour (see Appendix G). It assesses parents' perception of locus of control as it relates to the parenting role and parent-child interactions. It consists of 47 statements about parenting children. Five factors are then obtained: a) parental efficacy (e.g. What I do has little effect on my child's behaviour); b) parental responsibility (e.g. Children's behaviour problems are often due to mistakes their parents made); c) child control of parents' life (e.g. My child influences the number of friends I have); d) parental belief in fate/chance (e.g. Being a good parent often depends on being lucky enough to have a good child); and e) parental control of child's behaviour (e.g. I feel in control when it comes to my child). Respondents are asked to indicate their agreement with using a five-point scale (strongly disagree - strongly agree). A total score reflects parental locus of control, with higher scores

indicating a more external locus of control, where parents believe they have little impact on the child's behaviour.

Sufficient internal consistency reliability coefficients have been reported for the five subscales ($r = .62$ to $.79$) and for the total scale ($r=.92$) (Campis et al., 1986). Test-reliability of the PLOC is also adequate (Roberts et al., 1992). Evidence of construct and discriminant validity has been published (Campis et al., 1986), showing that the PLOC is a reliable instrument which discriminates between theoretically different groups, namely between parents with parenting problems from comparison groups. Further support for the validity of the construct of parental locus of control derives from data showing that predict levels of aversive child behaviour in clinic-referred families (Roberts et al., 1992). PLOC scores correlate with measures of general self-efficacy and attitudes about parenting (Campis et al., 1986) and with measures of parenting stress and parent satisfaction (Mouton & Tuma, 1988).

2.7.4 b) Parent Attribution Test (PAT) - Bugental & Shennum (1984); Bugental, Blue & Cruzcosa (1989)

The PAT (see Appendix H) assesses parents' perceived causes of caregiving success and failure, through looking at the perceived balance of control between the parent and children. Two hypothetical vignettes about parenting a neighbour's child are given; one describes a successful interaction and the other an unsuccessful interaction between the respondent and child. The respondent is asked to rate on a 7 point scale how important a list of factors are in why the interaction was successful or unsuccessful, for example 'How hungry the child was' and 'Whether you used the wrong approach for the child'. Causes are seen as controllable by the adult or child

and this gives two scores: adult control over failure and child control over failure. Balance of control is determined by subtracting child control of failure from adult control of failure, leading to a total score of perceived control of caregiving failure (PCF). High PCF scores reflect a balance of control that favours the adult.

Scores on the PAT are relatively stable and internal consistencies for the four factors range from marginal to acceptable (Bugental, 1993). The validity of the PAT has been examined, particularly its ability to predict differential reactivity to caregiving events of an ambiguous/challenging versus easy nature. Mothers who believe they have low control over caregiving outcomes are more likely to show negative response patterns to children who appear somewhat unresponsive to them (Bugental & Shennum, 1984). Abusive mothers have been found to be more likely to show a pattern of low perceived control over negative caregiving outcomes. Scores on the PAT predict affect, physiological reactions, and coercive adult behaviour across a variety of tasks and settings for both parental and non-parental women (Bugental et al., 1993; Bugental et al., 1989; Bugental et al., 1990), such that adults with low perceived control show increased reactivity to difficult child behaviours.

Scores on the PAT are not related to depression, mother age or education, self-esteem or affectivity. However low PCF mothers are more likely to report higher levels of stress (Bugental et al., 1993). Scores on the PAT, although less likely to be influenced by response style and distress, appear to reflect a different dimension of efficacy than that assessed by other self-report measures (Lovejoy et al., 1997).

There is a weak convergent validity between the PAT and the afore-mentioned PLOC (Lovejoy et al., 1997). The PLOC focuses on control within the parent-child relationship, whereas the PAT is a more general measure of adult causal beliefs about interactions with children. Hence both measures were included. The instructions of the PAT were modified slightly for ease of understanding.

2.7.4 c) Preschool Ambiguous Scenarios Questionnaire (PASQ)

A questionnaire to assess parental cognitions about potentially anxiety provoking situations for their children was developed for this study. It was based on Barrett's ambiguous situations questionnaire for children aged 7-14 (Barrett et al., 1996a). In Rapee's questionnaire children were given 12 ambiguous situations and were asked to choose from two forced choice responses of whether they would be more likely to interpret the situation in a threatening or non-threatening way.

It was aimed to develop a similar questionnaire for parents of children aged 3-5 years. In the development of this new measure, 21 potentially anxiety-provoking vignettes were compiled. Researchers (Campbell & Rapee, 1993; Lovibond & Rapee, 1993) have indicated that children seem to represent threatening outcomes in a similar way to adults: physical threat (physical harm) and social threat (negative evaluation). Ten vignettes were socially threatening situations (e.g. *"You take your child to a children's party and there is a clown there, who asks your child to come up from the audience and help them"*) and eleven were physically threatening situations (e.g. *"You are walking in the park and a big dog comes up to your child"*). These vignettes were based on developmental fears (Ollendick et al., 2002) and on author experience of situations that children might find frightening at age 3-5 years. In the

original piloted questionnaire (see Appendix I), each vignette aimed to assess parental perception of:

- i) how upset their child would be ('not at all upset' to 'extremely upset');
- ii) what their child would be more likely to do (from an anxious/avoidant response at one end of the scale to a non-anxious/avoidant response);
(e.g. for dog vignette above "*want to stroke the dog*" vs. "*freeze*")
- iii) how likely it was that they could change the child's mood if they were upset by the situation ('not at all likely' to 'very likely');
- iv) if their child did behave anxiously/avoidantly, whether they would be able to change the child's behaviour ('not at all likely' to 'very likely').

The 21 proposed vignettes were piloted on six parents of varying social class and ethnic background, and six clinical child psychologists. In the pilot questionnaire, for each vignette parents and clinical child psychologists were asked to rate three questions on a 3-point scale (no, somewhat, yes). The three questions asked in the pilot were therefore:

- i) Is the situation relevant to a child aged 3-5 years?
- ii) Would the situation make some children anxious?
- iii) Is [avoidant response] versus [non-avoidant response] a response that an anxious child might make?

It was aimed to retain approximately 12 of the vignettes and this was carried out by examination of frequencies, means and ranks. For vignettes to be retained it was essential that they were i) age relevant, and ii) anxiety-provoking. Item analysis and general feedback about the vignettes revealed that the subjects of some vignettes

were not culturally relevant to the target population (for example vignettes involving skiing), and also scored poorly, and so these were removed. The retained vignettes were identified using mean rankings and frequencies on ratings of relevance and whether the situation was anxiety provoking. This led to 12 vignettes being retained. A further two new vignettes were added, which had been suggested by many of the parents as alternative possible anxiety-provoking situations, concerning a child's first day at nursery and going to hospital to visit an ill relative. Other suggestions by parents and clinical child psychologists about the wording of vignettes were also incorporated, as well as recommendations from the ethics committee about the response scale of the first question about how upset the parent thought their child would be, replacing 'not at all' with 'delighted'.

The new version of the questionnaire containing 14 vignettes was then piloted again on ten parents. As in the initial pilot, parents were asked three questions about each vignette i) its relevance for a child 3-4 years, ii) whether it was anxiety provoking, and iii) whether the anxious/avoidant response given was suitable. Responses were analysed examining the frequencies and means of the scorings primarily on the first two questions. There were no major concerns about any of the vignettes and thus it was decided to retain all of the vignettes, although some minor wording changes were made. The final version of the vignette questionnaire is provided in Appendix J. Internal consistency (or reliability analyses) for the four subscales revealed that alpha reliability coefficients ranged from .67 to .91 (see Table 7). Full details of the reliability analyses can be seen in Appendix K.

In summary, the Preschool Ambiguous Scenarios Questionnaire (PASQ) produced four subscale scores: parent expectation of child anxious mood (Pexpm), parent expectation of child anxious behaviour (Pexpb), parent control of child anxious mood (Pconm), and parent control of child anxious behaviour (Pconb).

relationship between parental and child anxiety. Additional analyses were conducted to explore whether parental anxiety and child anxiety had independent associations with parental cognitions.

In general, group effects were examined using t-tests or ANOVAs. Relational analyses were conducted using Pearson correlations for uni-variate analyses, and hierarchical multiple regressions for multi-variate analyses. Analysis of the mediator role of parental cognitions was performed using a series of hierarchical multiple regressions, as recommended by Baron and Kenny (1986). Test 1 examines whether the independent variable (parental anxiety) has some effect on the dependent variable (child anxiety). Test 2 examines whether the independent variable (parental anxiety) has some effect on the proposed mediator variable (parental cognitions). Tests 3 examines whether the dependent variable (child anxiety) co-varies with the mediator (parental cognitions) even after controlling for the original independent variable (parental anxiety). Test 4 looks at whether the relation between the independent variable (parental anxiety) and the dependent variable (child anxiety) either disappears or substantially diminishes when the mediator (parental cognitions) is statistically controlled.

3.2 CHILD ANXIETY

3.2.1 Comparison of participant and non-participant child anxiety

In order to examine the representativeness of the current sample to the population targeted with regard to child anxiety, t-tests examining teacher ratings of child anxiety were conducted to compare participant children versus non-participant children.

The results showed that there were significant differences between the two groups of children on teacher ratings of children's anxious behaviours 'CBQt' ($t(257)=3.22$, $p=.001$), and on teacher ratings of children's behavioural inhibition 'BI' ($t(255)=3.67$, $p<.001$). Participant children were rated by nursery teachers as showing less anxious symptoms and less behavioural inhibition than non-participants (see mean scores Table 8). Therefore it is possible that the study sample has an under-representation of children considered as more anxious by their nursery teachers. Comparison to existing data on these measures (see Appendix L) showed that participants were similar to previous samples on the CBQ (Eley et al., in press), but scored slightly lower on the BI (Asendorpf, 1990).

In summary, participant children were less anxious than non-participant children, although they were fairly similar to community samples used in previous studies of preschool children.

3.2.2 Examination of parent and teacher ratings on child anxiety for composite variables

To examine whether composite scores of anxiety could be created using the two measures of child anxiety ('inhibition' and 'child anxious behaviours') by both raters (parents and teachers), the total scores for the four questionnaires assessing child anxiety were correlated.

The results showed that the two parent questionnaires (CBQp and BIp) were significantly correlated ($r=.43$, $p<.001$) as were the two teacher questionnaires

(CBQt and BI_t) ($r=.50, p<.001$, see Table 9). Those children who are rated more inhibited by parents are more likely to be rated by parents as displaying more anxious behaviours. The same was true for teachers' ratings. Parent and nursery teacher ratings of children's anxious behaviours (CBQ_p and CBQ_t) were not significantly related ($r=.01, p=.92$), thus these ratings could not be combined. Parent and nursery teacher ratings of children's inhibition (BI_p and BI_t) were significantly correlated ($r=.36, p<.001$), which suggests that children rated as more inhibited by their parents are also more likely to be rated as more inhibited by their nursery teachers (although not necessarily the same children). However, this was only a low-moderate correlation. Furthermore, parent ratings of anxious child behaviours were not correlated with teacher ratings of inhibition, nor were teacher ratings of anxious behaviours related to parent ratings of inhibition. These results suggested that inhibition and child anxious behaviours were measuring different constructs and it therefore the decision was made to keep all ratings separate.

In summary, the four ratings did not correlate significantly enough to create composite measures of child anxiety.

3.2.3 Relationship between child anxiety and demographic data

To establish potential confounding variables associated with child anxiety (the dependent variable), a number of relational analyses were conducted with demographic data and the four measures of child anxiety.

Correlational analyses with continuous demographic variables showed that child age was negatively correlated with parent rating of inhibition (BI_p: $r=-.21, p=.04$),

teacher rating of inhibition (BIIt: $r=-.33$, $p=0.001$), and teacher rating of child anxious behaviours (CBQt: $r=-.28$, $p=.004$) (see Table 10). Younger children were rated as more inhibited by both parents and teachers, and also as more anxiously behaved by teachers. In addition, parent age was found to be negatively correlated with parent rating of child anxious behaviours (CBQp: $r=-.24$, $p=.01$), with younger parents rating their children as more anxious. In order to establish whether these two findings were related (i.e. that younger parents had younger children), parent age and child age were correlated. However they were not found to be significantly related ($r=.06$, $p=.53$).

T-tests with categorical demographic data (see Table 11) showed that four variables were related to at least one measure of child anxiety, and therefore post-hoc examination of the mean scores were conducted (see Table 12). Child ethnicity was found to be significantly related to parent ratings of child anxious behaviours (CBQp: $t(99)=-2.42$, $p=.02$), with White UK children rated as less anxious ($\bar{x}=2.54$, $sd=.81$) than non-White UK children ($\bar{x}=2.97$, $sd=.89$). Parent ethnicity was also related to parent ratings of child anxious behaviours (CBQp: $t(99)=-2.02$, $p=.05$), with White UK parents rating their children as less anxious ($\bar{x}=2.57$, $sd=.81$) than parents from other ethnic backgrounds ($\bar{x}=2.93$, $sd=.91$). The fact that parent ethnicity had the same effect as child ethnicity was not surprising given that child ethnicity and parent ethnicity are likely to be highly related. Child anxiety also differed significantly for the parent rating of child anxious behaviours depending on the parent relationship to the child (CBQp: $t(102)=3.01$, $p=.003$), with fathers rating their children as more anxious ($\bar{x}=3.69$, $sd=.95$) than mothers ($\bar{x}=2.63$, $sd=.82$). Whether parents were single parents was also significantly related to child anxiety,

but this time for parent and teacher rating of inhibition only, (BIp: $t(97)=-2.14$, $p=.04$; BIt: $t(97)=-2.38$, $p=.02$). Children living with single parents were rated by parents and teachers as less inhibited (BIp: $\bar{x}=2.37$, $sd=1.18$; BIt: $\bar{x}=1.71$, $sd=1.42$) than children living with both parents (BIp: $\bar{x}=2.91$, $sd=1.06$, BIt: $\bar{x}=2.44$, $sd=1.30$).

ANOVA analyses showed that two further demographic variables were significantly related to parent rating of child anxious behaviours – parent employment ($F(2,99)=3.52$, $p=.03$) and nursery ($F(10, 93)=3.04$, $p=.002$) (see Table 13). Post-hoc examination of CBQp mean scores (see Table 12) showed that parents who were not working (or were students) rated their children as more anxious ($\bar{x}=2.90$, $sd=.97$) than part-time working parents ($\bar{x}=2.47$, $sd=.75$), and both non-working and part-time parents were more anxious than full-time parents ($\bar{x}=2.45$, $sd=.57$). In addition, there were significant differences in parent ratings of child anxious behaviours across the different nurseries. Parents from one nursery (Nursery 2) rated their children as significantly different from six of the ten other nurseries.

In summary, teacher ratings of child anxious behaviours were related to only one demographic variable – child age. Parent and teacher ratings of inhibition were both related to child age and single parenthood. But parent ratings of child anxious behaviours were related to six demographic variables: child ethnicity, parent ethnicity, parent relationship, parent employment, parent age and nursery.

