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SOCIAL PHOBIA IN CHILDREN AND ADOLESCENTS: THE ROLE OF INTERPRETATIVE BIASES IN MAINTAINING SOCIAL ANXIETY

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Thesis Abstract

The literature review provides an introduction into social phobia in children and adolescents. Whilst our understanding of social phobia in adults is becoming increasingly complex, research into the disorder and how it presents in childhood is far less developed. The review starts with a description of the disorder and its clinical presentation. In the absence of a specific model to explain the maintenance of the disorder in childhood the review then investigates whether adult models can be usefully applied to children and adolescents. Based upon the empirical literature suggestions for how the models may be adapted for a younger population are made.

Cognitive models of social anxiety propose that two situation-specific interpretative biases play a pivotal role in maintaining social anxiety (Clark and Well, 1995; Rapee and Heimberg, 1997). Namely, individuals with social anxiety are more likely than non-socially anxious individuals to interpret ambiguous social situations negatively and to interpret mildly negative social events in a catastrophic fashion (Beck, Emery and Greenberg, 1985). Within the adult literature these biases are supported (Stopa and Clark, 2000), however, the operation of these interpretative biases are yet to be confirmed in children and adolescents. The empirical paper reports the findings of a study conducted to determine whether social anxiety in adolescents is associated with the interpretative biases outlined above. The results suggest that similar cognitive processes underlie the disorder in adolescents and in adults and help to justify the downward extension of cognitive models to a younger population.

Contents

Literature Review

Social Phobia in Children and Adolescents: A Review

Contents

Empirical Paper

Interpretative biases in social anxiety: Does social anxiety influence the way in which adolescents interpret ambiguous and mildly negative social events?

List of Tables

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Literature Review

Social Phobia in Children and Adolescents: A Review

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Abstract

The aim of this paper is review the current literature investigating social anxiety in children and adolescents. The review starts by describing the clinical presentation of the disorder in childhood and highlights the similarities and differences between social anxiety in children, adolescents, and adults. The central focus of the review then turns to the cognitive biases that trigger and maintain feelings of social anxiety. Developmental factors relating to anxious thoughts in childhood are considered before describing cognitive models of social phobia that attempt to outline how the disorder is maintained (Clark and Wells, 1995; Rapee and Heimberg, 1997). As no models have been specifically developed to explain the maintenance of social anxiety in childhood the appropriateness of extending these models to children is explored. Particular attention is paid to research that investigates whether interpretation biases are related to social anxiety in childhood. Suggestions for how existing models could be modified to account for the disorder in children and adolescents are then proposed. The review concludes with a brief summary of treatment outcome studies detailing the application of cognitive techniques to children and adolescents with social phobia.

Social Phobia in Children and Adolescents: A Review

Introduction

This review aims to provide an overview of what is known about social anxiety in children and adolescents. Social phobia was only included within the Diagnostic Statistical Manual of Mental Disorders as a separate anxiety disorder in 1980 (American Psychiatric Association, 1980 [DSM-III]) and had been referred to as the "neglected anxiety disorder" (Liebowitz, Gorman, Fyer, and Klein, 1985). Since then considerable research investigating social anxiety in adults, particularly the cognitive processes responsible for maintaining the disorder, has been conducted. However, much less is known about the disorder in childhood despite research which indicates that social anxiety commonly has its onset in adolescence (Schneier, Johnson, Hornig, Liebowitz and Weissman, 1992).

Adult mental health problems have been frequently associated with social maladjustment in childhood (Cowan, Patterson, Babigan, Izzo and Trost, 1973). More specifically, social anxiety disorder in childhood is predictive of anxiety in adulthood (Beidel and Turner, 1998) and can therefore have long-term implications for sufferers. It is likely that the earlier onset of the disorder, the more detrimental its impact upon development and prognosis, especially if it interferes with the formation of close friendships as they moderate stress and protect children against future psychopathology (La Greca, Silverman, Vernberg and Prinstein, 1996). Social anxiety may also disrupt schooling, up to 30% of school refusers do so because of social fears (Last, Hersen, Kazdin, Finkelstein, and Strauss, 1991)

Interpretative biases are thought to trigger and perpetuate social anxiety. Thus, a specific aim of the review is to examine the cognitive processes that are involved in maintaining the disorder in children and adolescents. The clinical presentation of social anxiety in childhood will be described and similarities and differences in the presentation of the disorder in children, adolescents and adults will be highlighted. A discussion of the developmental processes involved in social anxiety will then follow. Cognitive models of social anxiety developed to account for the maintenance of the disorder in adulthood are subsequently described before determining whether these models can be usefully applied to children. The review concludes with a summary of treatment outcome studies detailing the application of cognitive techniques to children and adolescents with social phobia.

Definition of terms

Since the inclusion of social phobia within diagnostic manuals there has been debate about how the disorder should be described. It has been suggested that the term "social anxiety disorder" may more appropriately reflect the often general and pervasive nature of the disorder than the term "social phobia" (Widiger, 2001). However, as a consensus about the use of these labels has not yet been reached, the terms social phobia and social anxiety disorder will be used interchangeably within this review.

Diagnostic criteria

Social phobia is described within DSM-IV criteria (American Psychiatric [APA] Association, 1994, p.164) as a "marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to

possible scrutiny from others". Individuals with social anxiety fear that they will act in a humiliating or embarrassing way and will fail to portray a desirable impression. Exposure to feared situations almost invariably provokes excessive feelings of anxiety and such situations are therefore avoided or endured with intense distress. Two subtypes of social phobia are described, the specific subtype where one or very few social situations are feared and the generalised subtype where fear is triggered by a wide range of social situations. The latter is most common in children (Beidel, Turner and Morris, 1999).

Developmental considerations are included within the diagnostic criteria. Symptoms of social phobia have to be present for at least six months before children can be diagnosed with the disorder because mild, transient, social anxiety is common amongst children and adolescents (Essau, Conradt, and Peterman, 1999). Children must also experience anxiety during both interactions with peers and adults. However, unlike adults children do not have to recognise that their fear is excessive due to their incomplete cognitive development (APA, 1994). Finally, to rule out other diagnoses that may present similarly in childhood, such as pervasive developmental disorder or schizotypal disorder, children must be able to demonstrate age appropriate relationships with familiar people (Schniering, Hudson and Rapee, 2000).

Phenomenology

Social anxiety is proposed to lie upon a continuum (Rapee and Heimberg, 1997) ranging from no anxiety to shyness to high, maladaptive levels of anxiety within social situations. Whilst a moderate level of social anxiety is considered normal in

certain socially evaluative situations, such as giving a presentation or during a job interview, socially anxious individuals experience debilitating anxiety which can significantly impair everyday functioning.

Socially anxious children can be differentiated from non-anxious children by the frequency with which social anxiety is triggered, the level of distress they experience, and the coping behaviours they exhibit. Compared with non-anxious controls and children diagnosed with overanxious disorder, socially anxious children are significantly more likely to report anxiety in social situations and demonstrate larger physiological responses whilst performing a social task (Beidel, 1991). In addition, socially anxious children are more likely than non-socially anxious children to use negative coping strategies such as crying or avoidance (Essau et al., 1999). Thus, the research indicates that socially anxious and non-anxious children respond differently to social and performance situations. Similar findings have also been documented within the adult literature (Turner, Beidel and Larkin, 1986).

Feared situations

A wide range of social situations can trigger anxiety in children and adolescents. Fears within the school setting (Strauss and Last, 1993), unstructured peer activities (Beidel et al., 1999) and having to perform actions in front of others (Essau et al., 1999) are the most commonly feared situations. Children with social phobia often fear public speaking, eating, drinking, and writing in front of others, blushing, attending parties, talking to others, using public toilets and speaking to authority figures (Beidel and Morris, 1995; Essau et al., 1999; Strauss and Last, 1993). The situations that trigger anxiety have been divided into four domains: formal speaking

and interactions, informal speaking and interactions, observation by others and assertion (Hoffman, et al. 1999). As nearly 50% of adolescents with social phobia fear situations within each domain, social anxiety can have a broad impact upon everyday functioning.