Table 8: Teacher ratings of child anxious behaviours (CBQt) and inhibition (BIIt) – participant versus non-participant children

	Participants		Non-participants		Sig
	Mean (sd)	N	Mean (sd)	N	
CBQt	1.94 (.95)	104	2.36 (1.05)	155	**
BIIt	2.27 (1.38)	104	2.94 (1.50)	155	**

** p< .01

Table 9: Correlations of child anxious behaviour and inhibition as rated by parents and teachers

	CBQp	CBQt	BIp	BIIt
	r	r	r	r
CBQp ^a	-	.01	.43**	.18
CBQt ^b		-	.15	.50**
BIp ^c			-	.36**
BIIt ^d				-

** p< .01

^a Parent rating of child anxious behaviours; ^b Teacher rating of child anxious behaviours; ^c Parent rating of child behaviour inhibition; ^d Teacher rating of child behaviour inhibition

Table 10: Correlation of demographic variables to child anxiety variables

	CBQp	CBQt	BIp	BIIt
	r	r	r	r
Child age	-.01	-.28**	-.21*	-.33**
Parent age	-.24*	-.04	-.01	-.09

*p<.05, **p<.01

Table 11: T-tests examining the relationship of demographic variables to child anxiety

	CBQp	CBQt	BIp	BIIt	(df)
	t	t	t	t	
Child gender (male, female)	.05	.02	-.55	-1.48	(102)
Child parity (1 st born, other)	.07	-.20	-1.60	-1.18	(101)
Child ethnicity (White UK, Other)	-2.42*	.95	-.24	.04	(99)
Parent ethnicity (White UK, Other)	-2.02*	.19	-.57	-.87	(99)
Parent relationship (mother, father)	3.02**	-1.43	-.22	-.92	(102)
Single parenthood (single, both parents)	.27	-.65	-2.14*	-2.38*	(97)
Parent occupation (unskilled, skilled)	1.50	-.32	.61	1.39	(97)
Nursery provision (state, private)	1.61	-.13	-.51	-.85	(102)

*p<.05, **p<.01

Table 12: Mean (sd) child anxiety scores for significant demographic variables

		CBQp	CBQt	BIp	BIt
Child ethnicity:	White UK	2.55 (.81)	-	-	-
	Other	2.97 (.89)			
Parent ethnicity:	White UK	2.57 (.81)	-	-	-
	Other	2.93 (.91)			
Parent relationship:	Father	3.69 (.95)	-	-	-
	Mother	2.63 (.82)			
Single parent:	Yes	-	-	2.38 (1.18)	1.71 (1.42)
	No			2.91(1.06)	2.44 (1.30)
Parent employment:	None/student	2.90 (.97)	-	-	-
	Part-time	2.47 (.75)			
	Full-time	.245 (.57)			
Nursery:	1	2.02 (.62)	-	-	-
	2	4.10 (.60)			
	3	2.24 (.68)			
	4	2.59 (1.19)			
	5	2.93 (.75)			
	6	2.90 (.72)			
	7	2.77 (.87)			
	8	2.70 (.70)			
	9	2.21 (.82)			
	10	2.38 (.63)			
	11	2.64 (1.02)			

Table 13: ANOVA examining the relationship of demographic variables to child anxiety

	CBQp F	CBQt F	BIp F	BIt F	(df)
Parent employment (none, part time, full time)	3.52*	.40	.27	1.41	(2,99)
Nursery (11 nurseries)	3.03**	.65	1.00	1.83	(10,93)
Nursery borough (4 boroughs)	.84	.35	.22	.03	(3,100)

*p<.05, **p<.01

3.3 PARENTAL COGNITIONS

3.3.1 Relationship of parental cognitions to demographic variables

The three measures of parental cognitions produced six variables: parental locus of control (PLOC), perceived control of caregiving failure (PCF), parent expectation of child anxious mood (Pexpm), parent expectation of child behaviour (Pexpb), parent control of child anxious mood (Pconm), and parent control of child anxious behaviour (Pconb). It was important to know what confounding variables might be associated with these cognitions, so that they could be accounted for in later regressions where parental cognitions were used as the dependent variable.

Therefore, correlational analyses were conducted with interval demographic data (see Table 14), and t-tests (see Table 15) and ANOVAs (see Table 16) with categorical demographic data. Post-hoc examination of the means is shown in Table 17.

Parental locus of control was found to be significantly related to four demographic variables. The results suggested that parents with a more external locus of control were more likely to be fathers ($t(102)=2.21, p=.03$), to be from two-parent families ($t(30.45)=2.15, p=.04$), and to be from state nurseries ($t(102)=3.28, p=.001$).

Furthermore, parental locus of control was related to the borough of the nursery ($F(3,100)=4.69, p=.004$), with parents in Borough 1 having a more external locus of control than parents in Borough 2.

Parent expectation of child anxious mood and parent expectation of child anxious behaviour, were both related to single parenthood. Parents from two-parent families

expected their child to be more upset and avoidant in ambiguous scenarios ($P_{expm}: t(97)=-2.10, p=.04$; $P_{expb}: t(101)=-2.79, p=.006$). Parent expectation of child anxious mood was also related to parent employment ($t(2,99)=3.12, p=.05$), although post hoc examination of the means revealed no significant differences. Three of the parental cognition variables were not related to any demographic variables: parental control of caregiving failure, parent control child anxious mood, and parent control child anxious behaviour.

In summary, three of the parental cognition variables were not significantly related to any demographic variables (perceived control of caregiving failure, parent control of child anxious mood, parent control of child anxious behaviour). However, parent expectation of control of child anxious mood and behaviour were both related to single parenthood. Furthermore, parental locus of control was related to single parenthood, parent relationship, nursery provision, and nursery borough.

3.3.2 Parental cognitions – relationship to each other

In the final initial analyses, parental cognitions from the three scales were correlated to examine whether they were related to each other (see Table 18), in order to assess the convergent validity of the measures.

Table 14: Correlations of parental cognition variables with demographic variables

	PLOC ^a	PCF ^b	Pexpm ^c	Pexpb ^d	Pconm ^e	Pconb ^f
	r	r	r	r	r	r
Child age	.07	.00	.07	-.03	.01	-.00
Parent age	-.14	-.27	.11	.29	.05	.04

^a PLOC = Parental Locus of Control Scale; ^b PCF = Parent control of caregiving failure; ^c Pexpm = Parent expectation of child anxious mood ; ^d Pexpb = Parent expectation of child anxious behaviour; ^e Pconm = Parent control child anxious mood; ^f Pconb = Parent control child anxious behaviour

Table 15: T-tests examining the relationship between parental cognition variables and demographic variables

	PLOC	PCF	Pexpm	Pexpb	Pconm	Pconb	(df)
	t	t	t	t	t	t	
Child gender (male, female)	.71	.41	-.61	-.32	.84	-.35	(102)
Child parity (1 st born, other)	.50	.59	-.13	-.22	1.10	-.44	(101)
Child ethnicity (White UK, Other)	-1.19	1.67	.58	.95	.43	.98	(99)
Parent ethnicity (White UK, Other)	-.60	1.56	-.56	.31	1.15	1.53	(99)
Parent relationship (mother, father)	2.12*	1.38	.65	.07	.39	.62	(102)
Single parenthood (single, both parents)	2.15*	.50	-2.10*	-2.63*	-.55	-.29	(97)
Parent occupation (unskilled, skilled)	1.89	-.83	-.29	-.75	-.63	-.17	(97)
Nursery provision (state, private)	3.28**	1.57	.02	.33	-.42	-.19	(102)

*p<.05, **p<.01

Table 16: ANOVAs examining the relationship between parental cognition variables and demographic variables

	PLOC	PCF	Pexpm	Pexpb	Pconm	Pconb	(df)
Parent employment	.96	.07	3.12*	2.77	.07	.23	(2,99)
Borough	4.69**	.93	.19	.55	.33	.50	(10,93)
Nursery	1.65	.98	.51	.81	.65	.39	(3,100)

**p<.01

Table 17: Mean (sd) parental cognition scores relating to significant demographic variable

	PLOC	Pexpm	Pexpb
Parent relationship:			
Father	126.84 (17.42)	-	-
Mother	112.57 (15.22)		
Single parent:			
Yes	120.10 (20.75)	33.18 (9.62)	28.92 (11.72)
No	110.64 (12.85)	38.14 (10.39)	35.86 (11.28)
Parent employment:			
None/Student	-	35.47 (10.78)	-
Part-time		40.60 (10.66)	
Full-time		34.48 (8.91)	
Nursery provision:			
State	118.19 (14.91)	-	-
Private	108.59 (14.95)		
Borough:			
1	107.41 (15.52)	-	-
2	121.18 (9.87)		
3	114.85 (12.07)		
4	117.53 (18.34)		

Table 18: Correlations between parental cognitions

	PLOC	PCF	Pexpm	Pexpb	Pconm	Pconb
PLOC	-	-	-	-	-	-
PCF	.31**	-	-	-	-	-
Pexpm	.02	-.07	-	-	-	-
Pexpb	.07	.01	.88**	-	-	-
Pconm	-.28**	.01	-.28**	-.28**	-	-
Pconb	-.31**	-.01	-.28**	-.31**	-.82**	-

**p<.01

The results suggested that parent control of caregiving failure positively correlated with parental locus of control ($r=.31$, $p=.001$), with a higher perceived control of failure associated with more external locus of control. In addition parental locus of control was negatively correlated with parent expectation of control of child mood ($r=-.28$, $p<0.01$) and behaviour ($r=-.31$, $p=0.001$). Parents who had a more external locus of control were less likely to expect to change their child's anxious mood and avoidant behaviour in a threatening situation. Furthermore, the four subscales of the Preschool Ambiguous Scenarios Questionnaire (parental expectations of child anxious mood and behaviour, and parental control of anxious mood and behaviour) correlated with each other ($r=.28$ to $.88$).

In summary, these results provided information that the newly developed scale, Preschool Ambiguous Scenarios Questionnaire, had moderate convergent validity with parental locus of control. Parental locus of control also had convergent validity with perceived control of caregiving.

3.4 HYPOTHESIS 1 - MORE ANXIOUS PARENTS WILL HAVE MORE ANXIOUS CHILDREN

The first hypothesis aimed to replicate results of previous studies regarding the association between parental anxiety and child anxiety. Hierarchical multiple regressions were conducted with each of the four ratings of child anxiety as the dependent variable, to examine the effect of parental anxiety after controlling for other potential confounding demographic variables (which were found to be significant in 3.2.3).

After controlling for demographic variables, parental anxiety was not found to be significantly related to child anxiety, as measured by teacher ratings of child anxious behaviours (CBQt), parent ratings of behaviour inhibition (BIp) or teacher ratings of inhibition (BIt) (see Table 19, 20, 21). This was confirmed by uni-variate correlations, which found that parental anxiety was not associated with any of the three measures (CBQt: $r=-.03$, $p=.75$; BIp: $r=.09$, $p=.36$; BIIt: $r=.01$, $p=.92$).

However after controlling for demographic variables, parental anxiety was significantly related to child anxiety, as measured by parent ratings of child anxious behaviours (CBQp: See Table 22). More anxious parents had more anxious children. Parental anxiety also accounted for a significant increase in the amount of variance in child anxiety, than the variance explained by demographic variables alone ($\beta=.27$, $\Delta R^2=.07$, $F(1,91)=8.94$, $p=.004$). Together, demographic factors and parental anxiety explained a total of 30% of the variance in child anxiety.

In summary, parental anxiety was significantly related to only one measure of child anxiety – parent rating of child anxious behaviours. Therefore this was the only measure of *child anxiety* used in subsequent analyses.

Table 19: Effect of parental anxiety (STAI) on teacher rating of child anxious behaviours (CBQt), after controlling for significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Child age	-.57	.20	-.28**	.08**
Step 2				
STAI	-.00	.01	-.01	.00

**p<.01

Table 20: Effect of parental anxiety (STAI) on teacher rating of inhibition (BIp), after controlling for significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Child age	-.42	.25	-.18	
Single parenthood	.42	.26	.17	.07*
Step 2				
STAI	.00	.01	.11	.01

*p<.05

Table 21: Effect of parental anxiety (STAI) on teacher rating of inhibition (BIt), after controlling for significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Child age	-.79	.29	-.27**	
Single parenthood	.51	.31	.16	.12**
Step 2				
STAI	.01	.02	.05	.00

**p<.01

Table 22: Effect of parental anxiety (STAI) on parent rating of child anxious behaviours (CBQp) after controlling for significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent age	-.00	.01	-.23*	
Child ethnicity	.20	.27	.11	
Parent ethnicity	.01	.27	.05	
Parent employment	-.12	.11	-.11	
Parent relationship	-1.03	.34	-.29**	
Nursery	-.00	.03	-.10	.23**
Step 2				
STAI	.00	.01	.27**	.07**

*p<.05, **p<.001

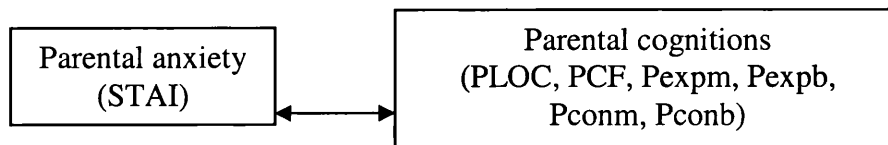
Adult anxiety and depression often have co-morbid presentations (e.g. Brown & Barlow, 1992), and this was supported in the current study by a high correlation between parental anxiety and depression ($r=.66, p<.001$). Parents higher in trait anxiety were more likely to have higher levels of depression. Therefore it was important to examine the unique contribution of parental anxiety to child anxiety, over and above that explained by parental depression. A regression analysis was conducted entering parental depression in the second step (after demographic variables), then parental anxiety in the next step. Then steps 2 and 3 were reversed in the second regression analyses.

The results showed that when entered separately without the other, both parental anxiety and depression were significantly related to child anxiety and accounted for a significant increase in the amount of variance of child anxiety explained, than explained by demographic variables (STAI: $\beta=.27, t=2.94, p=.004$); BDI: $\beta=.22, t=2.38, p=.02$) (see Tables 23-24). However, when entered simultaneously, neither parental anxiety nor depression remained significantly related to child anxiety, although the beta of parental anxiety approached significance (STAI: $\beta=.22, p=.07, \Delta R^2 =.00, F(1,89)=3.27, p=.50$) (BDI: $\beta =.08, \Delta R^2 =.03, F(1,89)=.46, p=.50$) (see Tables 23-24). Therefore, there was no significant increase in the amount of variance in child anxiety explained, after accounting for the relationship between them, but each was significantly related to child anxiety on its own.

In summary, these results suggested that parental anxiety and depression were highly co-varied, although parental anxiety seemed to be more noteworthy in explaining

child anxiety. Given these facts, alongside the primary focus on parental anxiety, parental depression was not entered into future regressions.

3.5 HYPOTHESIS 2 – PARENTAL ANXIETY WILL BE ASSOCIATED WITH PARENTAL COGNITIONS



It was hypothesised that anxious parents would be more likely to have cognitions characterised by anxiety. Therefore, hierarchical regression analyses were conducted to explore whether parental anxiety predicted each of the parental cognitions, when controlling for potential confounding demographic variables (as found in 3.3.1).

3.5.1 More anxious parents will have a more external locus of control.

After controlling for demographic variables, parental anxiety was found to be significantly related to parental locus of control ($\beta = .34$, $t(3.76)$, $p < .001$).

Furthermore, parental anxiety explained a unique contribution to the variance in parental locus of control, than explained by demographic factors alone ($\Delta R^2 = .11$, $F(1,93) = 14.15$, $p < .001$) (See Table 25). Therefore, parental anxiety significantly predicted parental locus of control, with more anxious parents being more likely to have an external locus of control.

Table 23: Effect of parental anxiety (STAI) and depression (BDI) on parent rating of child anxious behaviours (CBQp) after controlling for significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23*	
Child ethnicity	.15	.30	.11	
Parent ethnicity	.13	.29	.05	
Parent employment	-.13	.11	-.11	
Parent relationship	-1.04	.34	-.29**	
Nursery	-.00	.03	-.10	.23**
Step 2				
STAI	.00	.01	.27**	.07**
Step 3				
BDI	.00	.02	.08	.00

*p<.05, **p<.001

Table 24: Effect of parental depression (BDI) and anxiety (STAI) on parent rating of child anxious behaviours (CBQp) after controlling for significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23*	
Child ethnicity	.15	.30	.11	
Parent ethnicity	.13	.29	.05	
Parent employment	-.13	.11	-.11	
Parent relationship	-1.04	.34	-.29**	
Nursery	-.00	.03	-.10	.23**
Step 2				
BDI	.00	.01	.22*	.05*
Step 3				
STAI	.01	.01	.22	.03

*p<.05, **p<.001

Table 25: Effect of parental anxiety (STAI) on parental locus of control (PLOC) after controlling for significant demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent relationship	-10.35	6.21	-.16	
Single parenthood	-8.68	3.35	-.24*	
Type of nursery provision	-7.32	3.52	-.24*	
Borough of nursery	-1.16	1.83	-.07	.19***
Step 2				
STAI	.601	.16	.34	.11***

Table 26: Effect of parental anxiety (STAI) on perceived control of caregiving failure (PCF)

Predictor	B	SE B	β	ΔR^2
Step 1				
STAI	.00	.01	.05	.00

Table 27: Effect of parental anxiety (STAI) on parent expectation of child anxious mood (Pexpm), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1 (control variables)				
Single parent	4.82	2.38	.20	
Parent employment	.07	1.33	.01	.04
Step 2				
STAI	.15	.12	.13	.02

Table 28: Effect of parental anxiety (STAI) on parent expectation of child anxious behaviour (Pexpb), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1 (control variables)				
Single parent	6.93	2.63	.26	.07**
Step 2				
STAI	.18	.13	.13	.02

Table 29: Effect of parental anxiety (STAI) on parent control of child anxious mood (Pconm), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
STAI	-.34	.16	-.21	.04*

Table 30: Effect of parental anxiety (STAI) on parent control of child anxious behaviour (Pconb), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1 (control variables)				
STAI	-.58	.16	-.33	.11**

* $p < .05$; ** $p < .01$; *** $p < .001$

3.5.2 More anxious parents will have a lower perceived control of caregiving failure.

Parental anxiety was not found to be significantly related to perceived control of caregiving failure (see Table 26). Therefore contrary to the hypothesis, increased parental anxiety did not predict low perceived control of caregiving failure.

3.5.3 More anxious parents will expect their child to be more upset in ambiguous situations.

Parent anxiety was not found to be significantly related to parental expectation of child anxious mood, once demographic variables were controlled for (See Table 27). Therefore parental anxiety did not predict that parents would expect their child to be more upset in ambiguous situations.

3.5.4 More anxious parents will expect their child to behave more anxiously in ambiguous situations.

Parent anxiety was not found to be significantly related to parental expectation of child anxious behaviour, once demographic variables were controlled for (see Table 28). Therefore parental anxiety did not predict that parents would expect their child to be more avoidant in ambiguous situations.

3.5.5 More anxious parents will expect to be less likely to be able to change their child anxious mood in ambiguous situations

After controlling for potential confounding variables, parental anxiety was found to be significantly related to parental control of child anxious mood ($\beta = -.21$, $t(2.17)$,

$p=.03$). Parental anxiety explained a unique contribution in the variance of parent control of child anxious mood ($R^2 = .04$, $F(1,102)=4.73$, $p=.03$) (see Table 29).

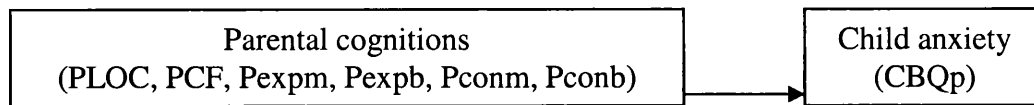
Therefore, consistent with the findings for parental locus of control, parental anxiety predicted parent expectation about their ability to change their child's upset mood in ambiguous situations. More anxious parents expected to be less able to change their child's mood if they became upset in an ambiguous situation.

3.5.6 More anxious parents will expect to be less able to change their child's anxious behaviour in ambiguous situations

Parental anxiety was also found to be significantly related to parental control of child anxious behaviour ($\beta = -.33$, $t(-3.54)$, $p=.001$) (see Table 30). Parental anxiety explained a unique contribution in the variance of parent control of child anxious behaviour ($R^2 = .11$, $F(1,102)=12.50$, $p=.001$), than demographic factors alone. Therefore, parental anxiety predicted parent control of child anxious behaviour, with more anxious parents expecting to be less able to change their child's avoidant behaviour in an ambiguous situation.

In summary of Hypothesis 2, parental trait anxiety predicted three parental cognitions: parental locus of control, and parent control of child anxious mood and behaviour in ambiguous situations. More anxious parents had a more external locus of control and felt less able to change their child's upset mood and avoidant behaviour. However parental anxiety did not predict perceived control of caregiving failure, parental expectation of child anxious mood and behaviour in ambiguous situations.

3.6 HYPOTHESIS 3 – PARENTAL COGNITIONS WILL BE ASSOCIATED WITH HIGHER LEVELS OF CHILD ANXIETY



Next it was important to investigate whether parental cognitions, were associated with child anxiety. Therefore, hierarchical multiple regression analyses were conducted to assess whether each parental cognition predicted child anxiety (as measured by parent ratings of child anxious behaviours), whilst controlling for potential confounding demographic variables.

3.6.1 Parents with a more external locus of control will have children with higher levels of child anxiety

Parental locus of control was not found to be significantly related to parent rating of anxious behaviours once demographic variables were controlled for (see Table 31).

3.6.2 Parents with a lower perceived control of caregiving failure will have children with higher levels of child anxiety

This hypothesis was not supported, as perceived control of caregiving failure was not found to significantly relate to parent rating of child anxious behaviours, after controlling for demographic variables (see Table 32).

3.6.3 Parents who expect their children to be more upset in ambiguous scenarios will have children with higher levels of child anxiety

The results showed that after controlling for demographic variables, parent expectation of child anxious mood had a significant effect on child anxiety ($\beta=.32$, $t(3.67)$, $p<.001$), with a unique contribution to the variance ($\Delta R^2=.10$, $F(1,91)=13.44$, $p<.001$) (see Table 33). Parents who expected their child to be more upset in ambiguous scenarios, had more anxious children.

3.6.4. Parents who expect their children to behave more avoidantly in

ambiguous scenarios will have children with higher levels of child anxiety

After controlling for demographic variables, parent expectation of child anxious behaviour also had a significant effect on child anxiety ($\beta=.36$, $t(4.18)$, $p<.001$), with a unique contribution to the variance ($\Delta R^2=.13$, $F(1,91)=17.50$, $p<.001$) (see Table 34). Parents who expected their child to behave more avoidantly in ambiguous scenarios, had more anxious children.

3.6.5 Parents who expect to be less able to change their child's anxious mood

will have children with higher levels of child anxiety

The results showed that after controlling for demographic variables, parent control of child anxious mood had a significant effect on parent rating of child anxious mood ($\beta=-.26$, $t(-2.90)$, $p=.005$), explaining unique contribution to the variance ($\Delta R^2=.07$, $F(1,91)=8.43$, $p=.005$) (see Table 35). Parents who expected to be less able to change their child's upset mood in ambiguous situations, had more anxious children.

Table 31: Effect of parental locus of control (PLOC) on parent rating of child anxious behaviours (CBQp) controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23	
Child ethnicity	.20	.28	.11	
Parent ethnicity	.01	.27	.05	
Parent relationship	-1.03	.34	-.29	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	.10	.23**
Step 2				
PLOC	.01	.01	.17	.03

**p<.001

Table 32: Effect of perceived control of caregiving failure (PCF) on parent rating of child anxious behaviours (CBQp), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23	
Child ethnicity	.20	.28	.11	
Parent ethnicity	.01	.27	.05	
Parent relationship	-1.03	.34	-.29	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	.10	.23**
Step 2				
PCF	.27	.18	.14	.02

**p<.01

Table 33: Effect of parent expectation of child anxious mood (Pexpm) on parent rating of child anxious behaviours (CBQp), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23	
Child ethnicity	.20	.28	.11	
Parent ethnicity	.01	.27	.05	
Parent relationship	-1.03	.34	-.29	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	.10	.23**
Step 2				
Pexpm	.00	.01	.32	.10***

p<.01, *p<.001

Table 34: Effect of parent expectation of child anxious behaviour (Pexpb) on parent rating of child anxious behaviours (CBQp), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23	
Child ethnicity	.20	.28	.11	
Parent ethnicity	.01	.27	.05	
Parent relationship	-1.03	.34	-.29	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	.10	.23**
Step 2				
Pexpb	.00	.01	.36	.13***

p<.01, *p<.001

Table 35: Effect of parent control of child anxious mood (Pconm) on parent rating of child anxious behaviours (CBQp), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23	
Child ethnicity	.20	.28	.11	
Parent ethnicity	.01	.27	.05	
Parent relationship	-1.03	.34	-.29	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	.10	.23**
Step 2				
Pconm	-.00	.01	-.26	.07**

p<.01, *p<.001

Table 36: Effect of parent expectation of child anxious behaviour (Pconb) on parent rating of child anxious behaviours (CBQp), controlling for demographic variables

Predictor	B	SE B	β	ΔR^2
Step 1				
Parent age	-.00	.01	-.23	
Child ethnicity	.20	.28	.11	
Parent ethnicity	.01	.27	.05	
Parent relationship	-1.03	.34	-.29	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	.10	.23**
Step 2				
Pconb	-.00	.01	-.23	.05*

*p<.05, **p<.01

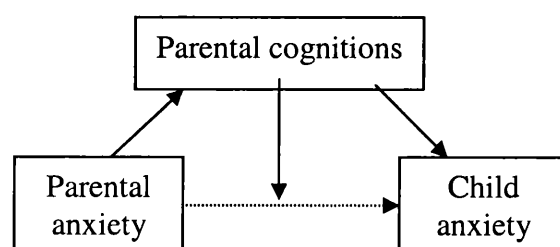
3.6.6 Parents who expect to be less able to change their child's anxious behaviour will have children with higher levels of child anxiety

After controlling for demographic variables, parent control of child anxious behaviour also had a significant effect on parent rating of child anxious behaviours ($\beta = -.23$, $t(-2.56)$, $p = .01$), explaining a unique contribution to the variance ($\Delta R^2 = .05$, $F(1,91) = 6.56$, $p = .01$) (see Table 36). Parents who expected to be less able to change their child's avoidant behaviour in ambiguous situations, had more anxious children.

In summary of Hypothesis 3, four parental cognitions predicted child anxiety, as measured by parent ratings of child anxious behaviour. Parents who expected their child to be upset and avoidant in ambiguous situations, and felt less able to change this mood and behaviour, had more anxious children.

Having established that certain parental cognitions were related to both parental anxiety and child anxiety, Hypothesis 4 aimed to investigate the potential mediating role of these parental cognitions (i.e. whether parental cognitions accounted for the relationship between parental anxiety and child anxiety).

3.7 HYPOTHESIS 4 – PARENTAL COGNITIONS WILL MEDIATE THE RELATIONSHIP BETWEEN PARENTAL ANXIETY AND CHILD ANXIETY



Multiple regressions in Hypothesis 1, 2 and 3, had established the following relationships, after controlling for potential confounding variables:

- a) Parental anxiety predicted child anxiety (parent ratings of children's anxious behaviours);
- b) Parental anxiety predicted three parental cognitions (parental locus of control, parent control of child anxious mood, and parent control of child anxious behaviour);
- c) Four parental cognitions (Parent expectation of child anxious mood; Parent expectation of child anxious behaviour; Parent control of child anxious mood; and Parent control of child anxious behaviour) predicted child anxiety (as measured by parent ratings of children's anxious behaviours).

Therefore, it was important to examine whether the two parental cognitions (Parent control of child anxious mood and parent control of child anxious behaviour), which were related with *both* parental and child anxiety, acted as mediators in the relationship between parental anxiety and child anxiety. To test the mediating role of these two parental cognitions, a series of regressions were conducted as recommended in Baron and Kenny (1986). The remaining four cognitions were not tested given that did not significantly relate to both parental anxiety and child anxiety. In each regression, potential confounding variables were controlled for, by entering demographic variables associated with *either* child anxiety or parental cognitions in Step 1. Thus regressions testing each parental cognition had seven control variables in Step 1. As mentioned previously only parent ratings of child anxious behaviours were used as the measure of child anxiety.

3.7.1 Test 1

Test 1 examined whether parental anxiety as the independent variable, had an effect on child anxiety (as measured by parent rating of child anxious behaviours) as the dependent variable, by regressing child anxiety on parental anxiety. This regression was similar to that conducted 3.2.4 but with single parenthood added in. The results showed that when controlling for the seven demographic variables, parental anxiety remained significantly related to child anxiety ($\beta=.29$, $t(3.05)$, $p=.003$) (see Table 37). Parental anxiety accounted for a unique contribution in variance of parent rating of child anxious behaviours above that of demographic factors ($\Delta R^2 =.07$, $F(1,87)=9.33$, $p=.003$). Therefore, Test 1 was confirmed as parental anxiety had an effect on child anxiety.

3.7.2 Test 2

Test 2 examined whether parental anxiety, as the independent variable, had an effect on the parental cognitions, the proposed mediator variables, by regressing parental cognitions on parental anxiety. Therefore regressions were conducted separately with each of the two parental cognitions – parental control of child anxious mood and parental control of child anxious behaviour – as the dependent variable, and parental anxiety as the independent variable.

3.7.2 a) Parent control of child anxious mood

The regression analysis showed that parental anxiety was significantly related to parent control of child anxious mood (see Table 38). Parental anxiety also explained a significant increase in the variance of parent control of child anxious mood, than explained by demographic factors alone ($\beta=-.22$, $\Delta R^2 = .04$, $F(1,87)=3.88$, $p=.05$).

Therefore, parents with higher levels of anxiety were more likely to expect to be less able to change their child's upset mood.

3.7.2 b) Parental control of child anxious behaviour

The regression analysis showed parental anxiety was significantly related to parent control of child anxious behaviour (see Table 39). Parental anxiety also explained a unique contribution to the variance than explained by demographic factors ($\beta = -.36$, $\Delta R^2 = .12$, $F(1,87) = 12.07$, $p = .001$). Therefore, parents with higher levels of anxiety were more likely to expect to be less able to change their child's avoidant behaviour.

Table 37: Test 1 - Effect of parental anxiety (STAI) on parent rating of child anxious behaviours (CBQp) controlling for all significant demographics variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent age	-.00	.01	-.23*	
Child ethnicity	.21	.28	.12	
Parent ethnicity	.00	.28	.05	
Parent relationship	-1.04	.34	-.29**	
Parent employment	-.12	.11	-.11	
Nursery	-.00	.03	-.11	
Single parenthood	.00	.19	.01	.23**
Step 2				
STAI	.00	.01	.29**	.07**

*p<.05, **p<.01

Table 38: Test 2 - Effect of parental anxiety (STAI) on parent control of child anxious mood (Pconm) after controlling for all significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent age	.14	.25	.06	
Child ethnicity	4.45	5.27	.15	
Parent ethnicity	-7.06	5.22	-.23	
Parent relationship	-2.04	6.39	-.04	
Parent employment	-.66	2.06	-.04	
Nursery	.05	.60	.01	
Single parenthood	2.80	3.52	.09	.03
Step 2				
STAI	-.35	.18	-.22	.04*

*p<.05

Table 39: Test 2 - Effect of parental anxiety (STAI) on parent control of child anxious behaviour (Pconb) after controlling for all significant demographic variables

Variable	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent age	.14	.25	.06	
Child ethnicity	4.45	5.27	.15	
Parent ethnicity	-7.06	5.22	-.23	
Parent relationship	-2.04	6.39	-.04	
Parent employment	-.66	2.06	-.04	
Nursery	.05	.60	.01	
Single parenthood	2.80	3.52	.09	.03
Step 2				
STAI	-.65	.19	-.36	.12**

*p<.05, **p<.01

3.7.3 Tests 3

Tests 3 and 4 are conducted as part of the same analysis. Test 3 establishes that the dependent variable (child anxiety) co-varies with the proposed mediator variable (parental cognitions) even after controlling for the original independent variable (parental anxiety). Therefore, child anxiety (as measured by parent rating of child anxious behaviours) was regressed on parental anxiety and parental cognitions, controlling for demographic variables.