Anxious symptoms

When anxious, socially phobic children present with a range of somatic symptoms typically associated with anxiety such as, heart palpitations, shakiness, flushes/chills, nausea, dizziness, headache, shortness of breath (Beidel, Christ and Long, 1991) and blushing (Essau et al., 1999). Behavioural manifestations include stuttering, poor eye contact, mumbling and trembling voice (Albano, 1995). Adolescents also report feelings of shame and impairments in their schoolwork and social activities (Essau et al., 1999). In severe cases, children may refuse to go to school or display selective mutism (Beidel, et al., 1999), they might also be mistakenly perceived as oppositional because they refuse to do what they are told (Ollendick and Hirshfeld-Becker, 2002). A number of anxious cognitions, such as fear that something terrible/embarrassing is going to happen, fear of going crazy, of losing control or of being judged as stupid or weak (Beidel et al., 1991; Essau et al., 1999) have also been reported.

In sum, the evidence to date suggests that there are many similarities in the way in which social anxiety disorder presents in children and adults with respect to the symptoms experienced and the situations that are feared (Beidel and Randall, 1994). However, whilst adults most commonly fear formal situations children most commonly fear informal speaking situations, possibly because of the frequency they

are encountered (Hoffman et al. 1999) or the perceived cost that failure within these situations would have. Despite this, as children get older the presentation of social anxiety increasingly resembles that of adults.

Prevalence

There is much variation between the prevalence rates reported within the literature. Epidemiological studies using DSM-III-R criteria estimate that between 1 (Anderson, 1994), and 4% (Beidel, et al., 1999) of children within the general population suffer with social anxiety at any one time. Within a large community sample of 12-17 year-olds 1.6% met diagnostic criteria (Essau et al., 1999). In contrast up to 15% of children (aged 5-18 years old) referred to anxiety clinics met diagnostic criteria for social phobia and 32% reported a lifetime history of it (Last, Perrin, Hersen, and Kazdin, 1992).

The research indicates that the diagnostic criteria employed can exert a considerable impact upon the prevalence rates obtained. By applying both DSM-IV and ICD-10 (International Classification of Diseases 10th Edition (ICD-10), World Health Organisation, 1992) criteria to the same sample of adolescents prevalence rates of 1.7 (Fergusson, Horwood and Lynskey, 1993) and 5.5% (Canals, Domenech, Carbajo, and Blade, 1997) were obtained. Furthermore, the abandonment of avoidant disorder within DSM-IV was proposed to have increased the rate of social phobia in a clinical sample from 18 to 40% (Kendall and Warman, 1997). Interestingly, parents have reported both higher (Verhulst, van der Ende, Ferdinand and Jasisus, 1997) and lower prevalence rates than their adolescent children (Fergusson et al., 1993). Given the inconsistencies between the figures reported it appears that prevalence rates vary

according to the characteristics of the sample, the respondent and the diagnostic criteria adopted.

Gender

Social anxiety has been reported to be more prevalent amongst female than male children and adolescents (Anderson, Williams, McGee and Silva, 1987; Inderbitzen and Hope, 1995). A large community sample of adolescents and young adults (aged 14-24) revealed a lifetime and 12-month prevalence rate of 9.5 and 4.3 for females and 4.9 and 2% for males (Wittchen, Stein and Kessler, 1999). It is possible that higher rates are observed in females because they express greater concerns regarding their security in interpersonal relationships (Maccoby, 1990).

In contrast, no gender differences have been observed amongst clinical samples seeking treatment (Strauss and Last, 1993). It is possible that gender stereotypes operate to make social anxiety appear to be more problematic in boys than in girls. Indeed shyness is more likely to have an adverse impact upon the life course of men than women with respect to the age they married, became parents and entered stable careers (Caspi, Elder and Bem, 1988). It would be interesting to see if this presentation alters alongside changes in cultural values and gender stereotypes.

Ethnicity

The demonstration of fear in social situations has been reported in individuals regardless of race or culture (Beidel and Randall, 1994). Although developmental patterns in fear appear to be consistent across cultures (Gullone, 1996) mixed findings with respect to ethnic differences in prevalence rates have been reported.

Chinese adolescents report more social evaluative fears than their Western counterparts, possibly because of the higher emphasis their parents place upon the opinions of others (Dong, Yang and Ollendick, 1994). Furthermore, whilst some studies report higher rates of social anxiety in white compared to black Americans (Compton, Nelson and March, 2000) others have failed to find such differences (Beidel, et al., 1999; La Greca, 1998). Clearly further research investigating the influence of race and culture on the presentation of social anxiety is required to determine what differences exist.

Age of Onset

Social phobia has been reported to have a bimodal pattern of onset, before 5 years and between the ages of 11 and 15 (Schneier, et al., 1992). Children with generalised social anxiety tend to have an earlier onset than those with specific social fears (Wittchen et al., 1999). This might reflect the more serious nature of the generalised subtype. Generally, the mean age of onset for social phobia is between 11.3 (Last et al., 1992) and 12.3 years (Strauss and Last, 1993), although children as young as 8 years old have been diagnosed (Beidel and Turner, 1988). Essau and colleagues (1999) found that the number of adolescents diagnosed with social anxiety increased between the years of 12 and 17.

The link between social anxiety in children and social functioning

Peer relations play an important part in children's emotional and social functioning. Research suggests that poor peer relationships are predictive of negative outcomes (Parker and Asher, 1987), particularly depression and anxiety (La Greca and Stone, 1993).

Socially anxious children report that they are lonelier and have fewer friends than non-socially anxious peers (Beidel, et al., 1999). Adolescents high in social anxiety perceive their friendships to be less supportive, rate themselves as having less romantic appeal, and report more peer exclusion experiences than low anxious counterparts (La Greca and Lopez, 1998). Similarly, children's ratings of social acceptance are negatively associated with social anxiety (La Greca and Stone, 1993). Compared with their classmates, peer-neglected/rejected children and adolescents report higher levels of social anxiety (Inderbitzen, Walters and Bukowski, 1997) and are more likely to fear negative evaluation (La Greca and Stone, 1993).

Children with social phobia exhibit poorer social functioning than non-anxious peers. Specifically, they are more likely to avoid extracurricular activities and are less interpersonally skilled (Beidel et al, 1991). The parents of children scoring high on measures of social avoidance report that their children have more social skill deficits than the parents of non-anxious children (Ginsburg, La Greca and Silverman, 1998). Furthermore, compared with non-anxious controls socially anxious children have poorer facial affect recognition skills (Simonian, Beidel, Turner, Berkes and Long, 2001), poorer insight into other people's self-presentational social behaviour, and less appreciation of the unintentional nature of faux pas (Banerjee and Henderson, 2001). Difficulties understanding social behaviour might prompt children to feel vulnerable and to wrongly assume that other people are threatening. It is therefore possible that social skill deficits impair social relationships, increase the likelihood of peer rejection, prompt negative expectations and contribute to the development of social anxiety in vulnerable children. Alternatively, beliefs about peer rejection or social incompetence may trigger anxiety and anxiety-induced performance deficits,

increase avoidance, and prevent children from developing their social skills and establishing supportive friendships.

Although the temporal relationship between social anxiety and social functioning has not been determined, a number of studies have implicated peer relationships in the development of social anxiety. A prospective study by Vernberg, Abwender, Ewell and Beery (1992) attempted to clarify this dilemma. Following relocation to a new school social avoidance and distress predicted levels of intimacy and companionship and appeared to interfere with the development of new relationships. However, a reciprocal relationship was also observed as ratings of social anxiety lessened in response to companionship and increased in response to peer rejection. Additional longitudinal research investigating the temporal relationship between social behaviour, social experiences and anxiety would enable firmer conclusions to be drawn.

Co-morbidity

Social anxiety in children and adolescents is commonly co-morbid with other diagnoses. It has been estimated that between 66-90% of socially anxious children could be classified as having an additional DSM-IV anxiety disorder, most frequently simple phobia (Francis, Last and Strauss, 1992; Strauss and Last, 1993). Yet, despite such high co-morbidity, factor analytic research indicates that children's fears are clustered around 6 discrete but correlated factors (including social anxiety) and supports the application of the DSM-IV anxiety diagnoses to describe sub-types of childhood anxiety (Spence, 1997).