3.7.3 a) Parental control of child anxious mood

When controlling for demographic variables and parental anxiety, parent control of child anxious mood significantly predicted child anxiety ($\beta = -.21$, $t(-2.33)$, $p = .02$) (see Table 40). Parental anxiety and parent control of child anxious mood together accounted for a significant increase in the variance of child anxiety, from that explained by demographic factors alone ($\Delta R^2 = .12$, $F(2,86) = 7.62$, $p = .001$).

Therefore, Test 3 was confirmed, as whilst controlling for demographic variables and parental anxiety, parental control of child anxious mood predicted child anxiety.

3.7.3 b) Parental control of child anxious behaviour

When controlling for the seven demographic variables, parent control of child anxious behaviour did not significantly predict child anxiety (see Table 41).

3.7.5 Test 4

Test 4 examines whether the relation between the independent variable (parental anxiety) and the dependent variable (child anxiety) either disappears or substantially diminishes when the proposed mediator (parental cognitions) is statistically

controlled. Examining the beta weight of parental anxiety in Test 1 ($\beta=.29$), and comparing it with the beta weight of parental anxiety in Test 3, when controlling for parent control of child anxious mood ($\beta=.24$) or for parent control of child anxious behaviour ($\beta=.23$), showed that it did decrease for both parental cognitions. However, this amount was not significant ($P_{\text{conm}}: z<.001$; $P_{\text{conb}}: z<.001$) according to Sobel (1982 – as cited in Baron & Cohen, 1986).

In summary of Hypothesis 4, a series of regressions were conducted to examine the mediating role of parental control of child anxious mood and behaviour. When parent control of child anxious mood was tested as a mediator variable, Test 1 was confirmed as parental anxiety was significantly related to child anxiety, after controlling for demographic variables. Test 2 was confirmed as parental anxiety was significantly related to parent control of child anxious mood, after controlling for demographic variables. Test 3 was confirmed as parent control of child anxious mood was significantly related to child anxiety, after controlling for parental anxiety and demographic variables. However, Test 4 was not confirmed, as whilst the relation between parental anxiety and child anxiety did decrease when the parent control of child anxious mood was statistically controlled, the relation did not substantially diminish or disappear.

When parent control of child anxious behaviour was tested as a mediator variable, Test 1 was confirmed, as parental anxiety was significantly related to child anxiety, after controlling for demographic variables. Test 2 was confirmed as parental anxiety was significantly related to parent control of child anxious behaviour, when controlling for other significant variables. Test 3 was not confirmed as child anxiety

was not significantly predicted by parent control of child anxious behaviour. Neither was Test 4 confirmed, as whilst the relation between parental anxiety and child anxiety did decrease when the parent control of child anxious mood was statistically controlled, the relation did not substantially diminish or disappear.

In overall summary of Hypothesis 4, parents expectations of their ability to change child upset mood and avoidant behaviour were not found to act as mediators in the relationship between parental anxiety and child anxiety (as measured by parent ratings of child anxious behaviours).

3.8 ADDITIONAL ANALYSES

Parental cognitions were not found to play a mediating role between parental anxiety and child anxiety. However, both parental anxiety and child anxiety had been found to be significantly related to the two parental cognitions - parent control of child anxious mood and behaviour – in Hypotheses 2 and 3. Therefore, further analyses were conducted to examine whether parental anxiety and child anxiety were *uniquely* associated with each parental cognition, after controlling for the relation between parental anxiety and child anxiety.

Hierarchical multiple regressions were carried out to test whether parental anxiety or child anxiety had independent or shared effects on parental cognitions (parent control of child anxious *mood* and *behaviour*). In the first step parental anxiety was entered into the regression, and in Step 2 child anxiety was entered. Then the regression was conducted with Steps 1 and 2 reversed. In this manner the unique contribution of

both parental anxiety and child anxiety, adjusting for the relations accounted for by the other, could be examined. No demographic variables were entered into the regression as none had been found to be related with parent control of child anxious mood and behaviour (see 3.3.4). Given that parent ratings of child anxious behaviour, could themselves be a factor on parental anxiety, these regressions were conducted for both parent and teacher measures of child anxious behaviours and inhibition.

Table 40: Test 3 - Effect of parent control of child anxious mood (Pconm) on parent rating of child anxious behaviours (CBQp) after controlling for parental anxiety (STAI) and other significant variables

Predictor	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent age	-.00	.01	-.23*	
Child ethnicity	.21	.28	.12	
Parent ethnicity	.01	.28	.05	
Parent relationship	-1.04	.34	-.29**	
Parent employment	-.03	.11	-.11	
Nursery	-.12	.03	-.11	
Single parenthood	.00	.19	.01	.23**
Step 2				
STAI	.00	.01	.24*	
Pconm	-.00	.01	-.21*	.12**

**p<.01

Table 41: Test 3 - Effect of parent control of child anxious behaviour (Pconb) on parent rating of child anxious behaviours (CBQp) after controlling for parental anxiety (STAI) and other significant variables

Predictor	B	SE B	β	ΔR^2
Step 1 (control variables)				
Parent age	-.00	.01	-.23*	
Child ethnicity	.21	.28	.12	
Parent ethnicity	.01	.28	.05	
Parent relationship	-1.04	.34	-.29**	
Parent employment	-.03	.11	-.11	
Nursery	-.12	.03	-.11	
Single parenthood	.00	.19	.01	.23**
Step 2				
STAI	.00	.01	.23*	
Pconb	-.01	.01	-.16	.10**

**p<.01

3.8.1. Predicting parent control of child anxious mood

3.8.1 a) Parent rating of child anxious behaviours (CBQp) and parental anxiety (STAI)

Child anxiety (as measured by parent rating of child anxious behaviours) and parental anxiety were both significantly related to parent control of child anxious mood in the first step (CBQp: $\beta = -.30$, $R^2 = .09$, $F(1,102) = 10.31$, $p = .002$; STAI: $\beta = -.21$, $R^2 = .04$, $F(1, 102) = 4.73$, $p = .03$). However, when both were entered simultaneously, parental anxiety did not account for unique variance, whilst child anxiety explained 6% unique variance in parent control of child anxious mood ($\beta = -.26$, $\Delta R^2 = .06$, $F(1,101) = 6.97$, $p = .01$) (see Table 42). Therefore, child anxiety (as measured by parent ratings anxious behaviours) explained unique variance in parent control of child anxious mood, beyond that explained by parental anxiety.

3.8.1 b) Parent rating of child inhibition (BIp) and parental anxiety (STAI)

Child anxiety (as measured by parent rating of inhibition) and parental anxiety were both significantly related to parent control of child anxious mood in the first step (BIp: $\beta = -.24$, $R^2 = .06$, $F(1,102) = 5.96$, $p = .02$; STAI: $\beta = -.21$, $R^2 = .04$, $F(1, 102) = 4.73$, $p = .03$). However a different result was found when parental anxiety and child anxiety were entered simultaneously, as both remained significantly related to parent control of child anxious mood (BIp: $\beta = -.17$, $\Delta R^2 = .05$, $F(1,101) = 5.18$, $p = .03$; STAI: $\beta = -.19$, $\Delta R^2 = .04$, $F(1,101) = 3.97$, $p = .05$) (see Table 44). This suggests that both child anxiety (as measured by parent rating of inhibition) and parental anxiety have unique variance in explaining parental control of child anxious mood.

3.8.1 c) Teacher rating of child anxious behaviours (CBQt) and parental anxiety (STAI)

In contrast with the results on parent ratings, child anxiety (as measured by teacher ratings of anxious behaviours) was not significantly related to parent control of child anxious mood in the first step. However, parental anxiety was significantly related and explained 5% of the variance in parent control of child anxious mood, beyond the variance explained by child anxiety (STAI: $\beta=-.21$, $R^2=.04$, $F(1, 102)=4.73$, $p=.03$).

This suggests that parental anxiety has unique variance in explaining parent control of child anxious mood.

3.8.1 d) Teacher rating of child inhibition (BI) and parental anxiety (STAI)

Again, child anxiety (as measured by teacher rating of inhibition) was not significantly related to parent control of child anxious mood, but parental anxiety was (STAI: $\beta=-.21$, $R^2=.04$, $F(1, 102)=4.73$, $p=.03$). Parental anxiety explained 4% of the variance in parent control of child anxious mood, beyond the variance explained by child anxiety ($\beta=-.21$, $\Delta R^2=.04$, $F(1,101)=4.72$, $p=.03$) (see Table 45). This suggests that as with the previous finding, parental anxiety has unique variance in explaining parent control of child anxious mood, after controlling for child anxiety (as measured by teacher rating of inhibition).

Table 42: Effect of parental anxiety (STAI) and child anxiety (CBQp) on parent control of child anxious mood (Pconm)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
CBQp	.30	.09	.09	10.31**	1, 102	-.30**
Step 2						
STAI	.33	.11	.01	1.61	1, 101	-.13
Step 1						
STAI	.21	.04	.04	4.73*	1,102	-.21*
Step 2						
CBQp	.33	.11	.06	6.97*	1,101	-.26*

Table 43: Effect of parental anxiety (STAI) and child anxiety (BIp) on parent control of child anxious mood (Pconm)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
BIp	.24	.06	.06	5.96*	1,102	-.24*
Step 2						
STAI	.30	.09	.04	3.97*	1,101	-.19*
Step 1						
STAI	.21	.04	.04	4.73*	1,102	-.21*
Step 2						
BIp	.30	.09	.05	5.18*	1,101	-.22*

Table 44: Effect of parental anxiety (STAI) and child anxiety (CBQt) on parent control of child anxious mood (Pconm)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
CBQt	.15	.02	.02	2.42	1,102	-.15
Step 2						
STAI	.26	.07	.05	5.02*	1,101	-.22*
Step 1						
STAI	.21	.04	.04	4.73*	1,102	-.21*
Step 2						
CBQt	.26	.05	.02	2.73	1,101	-.16

Table 45: Effect of parental anxiety (STAI) and child anxiety (BIt) on parent control of child anxious mood (Pconm)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
BIt	.13	.02	.02	1.82	1,102	-.13
Step 2						
STAI	.25	.06	.04	4.72*	1,101	-.21*
Step 1						
STAI	.21	.04	.04	4.73*	1,102	-.21*
Step 2						
BIt	.25	.06	.02	1.83	1,101	-.13

*p<.05, **p<.01

3.8.2 Predicting parent control of child behaviour

3.8.2 a) Parent rating of child anxious behaviours (CBQp) and parental anxiety (STAI)

Child anxiety (as measured by parent rating of child anxious behaviours) and parental anxiety, were both significantly related to parent control of child anxious behaviour in the first step (CBQp: $\beta = -.25$, $R^2 = .06$, $F(1,102) = 6.82$, $p = .01$; STAI: $\beta = -.33$, $R^2 = .11$, $F(1, 102) = 12.50$, $p = .001$). However when entered simultaneously, child anxiety did not account for unique variance, whilst parental anxiety accounted for a 7% variance beyond that accounted for by child anxiety ($\beta = -.28$, $\Delta R^2 = .07$, $F(1,101) = 8.11$, $p = .005$) (see Table 46). This suggests that parental anxiety had unique variance in explaining parent control of child behaviour, after controlling for child anxiety (as measured by parent ratings of anxious behaviours)

3.8.2 b) Parent rating of child inhibition (BIp) and parental anxiety (STAI)

As previously, child anxiety (as measured by parent rating of inhibition) and parental anxiety, were both significantly related to parent control of child anxious behaviour in the first step (BIp: $\beta = -.20$, $R^2 = .04$, $F(1,102) = 4.34$, $p = .04$; STAI: $\beta = -.33$, $R^2 = .11$, $F(1, 102) = 12.50$, $p = .001$). However, again when both were entered simultaneously, child anxiety did not account for unique variance, whilst parental anxiety accounted for a 10% in the variance beyond that explained by child anxiety ($\beta = -.31$, $\Delta R^2 = .10$, $F(1,101) = 11.46$, $p = .001$) (see Table 48). This suggests that parental anxiety explained unique variance in explaining parent control of child anxious behaviour, after controlling for child anxiety (as measured by parent rating of inhibition).

3.8.2 c) Teacher rating of child anxious behaviours (CBQt) and parental anxiety (STAI)

Child anxiety (as measured by teacher ratings of anxious behaviours) was not significantly related to parent control of child anxious behaviour in the first step. However, parental anxiety was significantly related (STAI: $\beta=-.33$, $R^2=.11$, $F(1, 102)=12.50$, $p=.001$). When both were entered simultaneously, parental anxiety accounted for an 11% increase in the variance beyond that explained by child anxiety ($\beta=-.34$, $\Delta R^2=.11$, $F(1,101)=12.96$, $p=.001$) (see Table 47). As with parent ratings, this suggests that parental anxiety explains unique variance in parent control of child anxious behaviour, after controlling for child anxiety (as measured by teacher ratings of anxious behaviours).

3.8.2 d) Teacher rating of child inhibition (BIIt) and parental anxiety (STAI)

Again, child anxiety (as measured by teacher ratings of inhibition) was not significantly related to parent control of child anxious behaviour in the first step. However, parental anxiety was (STAI: $\beta=-.33$, $R^2=.11$, $F(1, 102)=12.50$, $p=.001$). When both were entered simultaneously, parental anxiety accounted for an 10% increase in the variance beyond that explained by child anxiety ($\beta=-.33$, $\Delta R^2=.10$, $F(1,101)=12.63$, $p=.001$) (see Table 49). As with former findings on this cognition, this suggests that parental anxiety explains unique variance in parent control of child anxious behaviour, after controlling for child anxiety (as measured by teacher ratings of inhibition).

In summary, additional analyses were conducted to explore whether child anxiety or parental anxiety had independent effects on two parental cognitions. Child anxiety

was found to have unique variance only when using *parent* ratings of child anxiety to explain parent control of child *mood*. When *teacher* ratings were used, parental anxiety uniquely explained parent control of child *mood* and *behaviour*, after controlling for child anxiety.

3.9 SUMMARY OF RESULTS

Initial analyses showed that a number of demographic variables were associated with child anxiety. The results also showed that whilst parent and teacher measures of behavioural inhibition were related, parent and teacher ratings of child anxious behaviours were not. Furthermore, given the relatively low association between the four child anxiety measures, a composite variable of child anxiety was not created.

When Hypothesis 1 was tested, increased parental trait anxiety was found to be associated with increased child anxiety, as measured by parents' rating of children's anxious behaviours. In Hypothesis 2, parental anxiety was found to be related to three parental cognitions. More anxious parents were more likely to have a more external locus of control, and expected to be less able to change their child's upset mood and avoidant behaviour. However, parental anxiety was not found to be related to perceived control of caregiving failure, or parent expectation of either their child's anxious mood or behaviour. In Hypothesis 3, four parental cognitions were found to significantly related to child anxiety, as measured by parent ratings of child anxious behaviours. Parents who expected their child to be more upset and avoidant in ambiguous situations, and that that they would be less able to change this anxious mood and behaviour, had more anxious children. Finally, in Hypothesis 4, two

parental cognitions were tested as mediating variables in the association between parental anxiety and child anxiety. Whilst many of the assumptions for a mediator role were fulfilled, parent control of child anxious mood and behaviour, did not mediate the relationship between parental anxiety and child anxiety.