Compared with normal controls, children with social anxiety also tend to be more depressed (Francis et al., 1992). Estimates of co-morbid depression vary considerably from 8 (Beidel et al., 1999) to 29 (Essau et al., 1999) to 55% (Last, Strauss and Francis 1987). A study by Stein et al. (2001) suggested that depression may be a consequence of social anxiety as socially anxiety was a predictor of depressive disorders in adolescents at 3-5 year follow-up. Socially anxious adolescents report greater feelings of depression, estrangement and hopelessness. Worryingly, these factors have been associated with substance abuse (Albano, 2000; Essau et al., 1999) and increased risk of suicidal behaviour (Christoff and Myatt, 1987).

Attention deficit hyperactivity disorder (ADHD) and learning disabilities have also, but less frequently, been found to be co-morbid with social phobia (Beidel, et al., 1999). Whilst the conclusions that can be drawn from these studies are limited by the small sample sizes, it is interesting to note that the pattern of disorders co-morbid with social anxiety are similar to those seen in adults (Beidel et al., 1999).

Prognosis

No prospective studies investigating the long-term prognosis of social phobia in childhood have been undertaken. However, two-thirds of children diagnosed with the disorder continue to meet diagnostic criteria 6-months later (Beidel et al, 1996). Research also indicates that social anxiety may interfere with age-related norms. Adolescents with social phobia reach developmental milestones including dating and employment later than their non-anxious counterparts (Albano, BiBartolo, Heimberg and Barlow, 1995).

Retrospective studies using adult samples are more revealing. Half of all adults with social phobia report the onset of their symptoms by age 12 (Bourdon et al., 1988). As the rate of spontaneous remission is low (Reich, Goldenberg, Vasile, Goisman and Keller, 1994) and the disorder can follow a chronic, unremitting course without treatment (Beidel, Fink & Turner, 1996) social anxiety in childhood can persist into adulthood. As social anxiety in adulthood is associated with alcohol abuse, depression, social isolation, occupational impairment (Turner, Beidel and Epstein, 1991), divorce, unemployment (Schneier et al 1992) and suicide (Rapee, 1995) the disorder in childhood can have significant, adverse, implications for the future. These findings are particularly concerning as only 24% of adolescents with the disorder seek treatment (Essau et al, 1999).

This section has described how social phobia typically presents in children and adolescents, its association with social functioning and issues relating to prognosis. The following section will focus more specifically upon the cognitive processes that are believed to maintain social anxiety. Whilst the presentation of social phobia in children and adolescents is well described, to date, no specific models to explain the maintenance of the disorder in childhood have been developed. However, we do have 1) knowledge about developmental processes in social anxiety, 2) information about social development, 3) general models of childhood anxiety, and 4) two well-defined models which outline the maintenance of social phobia in adulthood. The review will summarise each of these areas in turn before considering what a model of childhood social anxiety may look like based upon the evidence to date.

Developmental processes in social anxiety

The types of stimuli that tend to elicit fear and anxiety change throughout infancy, childhood and adolescence. Young children most commonly express physical health anxieties; however, as children grow older their concerns become increasingly focussed upon behavioural competence and social evaluation (Vasey, Crnic and Carter, 1994). Children aged between 8 and 11 years old most commonly reported fears relating to death and danger, but a year later the same children most commonly feared stress, failure and criticism (Silverman and Nelles, 1989). Children become increasingly likely to define success and failure in terms of social comparison and peer acceptance as they get older (Wigfield, 1988). Social concerns/fears are consistently reported in children and adolescents (Campbell and Rapee, 1994), are thought to peak around 15 years of age (Beidel, Fink, and Turner, 1996), and appear to be less transitory than other childhood fears (Achenbach, 1985).

The literature on the development of embarrassment might help to explain why developmental changes in social anxiety are observed. Two different types of embarrassment have been identified. The first, exposure embarrassment, refers to self-consciousness that emerges during a child's second year alongside the capacity for self-awareness and the ability to perceive oneself as the focus of attention (Lewis, 2001). The second, negative evaluative embarrassment is said to develop one to two years later because more complex cognitive abilities are needed to be able to compare oneself against internalised rules and standards. Exposure embarrassment can occur before children have the skills to anticipate negative evaluation and represents embarrassment at being observed. It can therefore be triggered when negative evaluation is unlikely, in response to compliments or praise (Lewis,

Sullivan, Stanger and Weiss, 1989). Social phobia appears to be related to the second type of embarrassment. As children become able to anticipate negative evaluation they can make themselves anxious through their thoughts. The capacity to fear negative evaluation is said to coincide with the shift from egocentrism to other-perspective taking and peaks during adolescence (Buss, 1986) which helps to account for the higher incidence of social anxiety at this age.

In sum, developmental factors determine a child's capacity to interpret situations, anticipate threat and fear negative outcomes. Developmental changes in the types of concerns that children report have been observed. Before children can fear negative evaluation and feel socially anxious they need to be able to differentiate themselves from others and interpret situations from another's perspective. The next section goes on to examine social development and how this might relate to social anxiety.

Social development in children and adolescents

Sullivan's (1953) model of social development proposes that particular social needs emerge during different stages of development. During the early school years parental relationships and friendships with same-sex and age peers are the preferred source of companionship (Burhmester and Furman, 1987). During adolescence, as individuals begin to negotiate the transition into adulthood, the significance of parental relationships decline (Ellis, Rogoff and Cromer, 1981), greater importance is placed upon peer relationships (Burhmester and Furman, 1987), and interpersonal issues predominate. It has been suggested that adolescents are more likely than younger children to feel socially anxious because other people's reactions to them

are more salient because of their evolving personal identity and changing support system (Elkind, 1980).

Adolescence has been described as a period of heightened self-consciousness (Weiner, 1992). In addition to the increased importance adolescents place upon others' evaluations of them (Ollendick and Hirschfeld-Becker, 2002), the nature of adolescence demands that individuals encounter a number of novel situations, such as dating, changing schools and gaining employment. Novel situations most frequently trigger shyness (Buss, 1990) and this might also apply to social anxiety. It has been suggested that social phobia develops from normal self-conscious anxieties that are exaggerated by the demands of adolescence (Amies, Gelder and Shaw, 1983). Whilst identity formation has been related to social-self-assurance in adolescents identity confusion is thought to worsen feelings of self-consciousness (Erikson, 1968). Consistent with this, identity achievement in adolescents was negatively associated with self-consciousness whereas the development of a satisfying sense of self appeared to engender anticipation of approval by others (Adams, Abraham and Markstrom, 1987).

Taken together, this research helps to explain why social concerns and social anxiety most commonly present during adolescence. The role that cognitive processes play in maintaining childhood anxiety, particularly social anxiety will now be discussed.

Cognitive models of childhood anxiety

Cognitive models of childhood anxiety have been largely extended down from adult models and are less well developed.

Kendall's (1985) theory of childhood anxiety draws heavily upon the ideas of Beck, Emery and Greenberg (1985) and proposes that anxiety disorders arise from the over-activation of schemas relating to danger and threat. Once activated, threat schemas are said to bias information processing in a way that maintains threat. Daleiden and Vasey (1997) suggest that information-processing factors such as selective attention and threat perception biases prompt anxious children to adopt a negative attributional style, more readily perceive threat and expect negative outcomes that prompt them to maintain safety through avoidance. Specifically, Kendall claims that children with social phobia require new social experiences to help them to revise the beliefs and distorted social schema that act to maintain their anxiety. Given the absence of models of childhood social anxiety, theories devised to account for social anxiety in adulthood will be discussed and later considered in relation to children and adolescents.

Cognitive Theories of Anxiety

The most influential cognitive theory of anxiety is that of Beck et al. (1985). According to this model, individuals experience anxiety when they perceive physical or psychosocial danger and believe that they are unable to cope with the threat or its consequences. Thus, individuals with maladaptive fears overestimate the threat that is presented and underestimate their capacity to cope. The model further suggests that each anxiety disorder is characterised by specific cognitive content. This content-specificity hypothesis has been hugely influential in the development of models to explain the onset and maintenance of specific anxiety disorders. If correct, the cognitive content of fears could be used to form the basis of clinical diagnoses (Ingram and Kendall, 1987).

Cognitive Models of Social Anxiety

In relation to social anxiety, Beck et al. (1985) suggest that specific interpretations act to trigger and maintain anxiety by increasing appraisals of threat and personal cost. The model proposes that socially anxious individuals are more likely than non-anxious individuals to interpret ambiguous social events in a negative fashion and to interpret mildly negative social events in a catastrophic (costly) fashion. Empirical research supports these ideas in adulthood. Adults with social phobia demonstrate a negative interpretation bias towards self-referent, ambiguous social situations that is not observed in relation to ambiguous non-social events (Amir Foa and Coles, 1998; Constans, Penn, Ihen and Hope, 1999; Stopa & Clark, 2000). Importantly, such biases are not found in normal controls or individuals with alternative anxiety disorders (Amir et al., 1998; Stopa and Clark, 2000). Individuals with social phobia are also more likely than other anxious and non-anxious controls to catastrophically interpret mildly negative social events and less likely to believe neutral alternative explanations for negative and ambiguous social events (Stopa & Clark, 2000). A summary of the most recent cognitive models developed to explain the maintenance of social anxiety (Clark and Wells, 1995; Rapee and Heimberg, 1997) now follows.

Central to both models is the assumption that socially anxious individuals fear negative evaluation and believe that they are unable to present a desired impression of the self to others or meet audience expectations. They consequently fear that they will behave inappropriately, or do something embarrassing, that will result in negative evaluation from others and have negative consequences for the future. Accordingly, socially anxious individuals expect social interactions to have more negative and costly outcomes than low anxious individuals (Foa, Franklin, Perry and

Herbert, 1996). Indeed, a positive relationship between perceived cost and anxious symptoms has been identified (Poulton and Andrews, 1994). Socially anxious individuals are said to place great importance upon positive evaluation by others but assume that others will criticise them. Expecting negative evaluation prompts individuals to fear audiences and feel anxious when they are in, or anticipate being in, a socially threatening situation. In addition, socially anxious individuals are thought to hold excessively high standards for social performance (Clark and Wells, 1995) and both models suggest that they are overly self-critical of perceived errors/inadequacies and underrate their social performance.

Consistent with the latter assumption, research demonstrates that socially anxious individuals report more negative self-evaluative thoughts than controls and underestimate their own, but not other people's, performance on social tasks even when actual differences in performance are taken into account (Stopa and Clark, 1993; Rapee and Lim, 1992). These beliefs and biases make it almost inevitable that socially anxious individuals will feel anxious, perceive social performance shortfalls and assume that others will evaluate them negatively. Expecting negative evaluation may also reduce the likelihood that contradictory evidence will be noticed. Indeed, adults with social concerns display attentional biases towards threatening social stimuli (Mogg, Mathews and Eysenck, 1992) although some studies show attentional biases away from threat (Chen, Ehlers Clark and Mansell, 2002).

In addition to becoming preoccupied with negative social-evaluative thoughts, both models suggest that socially anxious individuals become preoccupied with their anxious arousal. This shift in attention prompts socially anxious individuals to form

an unfavourable self image/impression. This mental representation is assumed to reflect how others perceive them and can be revised or confirmed upon the basis of conclusions the individual makes about their social performance. Clark and Wells (1995) further suggest that the anxiety response can be mistakenly used as evidence of danger or failure to convey the desired impression (for example, blushing may be interpreted as visible sign of incompetence). In an attempt to create a good impression, reduce anxiety, and avoid feared situations, socially anxious individuals often perform safety behaviours such as avoiding eye contact (Clark and Wells, 1995; Rapee and Heimberg, 1997). Ironically, these attempts at self-presentation can increase anxious preoccupation and impair performance.

The performance of safety behaviours, preoccupation with the physiological anxiety response and negative social-evaluative thoughts divert attention away from the task in hand and divides attention. This may make individuals appear less competent, unfriendly or uninterested and increase the likelihood that they will elicit negative feedback from others. Rapee and Heimberg (1997) also propose that attention is directed towards external cues that are assumed to indicate negative evaluation. This bias interferes with the capacity to accurately evaluate situations, prevents belief-incongruent evidence from being identified, widens the perceived discrepancy between actual and desired performance, confirms fears and maintains anxiety. Upon leaving social situations biased post-event processing also acts to maintain the disorder by drawing the individual's attention to the negative aspects of an interaction. Compared with non-anxious individuals, socially anxious individuals recall less information about the people that they interact with and a positive association has been identified between the severity of anxiety and self-focussed

attention (Hope, Heimberg and Klein, 1990). Furthermore, socially anxious individuals have been shown to engage in more post-event rumination, remember less external information and display more negatively biased memories for self-referent social events, than non-anxious individuals (Mellings and Alden, 2000).

Both models suggest that cognitive, behavioural and physiological factors interact to trigger social anxiety upon entering, and in anticipation of entering, social situations. Specifically, they suggest that anxiety is maintained by attentional and interpretative biases relating to the perception of threat, negative self-beliefs about social competence and safety behaviours. However, the models differ in respect to the emphasis that is placed upon internal and external threat cues. Whilst Rapee and Heimberg incorporate external threat cues into their model, Clark and Wells tend to focus upon physiological symptoms, internal thought processes and self-beliefs.

The research appears to provide preliminary support for many of the cognitive processes that are assumed to play a role in maintaining social anxiety. The interested reader is directed to a more comprehensive review of the evidence by Roth and Heimberg (2001). Compared with non-anxious controls, socially anxious individuals find social situations more threatening, perceive them more negatively, report more self-critical thoughts and tend to underestimate their social performance. However, research that compares larger groups of clinically socially anxious individuals with individuals with alternative anxiety disorders needs to be conducted before more robust conclusions can be drawn, particularly as the general reliance upon self-report questionnaires and imagined scenarios weakens the ecological validity of the research.

Although Clark & Wells (1995) acknowledge that the dysfunctional negative beliefs associated with social anxiety can form in childhood, and Rapee and Heimberg (1997) suggest that the internalisation of parental messages may help to explain the development of social anxiety, the models do not explain why social anxiety develops. Both models were written to account for the disorder in adulthood and neither model addresses whether developmental or systemic factors (given the different social systems that children operate within) influence the maintenance of social anxiety in childhood. The following section examines the nature of anxious cognitions in children and adolescents before focusing upon the cognitions associated with social anxiety. The findings will then be discussed in relation to the models described above.

Anxious cognitions in children

Anxious children, like their adult counterparts, commonly report anxious thoughts. Although developmental constraints influence how children express their anxiety (Prins, 2001) children as young as five years old can identify anxious cognitions (Vasey, et al, 1994). A large community sample revealed that two-thirds of children report at least one worry concerning their health, school performance or safety (Silverman, La Greca, and Wasserstein, 1995). However, clinically anxious children can be differentiated from non-anxious children in that they more frequently report anxious thoughts (Epkins, 1996, Laurant and Stark, 1993) and rate them as more intense (Silverman et al., 1995; Perrin and Last, 1997). Similarly, socially phobic children report a greater number of anxious cognitions relating to the performance of a social-evaluative task than non-anxious controls (Spence, Donovan, Brechman-Toussaint, 1999).

Whilst the literature provides considerable evidence to support a cognitive differentiation between anxious and non-anxious children, far less research has been conducted to determine whether the content of children's thoughts can differentiate between diagnoses. The evidence for and against such differentiation is presented below. Clinically anxious children report significantly more anxious than depressive cognitions (Treadwell and Kendall, 1996), and threat-related cognitions in children and adolescents are more strongly associated with anxiety than depression (Ambrose and Rholes, 1993; Jolly and Dykman, 1994). More specifically, children with separation anxiety disorder were significantly more likely to endorse separation-related worries than children with other anxiety diagnoses (Perrin and Last, 1997). Finally, withdrawn children were less likely than popular children to endorse positive self-statements in response to vignettes detailing social situations (Stefanek, Ollendick, Baldock, Francis and Yaeger, 1987).