Additional analyses suggested parent control of child anxious mood and behaviour was uniquely explained by parental anxiety after controlling for child anxiety. The exception to this was that child anxiety uniquely explained parent control of child anxious *mood*, when *parent* ratings of child anxiety were used.

Table 46: Effect of parental anxiety (STAI) and child anxiety (CBQp) on parent control of child anxious behaviour (Pconb)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
CBQp	.25	.06	.06	6.82*	1,102	-.25*
Step 2						
STAI	.36	.13	.07	8.11**	1,101	-.28**
Step 1						
STAI	.33	.11	.11	12.50**	1,102	-.33**
Step 2						
CBQp	.36	.13	.02	2.69	1,101	-.16

Table 47: Effect of parental anxiety (STAI) and child anxiety (BIp) on parent control of child anxious behaviour (Pconb)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
BIp	.20	.04	.04	4.34*	1,102	-.20*
Step 2						
STAI	.37	.14	.10	11.46**	1,101	-.31**
Step 1						
STAI	.33	.11	.11	12.50**	1,102	-.33**
Step 2						
BIp	.37	.14	.03	3.45	1,101	-.17

Table 48: Effect of parental anxiety (STAI) and child anxiety (CBQt) on parent control of child anxious behaviour (Pconb)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
CBQt	.13	.01	.01	1.76	1,102	-.11
Step 2						
STAI	.36	.12	.11	12.96**	1,101	-.34**
Step 1						
STAI	.33	.11	.11	12.50**	1,102	-.33**
Step 2						
CBQt	.36	.12	.01	2.28	1,101	-.12

Table 49: Effect of parental anxiety (STAI) and child anxiety (BIIt) on parent control of child anxious behaviour (Pconb)

Variable	R	R ²	Δ R ²	Δ F	df	β
Step 1						
BIIt	.16	.03	.03	2.64	1,102	-.16
Step 2						
STAI	.37	.13	.10	12.63**	1,101	-.33**
Step 1						
STAI	.33	.11	.11	12.50**	1,102	-.33**
Step 2						
BIIt	.37	.13	.02	2.85	1,101	-.16

*p<.05, **p<.01

CHAPTER 4

DISCUSSION

4.1 OVERVIEW

The aim of the present study was to examine the role of parental cognitions in the association between parental anxiety and child anxiety in preschool children. The findings were consistent with past research on the association between parental anxiety and child anxiety. In addition, some parental cognitions were found to be associated with parental anxiety or child anxiety. However, the results did support the role of parental cognitions as mediators in the relationship between parental anxiety and child anxiety.

The main findings are summarised as follows:

- 1) Parental anxiety was significantly related to one measure of child anxiety, with more anxious parents likely to have more anxious children (as measured by parent ratings of anxious behaviours). Parental anxiety was not related to the other three measures of child anxiety (teacher ratings of child anxious behaviours, parent and teacher ratings of behavioural inhibition).
- 2) Parental anxiety was also significantly related to three types of parental cognition. More anxious parents had a more external locus of control, and expected to be less able to change both their child's upset mood and their avoidant behaviour. However, parental anxiety was not related to the other three types of parental cognition (perceived control of caregiving failure, parent expectation of child anxious mood, parent expectation of child anxious behaviour).

- 3) Four types of parental cognition were significantly related to child anxiety, as measured by parent ratings of anxious behaviours. Parents who expected their child to be more upset and avoidant in ambiguous situations, had children with higher levels of anxiety. Parents who felt less able to change this anxious mood and behaviour, also had children with higher levels of anxiety. However, parental locus of control and perceived control of caregiving failure were not related to child anxiety.
- 4) Two parental cognitions were related to both child anxiety and parental anxiety - parent control of child anxious mood and parent control of anxious behaviour. Neither of these cognitions was found to mediate significantly the relationship between parental anxiety and child anxiety.
- 5) When teacher ratings of child anxiety were used, parent control of child both anxious *mood* and anxious *behaviour* were uniquely explained by parental anxiety. However, when parent ratings of child anxiety were used, parent control of child anxious *mood* was uniquely explained by child anxiety, whereas parent control of child anxious *behaviour* was uniquely explained by parental anxiety.

4.2 FINDINGS

4.2.1 Initial analyses

Regarding the levels of child anxiety, it seemed that participant children were less anxious than non-participant children. When compared with existing data on the mean scores for inhibition (Asendorpf, 1990), the current sample appeared to be slightly less inhibited. However, Asendorpf's study used a German sample and no other data has been published on the level of inhibition in children from the UK.

Furthermore, when the current sample was compared to existing data on the measurement of child anxious behaviours (Eley et al., in press), the mean scores of current participants were similar (see Appendix N). Thus whilst the participants may have been slightly less anxious than non-participants, the levels of anxiety in the current sample were fairly representative of community cohorts in previous studies.

Initial analyses showed that parent ratings of behavioural inhibition were related to parent ratings of anxious behaviours. The same was true for teacher ratings. These results replicate findings from previous studies showing that more inhibited children are more anxious (Biederman et al., 1990, 1993; Caspi et al., 1996; Hirshfeld et al., 1992, Reznick et al., 1992). With regard to the measurement of inhibition, there was significant concordance between parent and teacher ratings. However, parent and teacher ratings of child anxious behaviours did not significantly concur.

The stronger inter-rater reliability for inhibition is not surprising given that inhibition is closely linked with child temperament, a construct that is more stable across situations. On the other hand, the inter-rater differences in reports of anxious behaviours are supported by previous research. Many studies have already highlighted that there are frequently inter-rater differences in the measurement of child anxiety (Achenbach et al., 1987; Youngstrom et al., 2000). Much of this difficulty is inherent to measuring internalising problems in children in general, with several studies showing poorer agreement between child reports and other informant's reports of internalising versus externalising problems (Herjanic & Reich, 1997; Kolko & Kazdin, 1993). Additionally, mothers have been found to report more child behaviour problems than children or teachers, regardless of maternal

symptomatology (Briggs-Gowan et al., 1996). Although teachers were used as independent raters of child anxiety in this study, it is possible that teachers rate children as less anxious because of situational specificity (i.e. they observe children in different contexts to parents and children may interact differently with teachers compared to their parents) (Achenbach et al., 1987; Offord et al., 1989). As Briggs-Gowan and colleagues (Briggs-Gowan, Carter & Schwab-Stone, 1996) have highlighted, parents possess historical information about children whereas teachers commonly have insight into age-appropriate behaviours and have more opportunity to observe peer interaction.

Nevertheless, the differences between informants in their ratings of child anxiety highlight the need for researchers to carefully consider what measurement of child anxiety to use in young children. Parent report measures of child behaviours in general may be subject to various biases and therefore it might be helpful to compliment these reports with other measures of child anxiety, including observational measures. Given that research on child anxiety has tended to focus on older children, it seems that measurement of anxiety in preschool children has been comparatively neglected. The difficulties of measuring anxiety in children are confounded by the problems of using self-reports in young children. Furthermore, parent and teacher measures of internalising symptoms in preschool children have had little success in predicting later child reports of anxiety (Bowen, Vitaro, Kerr & Pelletier, 1995; Mesman & Koot, 2000). As previous researchers have suggested, it is possible that stable behavioural inhibition in its extreme, as a measure of anxious vulnerability, is the best current measure of early child anxiety (Lonigan & Phillips, 2001; Oosterlaan, 2001; Turner et al., 1996). Alternatively, newer measures of child

anxiety based on behaviours (such as the Children's Behaviour Questionnaire), may more reliably predict future child self-reported symptoms of anxiety, although longitudinal studies are necessary to explore this.

Of the demographic variables related to child anxiety, six were related to parent ratings of child anxious behaviours. Of these five were related to parent factors (parent age, parent ethnicity, parent relationship, parent employment, nursery) and one to child factors (child ethnicity). Two demographic variables were related to parent and teacher ratings of inhibition (child age and single parenthood), and only one to teacher ratings of child anxious behaviours. The high number of parental factors relating to parent perceptions of child anxious behaviours highlights the importance of accounting for these factors when relying on parent reports. It also warrants further investigation as to why and how these parent factors might be related to ratings of child anxiety. Given that there are difficulties in relying on teachers as independent raters of child anxiety measures, future studies need to consider the addition of other measures of child anxiety. This is not to undervalue the importance of parent ratings, especially given that a high percentage of referrals to psychological services for anxiety problems in children come from parents rather than teachers, at preschool age.

Several child demographic factors were found to be related to child anxiety. Younger children were rated as more inhibited and more anxiously behaved by teachers. This may be due to the fact that younger children are likely to be newer to the nursery context and therefore potentially less settled in the nursery routine. However whilst parents rated younger children as more inhibited, parent ratings of child anxious

behaviours were not related to child age. This is unexpected given that parental attributions of child behaviours have been found to be closely tied to the developmental level of the child (Dix et al., 1986). In addition, non-White UK children were rated as more anxiously behaved by parents. Whilst this finding is interesting, caution must be used when interpreting this difference as the non-White UK group was constituted from a number of different ethnic backgrounds. However the results may suggest that being from a minority background is somehow related to increased child anxiety. Although there have been very few studies on the influence of child ethnicity, those that have included ethnicity in studies of older children have suggested that there are differences in anxiety levels across different ethnic groups (Beidel, Turner & Trager, 1994; Silverman, La Greca & Wasserstein, 1995). Further research is needed to explore the role of ethnicity in child anxiety.

A number of parent demographic factors were also related to child anxiety. Younger parents rated their children as having more anxious behaviours than older parents, and this did not appear to be due to higher parental anxiety in younger parents. Non-White UK parents were more likely to rate their children as having more anxious behaviours. There is a paucity of research examining the influence of ethnicity on parent ratings of child anxiety, although existing research seems to suggest that African American mothers described their children as less anxious than Euro-American mothers (Walton, Johnson & Algina, 1999).

In addition, children from two-parent families were more likely to be rated by both parents and teachers as more inhibited, than children from single parent families. Parent employment was also related to child anxiety, with parents who worked more

hours rating their children as having less anxious behaviours. Levels of child anxiety also differed significantly across the different nurseries. However the influence of the nursery that the child attended may well be more a factor of social class and related parent factors. The effect of these three demographic variables may also be more a factor of the amount of time parents spend with their children, which has been found to explain significant variability in father-mother discrepancies in rating children's internalising behaviour (Treutler & Epkins, 2003). These researchers suggested that an increase in the amount of time mothers spent with their children might account for why mothers were more aware of their children's internalising behaviour. Thus in the current study, it is possible that working parents and single parents are less likely to observe anxious behaviours in their children, due to the decreased amount of time they are able to spend with their children. Finally, parent relationship was found to be related to parent ratings of child anxious behaviours. However, given that the current sample of primary caregivers contained such a small proportion of fathers, it is not known whether they were representative of fathers as a whole. The role of parental relationship to the child needs further examination in future studies that specifically address the mother versus father relationship to the child, as well as exploring the role of the secondary caregiver.

The initial results also provided some information about the convergent validity of the Preschool Ambiguous Scenarios Questionnaire (PASQ), which was developed for the current study. Two subscales of the new measure – parent control of child anxious mood, and parent control of child anxious behaviour – were related to parental locus of control (PLOC). Thus, parents who expected to be less able to change their children's upset mood and avoidant behaviour, were more likely to have

an external locus of control. These associations were not surprising given that the two instruments measured similar concepts regarding parent control of child behaviour. The PLOC assesses whether parents feel they can have an impact on children's behaviour, whilst the two subscales of the PASQ examine parents' ability to change child mood and behaviour, specific to anxious responses.

None of the four subscales of the PASQ were related to perceived control of caregiving failure, as measured by the Parental Attribution Test (PAT). This might be due to the fact that the PAT is a more general measure of parent causal beliefs, which assesses parental cognitions about unsuccessful interactions with a neighbour's child. The PASQ examines parental cognitions about their own children, and it is possible that parental cognitions about their own children differ to those about children in general. The PLOC assesses parent attributions about both parenting in general and attributions specific to their own child, which may explain its association with both the PAT and PASQ. The convergent validity of the PAT and PLOC supports previous findings, which have found these, two measures to be related (Lovejoy et al., 1997).

4.2.2 Hypothesis 1 – More anxious parents will have more anxious children

Parental anxiety was found to be significantly related to only one measure of child anxiety – parent rating of children's anxious behaviours. Parental anxiety was not related to teachers' ratings of child anxious behaviours. These informant-rater differences may be due to the influence of parental anxiety on parent ratings. If this is true, the reasons for this may include a heightened awareness of anxious symptoms, a lower threshold for noticing child behaviours as problematic, or a

projection of their own symptoms (Briggs & Gowan et al., 1996). Alternatively, it is feasible that higher levels of child anxiety increase parental anxiety. Past research has suggested that parental anxiety is related to mother-teacher discrepancies in ratings of child internalising problems (Briggs-Gowan et al., 1996; Frick, Silverthorn & Evans, 1984; Jensen et al. 1988) and father-mother discrepancies (Treutler & Epkins, 2003). Other research studies have not found parent anxiety to account for the variance in mother-father differences (Krain & Kendall, 2000). Whilst the direction of causality cannot be established from this study it is likely that parental anxiety and child anxiety have a reciprocal role in influencing each other (Briggs-Gowan et al., 1996; Rapee, 2001).

The finding that parental anxiety was not related to child inhibition as rated by either parents or teachers, was surprising given past studies which have shown parental anxiety to be related to inhibition (Hirshfeld et al., 1992; Rosenbaum et al., 1991, 1992). The difference in these findings might be due to the measurement of inhibition. The current study used parent and teacher report of inhibition, based on children's responses to strangers. Previous studies that have linked parental anxiety with inhibition have tended to use observational assessment of child inhibition and researchers have used the extremes of inhibition rather than a continuous construct (Hirshfeld et al., 1992; Rosenbaum et al., 1991, 1992). Furthermore, in many previous studies, parental anxiety was more strongly associated with more *stable* behavioural inhibition, as measured over several years (Hirshfeld et al., 1992). It is possible therefore, that parental anxiety would be more related to stable inhibition in children, as observed in the top 10-20% of the distribution. In addition, review studies of behavioural inhibition have highlighted the methodological weaknesses of

previous studies that have found an association between inhibition and parental anxiety. In particular, these studies have been criticised regarding their limited assessment of parent psychopathology and their use of a cross-sectional design (Oosterlaan, 2001; Turner et al., 1996). Therefore, there is a need for the relationship between inhibition in preschool children and parental anxiety to be replicated using longitudinal design and reliable measures of parental anxiety.

Further analyses explored whether parental anxiety and depression had unique or shared effects on child anxiety. The findings suggested that neither parental anxiety nor parental depression was uniquely related to child anxiety, after controlling for the relationship with the other. This appeared to be due to the high covariance of parental anxiety and depression in the current sample of parents, as found in previous research on anxious adults (Brown & Barlow, 1992). Whilst in the current study the focus was on parental anxiety, the role of parental depression in potentially maintaining child anxiety also warrants further investigation.

4.2.3 Hypothesis 2 - Parental anxiety will be associated with parental cognitions

Hypothesis 2 was supported for three of the six parental cognitions. More anxious parents had a more external locus of control, in that they were more likely to believe they had less impact on their child's behaviour. This finding is not surprising given that anxious adults are known to have a lower perceived control of threat (Rapee et al., 1996) and a more external locus of control (Bell-Dolan & Wessler, 1994).

However, the results of the current study suggest that the impact of parental anxiety extends to their locus of control about their child's behaviour. This is important given that parent affective reactions to child behaviour are related to their assessment

of its cause (Dix et al., 1986). If anxious parents attribute children's behaviour to be controlled by factors outside of their control, this may have an effect on their response to their child's behaviour. For example, parents with an external locus of control have been found to show a more authoritarian control style (Janssens, 1994). This may help to explain the well-reported finding that parents of anxious children are more controlling of their child's behaviour. Parents with higher anxiety levels, who feel they have less impact on their child's behaviour, may be more likely to respond in an over-controlling manner towards their children.