In contrast, two studies report less conclusive findings. Laurant and Stark (1993) compared the self-rated beliefs and thoughts of groups of anxious (n=11), depressed (n=15) and mixed anxious-depressed children (n=19). Whilst depression was specifically related to thoughts relating to the negative cognitive triad, no significant differences between the clinical groups were identified with respect to the anxious or more general depressive thoughts. Despite this, trends in the direction expected were observed for both anxiety and depression. The second study by Epkins (1996) also found a non-significant trend towards cognitive-specificity between the anxious thoughts endorsed by socially anxious (n=14) and dysphoric children (n=13).

However, a number of methodological limitations within both studies prevent the results from providing clear support against the cognitive-specificity hypothesis. The anxious group in the former study lacked homogeneity and may therefore have experienced a wide range of anxious cognitions that would have been omitted from the general anxiety measures administered. In addition, the researchers suggested that the instruments employed might not have adequately tapped into the cognitive aspects of childhood anxiety. Both studies had small sample sizes; thus, significant findings may have been obtained if larger clinical groups had been used. Although the children in the Laurant and Stark (1993) study broadly met the diagnostic criteria for anxiety and depression they did not have clinically severe problems, and the children in the Epkins (1996) study were grouped upon the basis of self-report measures. It could be argued that there was overlap in the cognitive content of the self-report measures. Both studies used a modified version of the Cognition Checklist (Beck, Brown, Steer, Eidelson and Riskind, 1987). A number of thoughts classified as "depressed", such as "I'm a social failure" and "I am not worthy of people's attention", may also be associated with anxiety, particularly social anxiety as assessed by Epkins (1996). Furthermore, in relation to the Epkins study some of the anxious items ("I am going to have a heart attack" or "I'm losing my mind") may have been more relevant for individuals with panic disorder rather than social anxiety. Finally, the cognitive model predicts that socially anxious individuals will only endorse anxious thoughts within social, but not non-social contexts.

Attentional biases

In accordance with Beck et al's (1985) and Rapee and Heimberg's (1997) theories, anxious children appear to attend to signals of threat. Probe detection tasks, whereby

participants have to locate a probe following the presentation of a threatening and neutral word pair, demonstrate that clinically anxious children (Vasey, Daleiden, Williams and Brown, 1995), and children high in test anxiety (Vasey, El-Hag and Daleiden, 1996), display attentional biases towards emotionally threatening words. Although the latter study failed to find a content specific bias towards social and performance situations this may have been because the social threat words (e.g. unpopular and lonely) were not salient for children with test-anxiety.

Interpretation biases

As mentioned earlier, two interpretation biases are associated with anxiety. Anxious individuals are believed to be more likely than non-anxious individuals to interpret ambiguous situations in a threatening manner and to interpret mildly negative events in an overly negative fashion. Compared with children low in trait anxiety, children with high trait anxiety displayed a bias towards threatening interpretations of homophones, for example, taking the word cross to represent angry instead of a symbol (Hadwin, Frost, French and Richards, 1997). This parallels similar research within the adult literature whereby anxious adults were more likely to interpret ambiguous sentences negatively than non-anxious adults (Eysenck, Mogg, May, Richards, and Mathews, 1991).

To investigate the first interpretative bias Bogels and Zigterman (2000) presented a series of ambiguous social, separation, and generalised anxiety stories to groups of clinically anxious children, normal controls and children with externalising difficulties (ADHD, oppositional defiant disorder or conduct disorder). The anxious children reported more dysfunctional cognitions, negative emotions, rated the

situations as more dangerous and themselves as less able to cope with the perceived threat than both control groups. Compared with externalising difficulties, the results indicated that anxiety was more strongly related to the perception of threat and negative thoughts. Unfortunately, no specific cognitive content-related analysis was undertaken due to the small sample sizes and heterogeneous nature of the anxiety group.

Anxious children are also more likely than non-anxious children to interpret vignettes of ambiguous physical and social situations as threatening and to choose avoidant solutions (Barrett, Rapee. Dadds and Ryan, 1996). However, in contrast to the previous study, children meeting diagnostic criteria for oppositional defiant disorder interpreted both types of situation as more threatening than the anxious group. Despite this, the anxious children were most likely to choose avoidant responses whereas the oppositional children were more likely to react aggressively. The children then discussed the stories with their parents who had been instructed to help them decide how to respond to each situation. Interestingly, parental responses were found to mirror those of their children and following the discussion, the anxious children increased their avoidant responding. This suggests that familial factors influence the way in which children interpret and respond to situations. It must be noted that this study may not have supported the specificity hypothesis as strongly as the former study because the ambiguous situations were not specifically related to the anxiety diagnoses of the participants.

Cognitive Errors

Cognitive errors have been implicated in the development and maintenance of clinical problems in adulthood (Clark, 2000; Fennell, 2000). Similarly, research investigating cognitive processing in children has also begun to identify patterns of distorted or negative thinking. The four main types of cognitive error that have been studied are catastrophisation (a tendency to anticipate overly negative consequences), overgeneralisation (assuming that the outcome of one experience will apply to similar experiences), personalisation (inappropriately attributing external events to one's self), and selective abstraction (selectively attending to the negative aspects of experiences).

Anxious children as young as eight years old have demonstrated catastrophic thinking (Brown, O'Keefe, Saunders and Baker, 1986). In response to vignettes detailing failure and loss adolescents with internalising problems (somatic complaints, withdrawal, anxiety or depression) were significantly more likely than controls with conduct difficulties to endorse cognitions related to personalisation and catastrophisation (Leung and Wong, 1988). More specifically, test-anxious and non-anxious children were differentiated by the number of cognitive errors they endorsed in response to hypothetical social, academic and athletic situations, although no differences were observed between groups of anxious, depressed and low self-esteem children (Leitenberg, Yost, and Carroll-Wilson, 1986). After controlling for depression, catastrophisation, overgeneralisation and personalisation was specifically related to anxiety in clinically anxious children and adolescents (Weems, Berman and Silverman, 2001). Closer analysis of the results suggested that particular cognitive errors could be differentially important to certain manifestations of anxiety.

Catastrophisation and personalisation predicted anxiety sensitivity (which relates to the belief that anxious symptoms will have negative consequences) most strongly whereas trait anxiety (which reflects the tendency to experience anxiety) was predicted most strongly by overgeneralisation. Although the sample was made up of a range of anxious diagnoses no between-diagnosis differences were reported.

Overall, the research indicates that anxious children report more anxious cognitions than controls, display attentional biases towards threat, have a tendency to interpret ambiguous information in a threatening manner and demonstrate cognitive errors in their thinking. However, these biases may not be anxiety specific as they have also been associated with externalising difficulties. Despite this, the findings are largely consistent with Beck's theory of anxiety (Beck et al., 1985) and suggest that cognitive processes operate to confirm anxiety-related beliefs and schemas in children. Such biases act to 1) prevent children from attending to non-threatening factors that could be used to re-evaluate their beliefs, 2) maintain a sense of threat, 3) prompt the overestimation of threat and 4) promote avoidance. The next section aims to determine whether adult models of social anxiety can be usefully applied to explain the maintenance of the disorder in childhood. Clark and Wells (1995) and Rapee and Heimberg (1997) make a number of assumptions about the way socially anxious individuals interpret social situations. The main assumptions will be outlined and the evidence to support these processes in children and adolescents is discussed.

Assumption 1: Socially anxious children and adolescents are more likely to interpret social threat than non-socially anxious counterparts.