More anxious parents also expected to be less able to change their child's upset mood and avoidant behaviour in ambiguous situations. Research has shown that anxious adults have lower estimates of their own ability to cope in threatening situations (Barlow, 1991; Beck & Emery, 1985; Rapee et al., 1996). The current findings may suggest that these anxious cognitions extend to parents' beliefs about how they will cope with their children in potentially anxiety-provoking situations. Alternatively, it may be that parents feel less able to change their child's anxious mood and behaviour due to their attributions about the causality of children's anxiety. Research assessing parental attributions of child anxious behaviours has shown that mothers are more likely to attribute child anxiety to dispositional factors (Rubin & Mills, 1990). Given that more anxious parents also have a more external locus of control, they may be more likely to attribute child behaviour to dispositional factors, and this may account for why they feel less able to change anxious child mood and behaviour.

Surprisingly, parental anxiety was not related to parent expectations that their child will respond with more upset mood and avoidant behaviour in ambiguous situations. This is contrary to past research that has shown that anxious adults are more likely to interpret ambiguous material as threatening (Butler & Mathew, 1983). It is also at odds with research on anxious mothers of older children, which suggests that mothers expect their children to be more anxious and avoidant in anxiety-provoking situations (Cobham et al., 1999). This might suggest that parent expectation of how their child will respond in these situations, is based more on child anxiety than parental anxiety, as discussed in section 4.2.4. Alternatively the differences in current findings to past research may be due to the younger age group of children, as parental attributions have been found to vary according to the child's developmental stage (Dix et al., 1986).

The finding that parental anxiety was not related to lower perceived control of caregiving failure is interesting given the importance of this construct in parental attributions of externalising problems (Bugental, 1993). The absence of a relation between parental anxiety and perceived control of caregiving failure in the current study, may be due to the measurement of this cognition, which is based on parent attributions of unsuccessful caregiving interactions with a *neighbour's* child. In contrast, parental anxiety is related to parental locus of control and two subscales of the Preschool Ambiguous Scenarios Questionnaire, which both examine parental attributions about their *own* child. This might suggest that anxious parental cognitions are based on factors specific to their own child or to specific situations. In line with this suggestion, when observed in a non-anxiety provoking situation with their children, anxious parents were not found to behave differently from non-

anxious controls, although they reported more distress when children engaged in risky play (Turner et al., 2003). Therefore, the impact of parental anxiety and their anxious cognitions on child anxiety may be situationally specific. Furthermore, the three parental cognitions that were related to parental anxiety, all assessed concepts of parent control of child responses or behaviour. This may suggest that control of parenting with one's own child is a cognition specifically influenced by parental anxiety.

4.2.4 Hypothesis 3 - Parental cognitions will be associated with child anxiety

Hypothesis 3 was supported for four of the six parental cognitions. Parents who expected their children to be more upset and avoidant in ambiguous situations were more likely to have children with higher levels of anxiety, as measured by parent ratings of anxious behaviours. The expectation from parents that a more anxious child will be more likely to react with more upset and avoidance in ambiguous situations replicates other findings. Parents of older anxious children also expect them to be more anxious, scared and upset, and to respond with more avoidance (Barrett et al., 1996b; Cobham et al., 1999; Kortlander et al., 1997; Levin, 1997). However, this is the only study to have used a preschool sample, thus suggesting that these expectations are present at an earlier age than previously found. Research on older anxious children has provided contradictory findings about whether these children are actually more anxious and avoidant. However, it seems likely that parent beliefs that their child will be more anxious when in ambiguous situations, will have an impact on the way parents respond to their children in these situations. For example, parents of anxious children may be more likely to either facilitate avoidance or pressure a child to face a feared situation under circumstances that are

too threatening, rather than find a middle ground. If this is true, then it would have implications about the need for family treatment to facilitate more helpful ways of managing to anxious responses.

In addition, parents who expected to be less able to change their child's upset mood and avoidant behaviour, had children who were more anxious, as measured by parent ratings of anxious behaviours. Past research has suggested that parents of anxious children expect their child to be less able to cope in anxiety-provoking situations (Kortlander et al., 1997; Levin, 1997), and the current study suggests that parents felt less able to change this. It is possible that this feeling of ineffectiveness reflects the difficulty that parents of anxious children have in managing their offspring's anxious response. As discussed above, this may be due to a lack of alternative ways of appraising the situation. Mothers of older anxious children have been found to be more likely to propose external attributions for low coping than mothers of control children (Kortlander et al., 1997). They were more likely to endorse task difficulty and anxiety for low coping, but for high coping were less likely to endorse ability and effort. Thus parents of more anxious children may have a more limited range of attributions regarding child coping in potentially anxiety-provoking situations. Furthermore, the way parents appraise anxious responses in their children, may have implications for how parents might react to anxious children in these situations. As mentioned previously, if parents of anxious children attribute this behaviour to disposition (Rubin & Mills, 1990), they may be more likely to step in and intervene in the situation, resulting in more over-controlling behaviours.

No relationship was found between the two other parental cognitions (parental locus of control and perceived control of caregiving failure) and child anxiety. Contrary to the hypothesis, parents with a more external locus of control were not found to rate their children as having more anxious behaviours. This is contrary to past research, which has suggested that parents who are high in external locus of control have been found to have children high in anxiety (Ollendick, 1979). It is possible that the differences in findings derive from the use of a general measure of locus of control in Ollendick's study as opposed to the current study, which used a measure of parental locus of control specific to attributions about parenting. Therefore, child anxiety may only be relevant to general locus of control rather than being relevant to specific attributions about parenting. This finding was surprising given that parental locus of control was related to parent control of child anxious mood and behaviour, which had been found to be related with child anxiety. Whilst parental locus of control was not related to child anxiety, it was found to be related to parental anxiety (see 4.2.3). This might suggest that locus of control with regard to parenting is linked more to parental anxiety than child anxiety.

Finally, contrary to the hypothesis, perceived control of caregiving failure was not related to child anxiety, as measured by parent ratings of anxious behaviours. In fact, perceived control of caregiving failure was not related to either parental anxiety or child anxiety. This might suggest that this construct is more specific to externalising problems rather than internalising problems. In summary, child anxiety appeared to be associated with parental cognitions specific to anxiety-provoking situations, but not for general parenting attributions. If the influence of parental cognitions on child

anxiety is specific to anxiety provoking situations, then it would be important to focus on these situations in parent-child interventions.

4.2.5 Hypothesis 4 - Parental cognitions will mediate the relationship between parental anxiety and child anxiety

The two parental cognitions that were associated with both parental anxiety and child anxiety, were examined as to whether they played a mediating role. However, parent expectations about their ability to change their child's upset mood and avoidant behaviours in ambiguous situations, were not found to mediate the relationship between parental anxiety and child anxiety, as measured by parent rating of anxious behaviours. However, parent expectation of their ability to change their child's anxious mood fulfilled three of the four tests conducted. This suggests that this cognition had some mediating properties, but this was not strong enough to be considered a mediating variable, possibly because other factors are more significant.

It is possible that parental cognitions have a stronger mediation effect on the relationship between parental anxiety and parent behaviour, which may subsequently influence child anxiety. Researchers have highlighted that it is important to assess parental actions as well as their beliefs (Kortlander et al., 1997). Alternatively parental cognitions may have a more direct effect on child cognitions, as parental cognitions or beliefs are important forces in the development of children's own beliefs and cognitions (Kortlander et al., 1997). For example, maternal depressive cognitions have been found to be related to child depressive cognitions (Garber & Flynn, 2001; Stark, Schmidt & Joiner, 1996). It is feasible that parental anxious cognitions influence the development of an anxious cognitive style in their children, which may contribute to the development of anxiety problems. However, it may not

be possible to identify these patterns in preschool children given the difficulties in assessing child cognitions at this age. Longer-term follow-ups might help identify any early impact of adult anxious cognitions on later child cognitions. Furthermore, parental cognitions may play a role other than that of a mediator in the relationship between parental and child anxiety, for example moderating the effect of an anxious vulnerability, as suggested in more interactional models of the development of childhood anxiety. Finally, there may be other parental cognitions which are more relevant to the development of child anxiety, such as the perception of threat.

4.2.6 Additional analyses

Parent control of child anxious *behaviour* was uniquely explained by parental anxiety, after controlling for child anxiety, as measured by both parent and teacher ratings. Parent control of child anxious *mood* was also uniquely explained by parental anxiety, except when parent ratings of child anxiety were used, when this cognition was uniquely explained by child anxiety instead. These results highlight that there are differences in the roles of parental anxiety and child anxiety according to the parental cognition being measured, and the rater of child anxiety. Parent control of their child's *avoidant behaviour* was noticeably more strongly related to parental anxiety, than parent control of their child's *upset mood* which was explained more by child anxiety. So, for example if a parent takes their child to a new nursery, and the child became upset, the parent's perception of their ability to change this anxious mood is influenced by how anxious the child is, over and above parental anxiety. However, if the child refused to leave the parent, their ability to change this anxious behaviour is influenced by their own level of anxiety, over and above the child's of anxiety.

The stronger relationship between parental anxiety and parent control of child anxious *behaviour* may be related to the importance of avoidance as a common coping strategy in anxiety. Anxious parents expect their child to choose an avoidant solution in anxiety-provoking situations. Similarly, parents of anxious children have been found to be more likely to encourage their child's use of avoidant behaviour in anxiety-provoking situations (Barrett et al., 1996a; Dadds et al., 1996). It is possible that the independent effect of parental anxiety on parents' ability to change their child's avoidant behaviour, is due to the way they appraise the situation. As previously mentioned, past findings suggest that parents of anxious children expect them to be less able to cope (Levin, 1997; Kortlander et al., 1997). In addition, mothers of anxious children have been found to have a more limited range of attributions for children's coping, than mothers of non-anxious children (Kortlander et al., 1997). Therefore, it may be that anxious parents perceive avoidance as the only way they can change their child's anxious behaviour, especially if anxiety is seen as temperamental or dispositional (Rubin & Mills, 1990). Alternatively, it may be more helpful to consider the role of parental anxiety during ambiguous or anxiety-provoking situations (i.e. state anxiety versus trait anxiety). Parents with higher levels of anxiety might feel more anxious themselves in these situations, which could impact on their ability to appraise the situation in another manner.

The results of the current study suggests that the role of parental anxiety in the development and maintenance of early childhood problems, may be more related to their perception of managing their child's anxious *behaviour*, rather than their expectations of child distress or perceptions of managing anxious mood. It is possible

that this may be an artefact of parent deficits in alternative ways of managing child anxious behaviour other than to encourage avoidance. Therefore, it would seem important in family treatment models of anxiety to consider parental cognitions about control of child behaviour and their potential low self-efficacy in using alternatives to avoidance.

4.3 LIMITATIONS OF STUDY

There are several potential limitations of the current study. First, regarding the sample, participants were more likely to be working parents, from a White UK ethnic background, and with children attending private nurseries. This may be consistent with respondents who tend to participate in research studies, but may have been increased by the length of the questionnaire, which required participants to have a good understanding of the English language. In addition, there were a large number of non-English speaking parents in the non-participant group who were unable to take part in the study. In fact, almost a third of non-participants spoke English as a second language and this may have impacted on their ability to take part in the research. This may have affected the response rate, which was lower than might be expected from a questionnaire-based study.

The study focused on children from two types of nursery provision, and it would be beneficial to also include children from other types of nursery provision e.g. nannies, nursery classes attached to school, playgroups. In addition, the study was aimed at the primary caregiver, and only a small number of fathers participated. Therefore, it is not clear whether these fathers are representative of fathers as a group.

Furthermore, it was not possible to examine the differential impact of mothers' and fathers' anxiety, or examine the role of the secondary caregiver in relation to their child's anxiety. A further concern with the sample is that teachers rated participants as less inhibited and having less anxious behaviours in comparison to non-participant children. Therefore it is possible that the sample had under-represented more anxious children. In a clinical sample of anxious children and their parents, there might be a stronger relationship between parental cognitions and child anxiety.

Second, with regard to the methodology, the study relied on parent reports and teacher reports as the measurement of child anxiety. As discussed in sections 4.2.1 and 4.2.2, there is less agreement about internalising problems than externalising problems in children (Herjanic & Reich, 1997; Kolko & Kazdin, 1993). In preschool children the difficulty of measuring child anxiety is exacerbated given that the reliability of child self-reports has not yet been proven. In addition, parent ratings of child anxiety may be influenced by parental anxiety, and this might account for differences in informant ratings of child anxiety (Briggs-Gowan et al., 1996; Frick, Silverthorn & Evans, 1984; Jensen et al. 1988; Treutler & Epkins, 2003). However, it seems likely that parental and child anxiety have a reciprocal role in influencing each other (Briggs-Gowan et al., 1996). In the current study parent and teacher differences in rating child anxious behaviours were highlighted, whilst there was more correlation between parent and teacher ratings of children's anxious temperament. Given that situational differences may account for parent and teacher ratings, it might be beneficial for future studies to consider the use of observational ratings of child anxiety across different situations. The failure of the measure of inhibition to be more significantly related to parental and child anxiety is noteworthy. In contrast to

many of the previous studies on inhibition, the current study used a questionnaire-based continuum of inhibition. It is possible observational methods which identify children who are stably inhibited over time, is a more accurate measure of child anxiety.

In addition, the use of questionnaires to measure parental cognitions may fail to acknowledge the role of sub-conscious processes or decisions, especially given the hypothetical basis of the ambiguous situations. However, whilst many past studies have used real-life threatening situations, some researchers have already demonstrated the use of vignettes in eliciting child anxious cognitions (Barrett et al., 1996a). An alternative would be to use more in-depth interview studies to gain more information about the nature of parental cognitions. Furthermore, the study was cross-sectional and thus the direction of causality can only be speculated, based on past research and theory. The use of observational studies of parents interacting with their young children in potentially anxiety-provoking situations might enable a more detailed understanding of the role of parental cognitions, especially in relation to parent behaviours. This would be especially helpful given that the relationship between parent anxiety, parental cognitions and child anxiety, is likely to be complex and reciprocal.

Third, statistically it must be considered that the large number of tests were conducted may have increased the risk of Type I error, and that positive results were generated by chance. However, in order to reduce that risk, analyses were planned in advance, according to hypotheses based on the literature.

4.4 IMPLICATIONS FOR FURTHER RESEARCH

Given that this is one of the few studies examining the role of parental cognitions in the relationship between parent and child anxiety in preschool children, it is essential that the current findings are replicated in future studies before conclusions are firmly drawn. Replication in a clinical sample would also provide further information about the nature of parental cognitions of more anxious children. The inclusion of a comparison group would assist the examination of the specificity of parental cognitions in relation to child anxiety compared to other disorders.

Several issues regarding the measurement of child anxiety in young children were raised by the present study. First, there appears to be little literature on the role of demographic factors (of both the parent and the child) on levels of child anxiety. Until the influence of these variables on child anxiety has been further investigated it is important for future studies to continue to control for these factors. Second, the influence of several parental factors on ratings of child anxiety needs further clarification, for example the role of ethnicity and parent relationship to the child. In addition, the study highlighted the differences in parent and teacher reports of young children's anxiety, and it seems that this may partly be due to cross-situational differences. Furthermore, it is likely that parental anxiety influences parent perceptions of anxious behaviour in children. Both these facts highlights the need for researchers to obtain information on children's symptoms of anxiety in different contexts, and to consider using other alternative measures such as observational assessments. Finally, there was higher concordance in parent and teacher ratings of inhibition, this measure was not associated with parental anxiety. Given that this is in

contrast to previous findings, it necessitates a need to replicate the relation of temperamental measures to parental anxiety, using reliable measures of both inhibition and parental anxiety, incorporated in a longitudinal design.

Regarding the assessment of parental cognitions, more studies are needed to further explore the role of parental cognitions in child anxiety. Compared to the area of externalising problems, there is a relative paucity of studies to date on the cognitions of parents about children's anxiety, particularly in relation to young children. Further studies are needed to examine what parental attributions are about the causes of anxiety problems in children, and whether the influence of anxious parental cognitions is specific to ambiguous and anxiety-provoking situations. Furthermore, it would be important to consider the role of the cognitions of the second primary caregiver.

The use of a longitudinal design in future studies examining the influence of parental cognitions, may help to establish whether early cognitions have an impact of later child cognitive style, and whether these contribute to development of or maintain current anxiety problems. In addition, it is important for researcher to examine the association between parental cognitions and parent behaviours. Several researchers have highlighted the need to use observational methods to examine parent-child interactions (e.g. Dadds, Rapee & Barrett, 1994), particularly in ambiguous or anxiety-provoking situations. Studies using longitudinal design would also help to clarify the direction of causality regarding the impact of parental cognitions on child anxiety. Finally, the current study did not evaluate the role of parental depression on parental cognitions, although it suggested that parental anxiety and depression had

shared effects on child anxiety. Both anxious and depressive symptomatology involve issues of control, a cognition which was found to be significant in the current study. Therefore, future studies need to further explore the influence of parental depression alongside parental anxiety, in their contribution to childhood anxiety problems.

4.5 IMPLICATIONS FOR CLINICAL PRACTICE

This study has provided support for the association between parental and child anxiety, and therefore highlights the importance of a family-based approach to treating child anxiety from preschool age. Involving parents more actively in treatment from an early age may help to prevent maladaptive patterns being established, and brief parent-child interventions at an early age may be more effective than attempting to treat more entrenched patterns of interaction. The advantages of early intervention include the young child's responsiveness to learning, both behaviourally and neurodevelopmentally (Hirshfeld-Becker & Biederman, 2002).

Past research has shown that the inclusion of parents in treatment of anxious children improves the efficacy of interventions (Barrett et al., 1996b; Cobham et al., 1998).

Regardless of causality, parents of more anxious children tend to have higher levels of anxiety themselves. Interventions incorporating a focus on parental anxiety, may lead to improved outcomes for anxious children as well as for their parents. Recently, researchers have developed early interventions for preschool children, and have proposed some basic principles for parent involvement in the treatment of young

children with anxiety problems, as the result of ongoing pilot studies (Hirshfeld-Becker & Biederman, 2002; Rapee, 2002).

The early results from one selective intervention programmes highlights that risk factors for the development of child anxiety can be targeted for modification with success (Rapee, (2002). A large sample of inhibited children were identified in preschool using maternal questionnaires, and were randomly allocated to an intervention or monitoring control group. A brief group intervention educated parents about child anxiety and provided techniques to help them enable their child to become more confident and outgoing. The results showed that children's inhibited temperament decreased over 12 months in both groups, but there was a significantly greater decrease in the intervention group. In addition, structured clinical interviews indicated a greater reduction in anxiety diagnoses in the children of parents who received the intervention. Therefore, by identifying those children at risk for becoming more anxious, early interventions may help to interrupt the cycle of anxious interaction between parents and children. It is possible that selective interventions could also identify parents with higher levels of anxiety and anxious cognitions, as the children of these parents may be higher risk for the development of anxiety problems.

Addressing parental cognitions in treatment regarding the cause of their child's anxiety, and their beliefs about how they react to ambiguous situations, may help to address factors that may be maintaining their children's difficulties. This will help to mitigate the effect of anxious parental cognitions on the maintenance of childhood anxiety.

In the current study, the cognitions of more anxious parents appeared to centre on a common theme of a lack of control of their child's anxious responses. It is possible that this derives from a deficit in parental knowledge of ways of managing child anxiety. By providing information for parents about the nature of anxiety and giving the basic skills to manage this, it may help to enhance parental ability to cope with their child's anxiety.

The findings of the current study suggest that some parental cognitions were related either to parental or child anxiety. However two cognitions, parent control of child anxious mood and of child anxious behaviour, were related to both parental anxiety and child anxiety. These may be the most important ones to focus on in parent-child treatment. However, the roles of parental and child anxiety in each of these cognitions was different, when assessing child anxiety as measured by parent ratings of child anxious behaviours. Child anxiety was uniquely related to parents' perception of their ability to change their child's *upset mood* in ambiguous situations, whereas parental anxiety was uniquely related to parents' perception of their ability to change their child's *avoidant behaviour*. Therefore, any attempt to modify these parental cognitions about their anxious child, need to consider whether the cognitions are based on parental anxiety or child anxiety. It appears that parent control of anxious behaviour is more related to parental anxiety, and this may be due to the lack of alternative appraisals to avoidance in anxiety-provoking situations. Thus parental involvement in treatment needs to focus on providing alternatives to facilitating avoidance, and increasing parental efficacy about how to manage anxious behaviour. This may help to modify parent views of their child as vulnerable and in need of protection or control.

A more interactional approach to understanding child anxiety may also be more palatable to parents who are seeking treatment for their anxious child. A context highlighting that parents may be reacting to an anxious vulnerability in their children, may provide a less blaming foundation for engaging parents in treatment. Targeting parental cognitions may also have implications for the engagement of parents in treatment. In their review, Morrissey-Kane and Prinz (1999) highlighted the importance of parental cognitions and attributions on three aspects of the child treatment process: help seeking, engagement and retention, and outcome. In particular, their review suggests that parents' beliefs about the cause of their children's problems, perceptions about their ability to handle such problems, and expectations about the ability of therapy to help them, all influence parent engagement. The current study has highlighted that parental cognitions about the ability to handle child anxious mood and behaviour, are uniquely related to child anxiety and parental anxiety.

4.6 CONCLUSIONS

The aim of the current study was to examine the role of parental cognitions in child anxiety. In particular this study has uniquely studied both child anxiety and parental anxiety, alongside parental cognitions about their preschool children. Whilst the results of the current study do not suggest that parental cognitions mediate the relationship between parent and child anxiety, all but one cognition were shown to be significantly related to either parent anxiety or child anxiety, or both. This suggests that parental cognitions are likely to play a significant role in maintaining childhood anxiety problems, although the exact nature of how their causal role and how they are related needs further exploration. Furthermore, two parental cognitions from the Preschool Ambiguous Scenarios Questionnaire, developed specifically for this study, were related to both parental and child anxiety. Parent expectations of their ability to change child anxious *mood* was found to be uniquely related to child anxiety, in contrast to parent expectation of changing child anxious *behaviour* which is uniquely related to parental anxiety. The results of the study have implications for the involvement of parents in interventions for child anxiety from as early as preschool age. They also highlight the importance of focusing on parental cognitions in treatment, particularly parent perceptions about their ability to change their child's anxious responses, to improve parental management of children's anxiety. The inclusion of a focus on parental cognitions may help to enhance parent engagement in treatment of their children, and mitigate the effects of risk factors for child anxiety. Future studies incorporating a longitudinal design would facilitate further understanding of the role of parental cognitions in child anxiety.

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APPENDIX A: Participant Ethnic Background (Parents)

Ethnic background	Number (total n=104)	%
White UK	68	67.3
Black British	3	3
Afro-Caribbean	3	3
African	4	4
Indian	5	5
Asian	4	4
European	8	8
Australian	3	3
Mixed race	3	3

APPENDIX B: Ethics Approval Letter

University College London Hospitals 
NHS Trust

The Joint UCL/UCLH Committees on the Ethics of
Human Research: Committee Alpha

Chairman:
Professor André McLean

Please address all correspondence to:
Marieta Odendaal
Research & Development Directorate
UCLH NHS Trust
1st floor, Vezey Strong Wing
112 Hampstead Road, LONDON NW1 2LT
Tel. 020 7380 9579 Fax 020 7380 9937
e-mail: jwona.nowicka@uclh.org

24 July 2002

Our ref: 02Alpha042

Dr Stephen Butler
Sub-Department of Clinical Health Psychology
UCL
Gower Street

Dear Dr Butler


Study No: 02/0119 (*Please quote in any correspondence*)
Title: The role of parent's thought processes in the relationship between parent and
child anxiety


Thank you very much for your interesting reply dated 7 July 2002.

From an Ethics Committee point of view the project has now been agreed and there are no
objections to this study going ahead.

Please note that it is important that you notify the Committee of any adverse events or changes (name
of investigator etc) relating to this project. You should also notify the Committee on completion of the
project, or indeed if the project is abandoned. **Please remember to quote the above number in any
correspondence.**

Yours sincerely



 Professor André McLean, BM BCh PhD FRC Path
Chairman

Cc: Rebecca Wheatcroft



UCL Hospitals is an NHS Trust incorporating the Eastman Dental Hospital, Elizabeth Garrett Anderson and
Obstetric Hospital, Hospital for Tropical Diseases, The Middlesex Hospital, National Hospital for Neurology &
Neurosurgery and University College Hospital.

APPENDIX C: Information sheet



Sub-Department of Clinical Health Psychology

UNIVERSITY COLLEGE LONDON

GOWER STREET LONDON WC1E 6BT

Tel: 07931 556142

INFORMATION SHEET FOR PARENTS (02/07/02 Version2)

Parents' thoughts and feelings about children's behaviour

Dear Parent,

Your child's nursery is cooperating with research looking at the behaviour of children aged 3-4 years old, which is being carried as part of my clinical psychology training. I would like to invite you to take part in this study.

What is the study about?

The study aims to find out about the relationship between children's behaviour, parents' feelings, and parents' thoughts about parenting and child behaviour. It is hoped the study will help inform ways of helping with children and families where difficulties are experienced.

What does it involve?

I would like to ask you to complete a questionnaire about the behaviour of your child. If you agree, your child's nursery teacher will also complete the same questionnaire. I would also like you to complete some other questionnaires, which ask about your feelings, and your thoughts on parenting and child behaviour. All data from questionnaires will be anonymous and treated as strictly confidential.

Why have I been chosen to take part?

I am asking the primary caregiver (the parent who does most caring of their child) and the nursery teacher of 100 children in Kent and London to complete these questionnaires. The parents of all children aged 3-4 years in your child's nursery will be asked to take part.

How long will it take?

The questionnaires will take about 30 minutes to complete. If you agree to take part in the study, the questionnaires will be handed out by the researcher when you drop off or collect your child from nursery. They can be completed in the nursery or in your own time. Vouchers for toys and equipment will be given to your child's nursery for your help in taking part in this study, in recompense for the time it takes you to complete the questionnaires.

If you are happy to take part, please complete the attached consent form and return it to your child's nursery teacher. You do not have to take part in the study if you do not want to. If you do decide to take part you may withdraw at any time without having to give a reason. If you have any queries or concerns, please feel free to contact me at the above address or telephone number.

Rebecca Wheatcroft

Trainee Clinical Psychologist

(supervised by Dr Cathy Creswell & Dr Stephen Butler, University College London)

All proposals for research using human subjects are reviewed by an ethics committee before they can proceed. This proposal was reviewed by the Joint UCL/UCLH Committees on the Ethics of Human Research.

APPENDIX D: Consent form

APPENDIX E: Children's Behaviour Questionnaire

Children's Behaviour Questionnaire (CBQ)

Below are some descriptions of children aged 5 years or younger. Please tick one of the three boxes to indicate whether the statement is 'Not true', 'Sometimes true', or 'Certainly true', for **your** child.

	<i>Not true</i>	<i>Sometimes true</i>	<i>Certainly true</i>
Insists on doing something over and over, so that it interferes with day to day life			
Strongly refuses or resists sleeping alone			
Many fears, easily scared			
Tends to check that some things are done exactly right			
Many worries, often seems worried			
Fussy about keeping his/her hands clean			
Often unhappy, down-hearted or tearful			
Often complains of headaches, stomach aches or sickness			
Fussy, over particular			
Is often extremely upset or distressed when parent leaves			
Is extremely afraid of day to day things such as the dark, water, animals, blood			
Tends to be shy or timid			
Cries easily			
Takes a long time to warm to strangers			
Independent, confident child			
Asks for reassurance that s/he is OK			

APPENDIX F: Parental Inhibition Scale

Confidential

Parental Inhibition Scale (BI)

Now, please rate how much the following statements are true of your child, by circling one of the numbers on the scale. For example, if the statement is sometimes true of the child, circle the number '3'.

	<i>Never</i>			<i>Some- times</i>			<i>Always</i>
When my child meets unknown adults s/he needs a long time to warm up	0	1	2	3	4	5	6
When my child meets unknown children s/he needs a long time to warm up	0	1	2	3	4	5	6
My child is shy towards unknown adults	0	1	2	3	4	5	6
My child is shy towards unknown children	0	1	2	3	4	5	6
My child is somewhat withdrawn toward unknown adults	0	1	2	3	4	5	6
My child is somewhat withdrawn toward unknown children	0	1	2	3	4	5	6
My child easily approaches unknown adults	0	1	2	3	4	5	6
My child easily approaches unknown children	0	1	2	3	4	5	6

APPENDIX G: Parental Locus of Control Scale

Confidential

Parental Locus of Control Scale (PLOC)

Below are some statements about parenting your child. Please rate how much you agree with each statement, by circling the appropriate number alongside. For example, if you strongly agree with a statement, circle the number '5'.

	<i>Strongly Disagree</i>			<i>Strongly Agree</i>	
	1	2	3	4	5
1. What I do has little effect on my child's behaviour	1	2	3	4	5
2. When something goes wrong between me and my child, there is little I can do to correct it	1	2	3	4	5
3. Parents should address problems with their children because ignoring them won't make them go away	1	2	3	4	5
4. If your child tantrums no matter what you try, you might as well give up	1	2	3	4	5
5. My child usually ends up getting his/her own way, so why try	1	2	3	4	5
6. No matter how hard a parent tries, some children will never learn to understand	1	2	3	4	5
7. I am often able to predict my child's behaviour in situations	1	2	3	4	5
8. It is not always wise to expect too much from my child because many things turn out to be a matter of good or bad luck anyway	1	2	3	4	5
9. When my child gets angry, I can usually deal with him/her if I stay calm	1	2	3	4	5
10. When I set expectations for my child, I am almost certain that I can help him/her meet them	1	2	3	4	5
11. There is no such thing as good or bad children – just good or bad parents	1	2	3	4	5
12. When my child is well-behaved, it is because he/she is responding to my efforts	1	2	3	4	5
13. Parents who can't get their children to listen to them, don't understand how to get along with their children	1	2	3	4	5
14. My child's behaviour problems are no one's fault but my own	1	2	3	4	5
15. Capable people who fail to become good parents have not followed through on their opportunities	1	2	3	4	5
16. Children's behaviour problems are often due to mistakes their parents made	1	2	3	4	5
17. Parents whose children make them feel helpless just aren't using the best parenting techniques	1	2	3	4	5
18. Most children's behaviour problems would not have developed if their parents had had better parenting skills	1	2	3	4	5
19. I am responsible for my child's behaviour	1	2	3	4	5
20. The misfortunes and successes I have had as a parent are the direct result of my own behaviour	1	2	3	4	5
21. My life is chiefly controlled by my child	1	2	3	4	5
22. My child does not control my life	1	2	3	4	5
23. My child influences the number of friends I have	1	2	3	4	5
24. I feel like what happens to me in my life is mostly determined by my child	1	2	3	4	5
25. It is easy for me to avoid and function independently of my child's attempts to have control over me	1	2	3	4	5
26. When I make a mistake with my child I am usually able to correct it	1	2	3	4	5
27. Even if your child frequently tantrums, a parent should not give up	1	2	3	4	5
28. Being a good parent often depends on being lucky enough to have a good child	1	2	3	4	5
29. I'm just one of those lucky parents who happened to have a good child	1	2	3	4	5

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	<i>Strongly Disagree</i>					<i>Strongly Agree</i>	
	1	2	3	4	5		
30. I have often found that when it comes to my children, what is going to happen will happen	1	2	3	4	5		
31. Fate was kind to me – if I had had a bad child I don't know what I would have done	1	2	3	4	5		
32. Success in dealing with children seems to be more a matter of the child's moods and feelings at the time rather than one's own actions	1	2	3	4	5		
33. Neither my child nor myself is responsible for his/her behaviour	1	2	3	4	5		
34. In order to have my plans work, I make sure that they fit in with the desires of my child	1	2	3	4	5		
35. Most parents don't realise the extent to which their children turn out is influenced by accidental happenings	1	2	3	4	5		
36. Heredity plays the major role in determining a child's personality	1	2	3	4	5		
37. Without the right breaks one cannot be an effective parent	1	2	3	4	5		
38. I always feel in control when it comes to my child	1	2	3	4	5		
39. My child's behaviour is sometimes more than I can handle	1	2	3	4	5		
40. Sometimes I feel that my child's behaviour is hopeless	1	2	3	4	5		
41. It is often easier to let my child have his/her own way than to put up with a tantrum	1	2	3	4	5		
42. I find that sometimes my child can get me to do things that I really did not want to do	1	2	3	4	5		
43. My child often behaves in a manner very different from the way I would want him/her to behave	1	2	3	4	5		
44. Sometimes when I'm tired I let my children do things differently from the way I would want him/her to behave	1	2	3	4	5		
45. Sometimes I feel that I do not have enough control over the direction my child's life is taking	1	2	3	4	5		
46. I allow my child to get away with things	1	2	3	4	5		
47. It is not difficult to change my child's mind about something	1	2	3	4	5		

APPENDIX H: Parental Attribution Test

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Parent Attribution Test (PAT)

In this questionnaire, we want to know how important you believe different factors are in how parents get on with children in different situations. Please circle how important the factors are.