In-line with the cognitive model of social anxiety, adolescents rated high in social anxiety were significantly more likely than adolescents low in social anxiety to predict threatening outcomes in response to negative social situations relevant to the self (Magnusdottir and Smari, 1999). Importantly, this threat perception bias held after controlling for depression and was not found for non-social situations. However, a limitation of the study was its reliance upon questionnaires detailing hypothetical situations. A threat perception bias has also been identified by Muris, Merckelbach and Damsma, (2000). Compared to non-anxious controls, children rated high in social anxiety required less information to judge ambiguous social stories as threatening, more frequently indicated that they were scary, rated the stories as more threatening and reported more negative feelings and cognitions in relation to them. Unfortunately, as no non-social stories were presented during this study, situation-specific analyses were precluded. Despite this, the study lends support to Kendall's (1985) theory which suggests that danger-related schemas are more easily activated in anxious as opposed to non-anxious children. However, the study mentioned previously by Barrett et al. (1996) failed to support the specificity hypothesis. Socially anxious children did not rate the social situations as more threatening than the physical situations although there was a non-significant trend in the expected direction. Furthermore, the socially anxious children did not perceive the social situations as more threatening than the other anxious children. Despite this, sample characteristics may have been responsible for these non-significant findings. The sample size was small and participants had a high incidence of co-morbid anxiety diagnoses.

Assumption 2: Socially anxious children perceive negative social outcomes as more costly than non-socially anxious children.

Whilst research supports this assumption in relation to adults no studies have specifically investigated the role of catastrophisation in socially anxious children. However, an association between catastrophisation and childhood anxiety has been identified. Specifically, socially anxious children were significantly more likely to endorse cognitive errors than non-disordered controls (Epkins, 1996). Although there were no differences in the number of cognitive errors endorsed by the anxious and depressed groups (possibly because they did not met diagnostic criteria) the anxious children were more likely than the dysphoric children to endorse responses indicative of personalisation and overgeneralisation. No differences were observed in catastrophisation. However, socially anxious children have rated potentially aversive social situations as more costly than non-anxious controls (Magnusdottir and Smari, 1999).

Assumption 3: Socially anxious children and adolescents underestimate their ability/ feel unable to cope with perceived social threat.

The study by Bogels and Zigterman (2000) supports this assumption in relation to general anxiety. Following the presentation of a range of ambiguous situations, anxious children made lower estimations of their capacity to cope with the danger and rated themselves as more hopeless than children in the non-disordered and externalising control groups. More specifically, symptoms of social anxiety and depression have been differentially related to areas of competence. Whilst social anxiety in adolescents was negatively associated with self-ratings of social competence, depression was related a more pervasive view of one's competence

across social, academic and physical domains (Smari, Petursdottir and Portsteindottir, 2001). In addition, Muris (2002) demonstrated that social anxiety was specifically related to social, but not academic or emotional self-efficacy after controlling for depression. Although the research is correlational and prospective studies are required, social anxiety appears to be specifically related to social-evaluative self-efficacy and consistent with cognitive models of social anxiety.

Compared with non-anxious controls, children with social phobia report higher levels of anticipatory anxiety prior to performing social-evaluative tasks, and higher levels of anxiety following task completion (Spence, et al., 1999). Socially anxious children also expect fewer positive and more negative outcomes following evaluative events. Compared with non-anxious controls, socially anxious children evaluated their performance more negatively, rated themselves as less socially competent, demonstrated a tendency to underestimate their reading skills, and displayed social skill deficits indicating that their negative expectations may sometimes be justified. However, as the accuracy of their competency ratings was not assessed it could not be determined whether they were overly self-critical. This study has better ecological validity than the majority of studies within the field (the findings were based upon actual rather than imagined situations). However, the findings need replication due to the small sample size (n=27) and because there were no controls for depression. There is also a need for longitudinal research to determine the temporal relationship between skill deficits, social anxiety and negative expectations.

According to cognitive models of social anxiety, socially anxious individuals should only display interpretative biases in social situations. Whilst the research base is

relatively sparse it provides preliminary evidence to support the assumption that socially anxious children more readily interpret social threat than their non-anxious counterparts as predicted by Beck et al. (1985). Given the methodological weaknesses in Barrett et al's (1996) study, the evidence from Magnusdottir and Smari, (1999) provides preliminary support for a specific threat perception bias relating to social situations, again, these findings require repetition. The Epkins study (1996) also suggests that cognitive errors are associated with childhood social anxiety although it is yet to be determined whether the cognitions are content-specific. It is reasonable to predict that all the cognitive errors described play a role in maintaining the disorder in childhood. Socially anxious individuals fear social situations because they expect overly negative consequences. They may make inaccurate assumptions about their social performance based upon past "failings". Socially anxious children might wrongly interpret ambiguous social situations as having negative personal meaning, for example, believing that a giggling child is laughing at them. Finally, Rapee and Heimberg (1997) predict that socially anxious children would selectively attend to the negative aspects of social interactions, for example, having self-critical thoughts about blushing whilst ignoring the fact that they had managed to sustain a conversation.

The evidence to support the cognitive content-specificity hypothesis in relation to social anxiety in childhood is equivocal. Both similarities and differences in the cognitions of children with anxiety and depression have been identified. Whilst the cognitions of socially anxious children differ from controls, research that compares children with different anxiety diagnoses is required before more robust conclusions can be made about the validity of the hypothesis. It is possible that methodological

shortcomings have precluded the identification of more stronger relationships to support cognitive content-specificity. Small participant groups, heterogeneous samples, the use of measures not validated for use with children has precluded the fine-grained analysis that is required. Whilst it is accepted that social anxiety lies upon a continuum (Rapee & Heimberg, 1997) the use of non-clinical participant groups makes it harder to detect content-specific relationships. The absence of longitudinal studies also prevents any temporal relationships that exist between cognition and disorder from being established. Hence, more controlled research is needed to consolidate and extend these findings.

A further limitation is the general reliance upon self-rating measures and thought checklists as they may not accurately reflect the actual thoughts of children. Although thought-listing techniques may be more appropriate for use with adults than with children, because children have less cognitive insight (Kendal and Chansky, 1991), this research would help validate the utility of using such self-rating scales with children. Overlap in the content of the self-report measures also places limitations on the research. Developmental processes in the expression of distress or cognitive insight may also impact upon the findings as the relationship between cognitive errors and anxiety is stronger for older children (Weems et al., 2001). However, Alfano Beidel and Turner (2002) emphasise caution when making conclusions based upon significant findings as some of the between-group differences reported are small. Despite this, further examination of the hypothesis is important as it could improve our understanding of childhood anxiety. If supported, the theory could aid differential diagnosis as symptom-based methods of diagnosis are often complicated by similarities in clinical presentation. It might also enhance

the development of efficacious treatment strategies and help clinicians to assess therapeutic outcome.

In the absence of a specific model of social anxiety to explain the maintenance of the disorder in children and adolescents there are a number of reasons why it may be useful to consider the application of adult models to the disorder in childhood. The following sections outline the rationale for this and consider how the models might be appropriately developed.

The rationale for applying adult models of social anxiety to children and adolescents

It is generally assumed that dysfunctional beliefs have their origins in childhood and research has found associations between cognitive distortions and psychopathology (Brown et al., 1986; Weems et al., 2001). The differences identified in the presentation of social anxiety in adults and children appear to be largely developmental. The way social anxiety is described within DSM-IV implies that there is continuity between the disorder in childhood and adulthood, and children report anxious cognitions that are similar to those reported by anxious adults. In-line with the basic assumption of the models, socially withdrawn children worry about their ability to make a favourable impression and report anticipatory concerns about social rejection (Stefanek et al., 1987). The evidence suggests that socially anxious children more readily perceive social as opposed to non-social threat. Furthermore, adolescent reports of social anxiety are associated with the perceived cost and likelihood of social but not non-social events (Smari, et al., 2001). Models of psychopathology are commonly and successfully extended down from adults to children. Like their adult counterparts, socially anxious children (La Greca, Dandes,

Wick, Shaw and Stone, 1988) and adolescents (La Greca, 2001) can be differentiated from non-anxious children on measures of fear of negative evaluation and on social avoidance and distress. Finally, if similar cognitive processes underpin social anxiety in childhood, effective treatments for adults may be modified for use with children.

Despite similarities in the presentation of social anxiety across age there is less substantial evidence to support the application of the cognitive model of social to children and adolescents than there is with adults. However, since the inclusion of specific child-related criteria within diagnostic manuals (DSM-III, American Psychiatric Association, 1980) and the development of tools to assess children's cognitions, more research is being conducted.

Models of social anxiety: Developmental considerations

The most significant factor likely to differentially impact upon the maintenance of social anxiety disorder in children and in adults is the role of the family. As children are more dependent upon their families it is likely that familial factors will play a part in maintaining anxiety. The study by Barrett et al. (1996) which demonstrated that anxious children increased, and non-anxious children reduced, their avoidant responding after they had discussed various situations with their families lends support to this position. However, whilst external threat cues and interpersonal factors are mentioned briefly, systemic, familial and peer influences are not specifically mentioned within the Clark and Wells (1995) and Rapee and Heimberg (1997) models. Thus, in order to increase the applicability of the models to children and adolescents greater emphasis may need to be placed upon role of interpersonal

exchanges and how other people's reactions towards them might impact upon social expectations, self-beliefs and social behaviour (see Alden (2001) for a discussion).

To ease their child's distress, parents may inadvertently reinforce social anxiety by making accommodations for, or collaborating with, their child's avoidance. Furthermore, if the parents, themselves, are socially anxious they may model inappropriate social behaviours and coping strategies. Such processes would confirm the child's fears, may reduce the child's contact with non-family members and prevent them from developing more appropriate social behaviours. Indeed, compared with non-anxious individuals, socially anxious individuals retrospectively report that their parents isolated them from others, promoted less socialisation (Rapee and Melville, 1997) and were more overprotective and concerned with the opinion of others (Bruch and Heimberg, 1994). Thus a model of social anxiety which attempts to explain the maintenance of the disorder in childhood would benefit from incorporating systemic factors to illustrate the impact that the social context could have upon the beliefs that trigger social anxiety in children and adolescents.

It may also be useful to consider some of the ideas proposed by Crick and Dodge (1994) who outline a social-information processing model underpinning children's social adjustment. Although this general model does not make specific references to social phobia it comprehensively describes the way in which cognitive processes govern children's social understanding and behaviour. They suggest that memory deficits, attentional biases, dysfunctional schema and strong emotional reactions operate in socially maladapted children to interfere with their ability to process and

use social cues. It is likely that these processes also influence the perception of social threat and are directly relevant to social phobia.

Treating anxiety disorders in children and adolescents

Despite the gaps within the literature, cognitive processes are clearly implicated in the development and maintenance of childhood anxiety. The discovery that anxious children display similar cognitive processes and biases to those observed in adults has prompted clinicians to adapt treatments originally developed for adults for use with children and adolescents (see Kendall and Chansky, 1991). Treatment strategies to ease anxious distress have evolved to accommodate what has been learnt about the cognitive processes that underlie childhood anxiety. Both behavioural and cognitive-behavioural treatments are effective in alleviating anxiety in children and adolescents (see Ollendick and King, 1998). However, given the cognitive emphasis of the review, the remaining section will focus upon the efficacy of treatments that have a cognitive component.

Treatments that aim to change dysfunctional thinking and reduce negative thoughts appear to be useful. Negative self-statements and thoughts in clinically anxious children, mediate anxiety reduction and are predictive of anxiety severity and therapeutic outcome (Treadwell and Kendall, 1996). Daleiden and Vasey (1997) suggest that children should be taught to use cognitive-behavioural techniques to critically evaluate their fears and the evidence in support of their beliefs. This may help prevent children from overestimating the threat that is presented and engender a sense of self-efficacy. Compared with wait-list controls, individual cognitive-behavioural treatments (CBT) are effective in alleviating anxiety symptoms and

freeing children of their diagnosis at one-year (Kendall, 1994; Kendall, et al. 1997) and three-year follow-up (Kendall and Southam-Gerow, 1996). The research also suggests that involving parents (especially those who are anxious) in CBT improves therapeutic outcome for children in middle childhood (Barrett, Dadds and Rapee, 1996; Cobham, Dadds and Spence, 1998).

Group treatments for children and adolescents with a range of anxiety disorders are more effective than no treatment (Rapee, 2000; Silverman et al., 1999). In both studies improvements were maintained at one-year follow-up and outcomes were comparable to those obtained by individual treatment programs. A family-based CBT group was also more effective at alleviating anxiety in a mixed sample of children than a no treatment group at both termination and one year follow-up (Shortt, Barrett and Fox, 2001). Overall, the use of CBT packages, in individual and group form, to target negative cognitions and treat childhood anxiety is supported. The following section specifically examines the literature detailing the efficacy of treatments used to alleviate social anxiety disorder in childhood.

Treating social anxiety in children and adolescents

Children with social phobia were included within both treatment studies reported by Silverman et al. (1999) and Rapee (2000) above. Although the children with social anxiety disorder in the latter study appeared to respond more slowly to treatment, no differences in outcome for children with different anxiety disorders were identified in either study at 12-month follow-up. More specifically, a group CBT package originally devised for adults with social phobia and shy adolescents has been used with socially anxious adolescents (Albano, BiBartolo, Holt, Heimberg and Barlow,

1995). Treatment consisted of psycho-education, social skills and assertiveness training, problem solving, cognitive restructuring, exposure and weekly homework tasks. At 3 month follow-up 4 of the 5 adolescents no longer met diagnostic criteria and, encouragingly, all five fell outside the diagnostic criteria at 12 months. The same programme has been subsequently repeated with similar results with socially anxious adolescents although there was no adequate control group at follow-up to compare longer-term effectiveness (Hayward et al., 2000).

The only randomised control trial for the treatment of social anxiety was undertaken by Spence, Donovan and Brechman-Troussaint (2000) who investigated whether outcome could be improved by adding a parental component. Compared to wait-list controls, CBT (which included social skills and relaxation training, problem-solving, cognitive restructuring and exposure) with and without parental involvement demonstrated superior results. Furthermore, a trend towards better outcome in the parental component group was observed. Preliminary evidence suggests that group programs can also be successfully conducted within schools (Masia, Klein, Storch and Corda, 2001).

As some socially anxious children demonstrate social skill deficits, CBT to modify dysfunctional beliefs may not always be the most appropriate intervention. Where skill deficits are observed social effectiveness training for children (SET-C, Beidel, et al., 1999) may be more suitable. The SET-C programme, based upon adult interventions was modified for use with children aged between 8 and 12 years of age. It combines social skill training and exposure with the opportunity to practise newly learnt skills with non-anxious peers (Beidel, et al., 1999). Compared with children

who received a non-specific intervention the children in the SET-C group had improved social skills and increased social interactions. Ratings of socially phobic fear fell below clinical levels (67% versus 5%) and, importantly, treatment gains were maintained, and in some cases had improved, at 6-month follow-up.

The research to date is encouraging and suggests that multi-component treatment approaches can be successfully used to reduce anxiety and improve the social skills and interpersonal behaviour of children and adolescents with social anxiety. Unfortunately, there is a dearth of systematic, controlled, treatment studies investigating the treatment of the disorder in childhood. More robust treatment trials that employ larger samples and more adequate control groups are required to consolidate the preliminary findings and to identify which components are most beneficial. Further investigation into developing age-appropriate treatments is also required given the evidence to suggest that parental involvement improved outcome for children but not for adolescents (Barrett et al., 1996). There is little evidence to indicate that social phobia remits spontaneously over time. Left untreated social anxiety can follow a chronic course that has long-term implications for functioning. As the majority of adults report the onset of their difficulties in childhood it is important to provide effective treatments for this age group. It is possible that this would reduce the number of adults with social anxiety, however, long-term follow-up studies are required to confirm this.