Example: If you were teaching a child an outdoor game and he or she caught on very quickly, how important do you believe these possible causes would be?

	Not at all important					Very important	
	1	2	3	4	5	6	7
a) how good he/she is at sports in general	1	2	3	4	5	6	7
b) how good a teacher you are	1	2	3	4	5	6	7
b) how easy the game is	1	2	3	4	5	6	7

1. SUPPOSE YOU TOOK CARE OF A NEIGHBOUR'S CHILD ONE AFTERNOON, AND THE TWO OF YOU HAD A REALLY GOOD TIME TOGETHER. HOW IMPORTANT DO YOU BELIEVE THE FOLLOWING FACTORS WOULD BE AS REASONS FOR THIS?

	Not at all important					Very important	
	1	2	3	4	5	6	7
a) whether or not this was a "good day" for the child, e.g., whether there was a TV show s/he particularly wanted to see (or some other special thing to do).	1	2	3	4	5	6	7
b) how lucky you were in just having everything work out well.	1	2	3	4	5	6	7
c) how much the child enjoys being with adults.	1	2	3	4	5	6	7
d) how pleasant a character the child had.	1	2	3	4	5	6	7
e) how well the neighbor had set things up for you in advance.	1	2	3	4	5	6	7
f) whether the child was rested.	1	2	3	4	5	6	7

The next question asks about BAD experiences with children. Reasons for getting on well with children are not necessarily the same as those for not getting on with them. So please think about this situation without referring to how you answered the first question.

2. SUPPOSE YOU TOOK CARE OF A NEIGHBOUR'S CHILD ONE AFTERNOON, AND THE TWO OF YOU DID NOT GET ALONG WELL. HOW IMPORTANT DO YOU BELIEVE THE FOLLOWING FACTORS WOULD BE AS POSSIBLE REASONS FOR THIS?

	Not at all important					Very important	
	1	2	3	4	5	6	7
a) how unpleasant a character the child had.	1	2	3	4	5	6	7
b) whether the child was tired or not feeling well.	1	2	3	4	5	6	7
c) whether or not you really enjoy children that much.	1	2	3	4	5	6	7
d) whether or not this was a bad day for the child, e.g., whether there was nothing good on TV, whether it was raining and he or she couldn't go outside.	1	2	3	4	5	6	7
e) whether you used the wrong approach for this child.	1	2	3	4	5	6	7
f) the extent to which the child was stubborn and resisted your efforts.	1	2	3	4	5	6	7
g) how you get along with children in general.	1	2	3	4	5	6	7
h) what kind of mood you were in that day.	1	2	3	4	5	6	7
i) how hungry the child was.	1	2	3	4	5	6	7
j) how little effort the child made to take an interest in what you said or did.	1	2	3	4	5	6	7
k) the extent to which you were not feeling well that day.	1	2	3	4	5	6	7
l) whether or not this was a bad day for you in general.	1	2	3	4	5	6	7

APPENDIX I: Pilot Questionnaire

PILOT QUESTIONNAIRE

Parents and clinical psychologists

For each situation, please rate your agreement with the four questions (1-4) by circling one of the numbers on the right. For example, if you think social situation 1 is not relevant to a child aged 3-4 years, you would circle '0'.

<u>Social Situation 1.</u> <i>You take your child to a children's party and there is a clown there, who asks your child to come up from the audience and help them.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'hiding away' vs. 'rushing to join in' a response that an anxious child might make?	0	1	2
<u>Social Situation 2.</u> <i>At a summer fete you are at, there is a bouncy castle with other children on it.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'refusing to go on it' vs. 'running and jumping on it' a response that an anxious child might make?	0	1	2
<u>Social Situation 3.</u> <i>You are in a supermarket with your child. They turn around and can't see you.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'standing there and crying' vs. 'looking for you' a response that an anxious child might make?	0	1	2
<u>Social Situation 4.</u> <i>You are at Disney world and a big Mickey Mouse character comes up to your child and holds out a sticker for them.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'refusing to take the sticker and hiding behind your legs' vs. 'grabbing it excitedly' a response that an anxious child might make?	0	1	2
<u>Social Situation 5.</u> <i>You bump into a long lost school friend who has never met your child. They come up to you child, says hello to them and asks what their name is.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'saying nothing at all and looking away' vs. 'saying hello back and telling them their name' a response that			

an anxious child might make?	0	1	2
<u>Social Situation 6.</u> <i>On holiday there is a big group of older children playing together who ask your child if they want to play with them.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'running back to sit with you' vs. 'going off and joining in their game with them' a response that an anxious child might make?	0	1	2
<u>Social Situation 7.</u> <i>You have a new babysitter for the night.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'not wanting to meet them and staying in bed' vs. 'asking them to read a story' a response that an anxious child might make?	0	1	2
<u>Social Situation 8.</u> <i>Your child's nursery teacher asks them to take part in a nursery school show.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'asking not to be involved' vs. 'asking to play the lead role' a response that an anxious child might make?	0	1	2
<u>Social Situation 9.</u> <i>You are in a sweet shop buying some sweets for your child and you give them 50p to pay the shopkeeper</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'refusing to pay the shopkeeper' vs. 'giving the shopkeeper 50p and waiting for the change' a response that an anxious child might make?	0	1	2
<u>Social Situation 10.</u> <i>You take your child to the doctors to have an injection given.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'hang on to your hand and look away' vs. 'watching the injection and asking for a plaster' a response that an anxious child might make?	0	1	2
<u>Physical Situation 1.</u> <i>Your child stays overnight at your friend's house one night whilst you are out at a party.</i>	No	Somewhat	Yes

(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is <i>'finding it difficult to sleep in a new place and have to go downstairs'</i> vs. <i>'play in bed for a bit then fall asleep'</i> a response that an anxious child might make?	0	1	2
<u>Physical Situation 2.</u> <i>You are walking in the park and a big dog comes towards your child</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is <i>'freezing'</i> vs. <i>'stroking the dog then carrying on walking'</i> a response that an anxious child might make?	0	1	2
<u>Physical Situation 3.</u> <i>At a farm your child is leaning over the fence eating an apple, when a nearby horse becomes interested in the apple.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is <i>'moving back from the fence'</i> vs. <i>'holding out the apple for the horse'</i> a response that an anxious child might make?	0	1	2
<u>Physical Situation 4.</u> <i>Your child is playing in an adventure playground when they fall over.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is <i>'quickly running over to you to show you their graze'</i> vs. <i>'getting up and carrying on playing'</i> a response that an anxious child might make?	0	1	2
<u>Physical Situation 5.</u> <i>Your child says they have a tummy ache just before arriving at nursery.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is <i>'telling the teacher and remaining standing with you'</i> vs. <i>'forgetting about it when they got to nursery and running to play with their friends'</i> a response that an anxious child might make?	0	1	2
<u>Physical Situation 6.</u> <i>Your child is paddling in the sea when a big wave goes over them</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is <i>'panicking and running out of the water'</i> vs. <i>'laughing and splashing in the surf'</i> a response that an anxious child might make?	0	1	2

<u>Physical Situation 7.</u> <i>You take your child skiing for the first time and they bump into another child and fall over on the slopes</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'not wanting to carry on skiing' vs. 'getting up and carrying on' a response that an anxious child might make?	0	1	2
<u>Physical Situation 8.</u> <i>You take you child skiing and accidentally find yourself at the top of a slope that is extremely steep.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'refusing to ski down and insisting on being carried' vs. 'giving it a go, falling down a few times along the way' a response that an anxious child might make?	0	1	2
<u>Physical Situation 9.</u> <i>You go out with your child to meet a friend for lunch</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'eating nothing and just playing with their food' vs. 'eating up their food not noticing the friend' a response that an anxious child might make?	0	1	2
<u>Physical Situation 10.</u> <i>At a park your child is queuing for the slide when some older children push in.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'saying nothing to them and going off to play on the swings instead' vs. 'waiting in the queue for their turn' a response that an anxious child might make?	0	1	2
<u>Physical Situation 11.</u> <i>You have a fireworks display at home for the first time and one of the fireworks goes off nearby creating a loud bang.</i>	No	Somewhat	Yes
(1) Is this situation relevant to a child aged 3-4 years?	0	1	2
(2) Would this situation make a child anxious?	0	1	2
(3) Is 'covering their ears and running into the house' vs. 'clapping, laughing and asking for more' a response that an anxious child might make?	0	1	2

Any general comments about the questionnaire:

Any suggestions for other situations that might be anxiety-provoking:

Any suggestions for more anxious responses:

**APPENDIX J: Preschool Ambiguous Scenarios Questionnaire (PASQ)
– final version**

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Preschool Ambiguous Scenarios Questionnaire

Below are some situations that your child might find him/herself in, followed by questions about how you think your child would respond in the situation and whether you think you could change their reaction. Each situation has four questions (a-d), please answer all questions. For each question, rate your answer on the 7-point scale on the right, by circling the corresponding number. Some of the responses may not fit your child exactly, but please choose the number which *best fits*.

Situation 1. You take your child to a children's party and there is a clown there, who asks your child to come up from the audience and help them.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Rush to join in						Hide away
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did hide away, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 2. You are walking in the park and a big dog comes up to your child							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Want to stroke the dog						Freeze
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did freeze, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 3. It is your child's first day at a new nursery and you drop them off.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Go off to play with the new toys and children						Refuse to leave your side and not want you to go
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did refuse to leave your side and not want you to go, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

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Situation 4. You have a fireworks display at home for the first time and one of the fireworks goes off nearby creating a loud bang.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Become excited and want to see more						Cover their ears and run into the house
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did cover their ears and run into the house, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 5. You are in a supermarket with your child. They turn around and can't see you.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Stand there and cry						Look for you
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did stand there and cry, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 6. You take your child to the doctors to have an injection given							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Watch the injection and ask for a plaster						Cling onto you and scream
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child clung onto you and screamed, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 7. You and your child are paddling in the sea when a wave goes over your child.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Laugh and splash in the surf						Run out of the water and refuse to go back in
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did run out of the water and refuse to go back in, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

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Situation 8. You are at a theme park and a person dressed as Mickey Mouse comes up to your child and holds out a sticker for them.

a) How upset would your child be?	0	1	2	3	4	5	6
	Not at all upset						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Grab it excitedly						Refuse to take the sticker and hide behind your legs
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did refuse to take the sticker and hide behind your legs, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 9. You bump into a long lost school friend who has never met your child. They come up to you child, says hello to them and asks what their name is.

a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Say hello back and tell the friend their name						Say nothing at all and hide behind you
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did say nothing at all and hid behind you, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 10. On a trip to the farm your child is eating an apple, when a nearby horse becomes interested in the apple

a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Want to feed the horse						Move away from the horse
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did move back from the horse, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 11. On holiday there is a big group of older children playing together who ask your child if s/he wants to play with them.

a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Go off and join in their game with them						Run back to sit with you
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did run back to sit with you, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

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Situation 12. You take your child into hospital for the first time to visit an ill relative.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Talk to the relative and explore things						Go quiet and not leave your side
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did go quiet and not leave your side, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 13. You have a new babysitter for the night.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Ask them to read a story						Not want you to go and cry
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did not want you to go and cried, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

Situation 14. Your child's nursery teacher asks them to take part in a nursery school show.							
a) How upset would your child be?	0	1	2	3	4	5	6
	Delighted						Extremely upset
b) What would your child do?	0	1	2	3	4	5	6
	Try to play the lead role						Try not to be involved
c) If your child was upset by this situation, how likely is it that you could change their mood?	0	1	2	3	4	5	6
	Not at all likely						Very likely
d) If your child did try not to be involved, how likely is it that you could change their behaviour?	0	1	2	3	4	5	6
	Not at all likely						Very likely

**APPENDIX K: Reliability Analyses for the Preschool Ambiguous Scenarios
Questionnaire (n=104)**

Item	Alpha if item deleted	Item	Alpha if item deleted
1a	.67	1b	.67
2a	.73	2b	.73
3a	.71	3b	.68
4a	.70	4b	.70
5a	.72	5b	.72
6a	.71	6b	.70
7a	.71	7b	.70
8a	.66	8b	.68
9a	.69	9b	.69
10a	.69	10b	.70
11a	.70	11b	.69
12a	.71	12b	.69
13a	.69	13b	.66
14a	.77	14b	.69
Alpha	.72	Alpha	.71

Item	Alpha if item deleted	Item	Alpha if item deleted
1c	.90	1d	.91
2c	.89	2d	.91
3c	.90	3d	.91
4c	.89	4d	.91
5c	.90	5d	.92
6c	.90	6d	.91
7c	.89	7d	.91
8c	.89	8d	.90
9c	.89	9d	.91
10c	.89	10d	.91
11c	.89	11d	.91
12c	.89	12d	.91
13c	.90	13d	.91
14c	.89	14d	.90
Alpha	.90	Alpha	.91

APPENDIX L: Comparison of child anxiety scores to data from the measures

Measure of child anxiety	Mean scores (sd)		
	<i>Eley et al (in press)</i>	<i>Current study n=104 Parent ratings</i>	<i>Current study n=104 Teacher ratings</i>
General distress	1.42 (1.43)	1.14 (1.33)	0.82 (1.11)
Separation anxiety	1.59 (1.29)	1.72 (1.28)	0.49 (0.76)
Fear	0.89 (0.98)	0.93 (1.06)	0.35 (0.76)
Obsessive compulsive behaviours	2.55 (1.73)	2.39 (1.88)	0.99 (1.55)
Shy/inhibited	2.25 (1.48)	1.81(1.46)	2.01(1.53)
	<i>Asendorpf (1990) Age 3 years</i>	<i>Current study Age 3-5 years Parent ratings</i>	<i>Current study Age 3-5 years Teacher ratings</i>
BI total score	3.33 (1.10)	2.80 (1.10)	2.27 (1.38)