Conclusions and future directions

Social anxiety in childhood is a serious disorder that is associated with social withdrawal, social skill deficits, poor peer relationships, depression, substance abuse

and problems in adulthood. Although there are some developmental differences in the presentation of social anxiety in children, adolescents and adults there appears to be more similarities than differences. Models of social anxiety to explain the maintenance of social anxiety in adults are relatively well supported although empirical testing of the finer details continue. In contrast, there are no models that specifically attempt to account for the maintenance of social anxiety in childhood. Whilst researchers have begun to investigate the utility of applying the models proposed by Clark and Wells (1995) and Rapee and Heimberg (1997) to children there are considerable gaps within the literature. To date, empirical studies provide preliminary support for the assumption that socially anxious children and adolescents perceive ambiguous social situations to be more threatening than their non-anxious counterparts. However, additional controlled research is required to replicate, consolidate and expand the evidence base. There are a number of unexplored questions. Do socially anxious children demonstrate increased self-focussed attention during social situations? Do socially anxious children construct a negative mental representation of the self? Is the processing of external social cues negatively biased towards social threat cues?

To conclude, the literature investigating social anxiety in children and adolescents is growing along with our understanding of the disorder. With respect to the maintenance of social phobia it appears that cognitive processes play an important role. Given the apparent continuities between the disorder in childhood and adulthood existing models of social anxiety can provide a useful framework upon which to base future research efforts. Despite this, it is important to keep in mind the different social and familial contexts within which children and adults operate. A

particular shortcoming of the Clark and Wells (1995) and Rapee and Heimberg (1997) models is the largely individual focus that they adopt, particularly as research implicates familial factors in the maintenance of the disorder. Due to the emphasis placed upon the cognitive factors that act to maintain social anxiety, a discussion of the etiological factors that contribute to the development of social anxiety is beyond the scope of this review. However, the field would benefit from adopting a longer-term perspective of social anxiety that gives consideration to the development of models that integrate both the etiological and maintaining factors that underlie the disorder.

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Empirical Paper

Interpretative biases in social anxiety: Does social anxiety influence the way in which adolescents interpret ambiguous and mildly negative social events?

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Prepared for submission to Journal of Abnormal Child Psychology

(See Appendix B for author instructions)

Running head:

Interpretative biases in social anxiety

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Abstract

Interpretative biases are assumed to play a major role in maintaining social anxiety. Specifically, socially anxious individuals display a tendency to interpret ambiguous social, but not non-social events, negatively and to interpret negative events in a catastrophic fashion. Whilst the research supports the operation of these biases in socially anxious adults little research to support the extension of this theory to children has been conducted. The aim of the current study is to determine whether social anxiety is associated with interpretative biases in adolescents. Interpretations were assessed using the Ambiguous Social Situations Questionnaire and the Social Events Catastrophisation Questionnaire both devised by Stopa and Clark (2000). Social anxiety was associated with a tendency to rank negative interpretations of ambiguous social, but not non-social situations, as more likely to come to mind and to rate them more believable. Similar findings were found with respect to catastrophic interpretations for mildly negative social events. Social anxiety was also associated with a tendency to generate negative interpretations in response to both types of social situation. The results provided support for the operation of both biases and the extension of cognitive theories of social anxiety from adults to adolescents.

Key Words: Social phobia, social anxiety; adolescents; interpretation biases.

Introduction

Cognitive theory proposes that specific types of negative appraisal characterise each anxiety disorder (Beck, Emery and Greenberg, 1985). In social anxiety, recent models assume that the disorder is maintained by the way in which anxious individuals attend to, interpret, and respond to, social situations (Clark and Wells, 1995; Rapee and Heimberg, 1997). The present study aims to investigate whether there is a relationship between social anxiety and interpretative biases in adolescents.

Social anxiety is triggered when individuals are in, or anticipate being in, a socially threatening situation. Individuals with social anxiety interpret social situations as more threatening than non-anxious individuals. At least two interpretation biases specific to social situations have been outlined. According to Beck, et al. (1985) individuals with social anxiety are more likely than their non-socially anxious counterparts to 1) interpret ambiguous social events in a negative fashion and 2) interpret mildly negative social events in a catastrophic (overly negative) manner. As a broad range of situations trigger social anxiety, the majority of sufferers are unable to completely avoid feared situations. However, as the anxiety response does not readily habituate despite repeated exposure to trigger situations these biases help to explain why social anxiety is maintained over time (Clark and Wells, 1995; Rapee and Heimberg, 1997). According to these models, in the absence of any other co-morbid Axis I conditions, interpretative biases should not be observed in relation to non-social situations.

Within the adult literature, there is a growing body of evidence to support the existence of these interpretative biases. Compared with non-anxious controls and individuals with obsessive-compulsive disorder, individuals with social phobia were more likely to interpret ambiguous self-referent social situations in a negative fashion (Amir, Foa and Coles, 1998). A further study by Stopa and Clark (2000) replicated and extended these findings. Specifically, individuals with social phobia were more likely than non-anxious controls and individuals with other anxiety disorders to interpret ambiguous social situations in a negative manner and mildly negative events as having catastrophic consequences.

In contrast, examination of the cognitive processes that maintain social anxiety in children and adolescents has only just begun. Whilst the research demonstrates that children have anxious thoughts about social evaluation (Vasey, Crnic and Carter, 1994) no models have been outlined to explain the maintenance of social phobia in childhood. As such, cognitive models of social anxiety developed for adults tend to be extended downwards to explain the disorder in childhood.

Current research supports the general idea that anxious children demonstrate a bias towards threat. Compared with non-anxious children, anxious children were more likely to perceive a range of hypothetical, ambiguous social and physical situations as threatening (Barrett, Rapee. Dadds and Ryan, 1996). However, interpretative biases were not specific to anxiety. Children with oppositional defiant disorder interpreted the ambiguous situations as more threatening than the anxious group. Despite this, the groups were differentiated by their responses. The anxious children were most likely to generate avoidant solutions, whereas children in the oppositional

group were more likely to respond aggressively. Furthermore, children with social anxiety did not interpret the social situations as more threatening than the physical situations or find the social situations more threatening than children with alternative anxiety disorders (Barrett et al, 1996). However, the small sample size and the high level of additional co-morbid anxiety disorders reported mean that it is premature to discard the specificity hypothesis especially as the specific content of the children's cognitions were not examined. It is possible that the perceived threat had different personal meanings for children in the anxiety and oppositional groups.

In another study, Bogels and Zigterman (2000) presented ambiguous social, separation and generalised anxiety situations to anxious children, normal non-disordered controls and children with externalising difficulties (attention deficit hyperactivity disorder, oppositional defiant or conduct disorder). They examined the children's actual cognitions by employing thought listing techniques and administering a range of Likert-scale questions that measured how the children would describe the situation, how they would feel, and what they would do. In-line with Beck et al.'s (1985) theory, the anxious children rated the situations as more dangerous and themselves as significantly less able to cope than both control groups. The anxious children were also more likely to report negative emotions than the externalising group and displayed a similar non-significant trend compared to the non-patient controls. However, it is possible that stronger between-group differences would have been observed if the anxious children had not had heterogeneous diagnoses and if the situations had been tailored to their particular fears. Unfortunately, no situation-diagnosis specific analysis was conducted.

An increased tendency to perceive social threat has been observed in socially anxious children. When asked to judge whether ambiguous social stories were threatening, children rated high in social anxiety were more likely than their non-anxious counterparts to judge the stories as scary and required fewer sentences to do so. Likert-scale ratings also revealed that the anxious children were more likely to report negative thoughts and feelings (Muris, Merckelbach and Damsma, 2000). However, as the study did not include non-social stories, situation-specific analyses could not be undertaken.

The research, whilst equivocal, provides some support for the proposal that socially anxious children are more likely than non-anxious children to interpret ambiguous social situations as threatening. Methodological flaws and weaknesses such as small sample sizes, failure to match the situations to the children's diagnoses, present non-social situations and access the actual cognitions of children may explain why the empirical evidence is inconclusive.

There is also some support for the existence of the second interpretative bias, namely the idea that socially anxious children interpret negative events more catastrophically than non-anxious children. After controlling for depression, anxiety was uniquely related to catastrophisation, overgeneralisation and personalisation in a sample of clinically anxious children and adolescents (Weems, Berman, and Silverman, 2001). Furthermore, anxiety sensitivity (which relates to the belief that anxious symptoms will have negative consequences for individuals) most strongly predicted catastrophisation.

Epkins (1996) demonstrated that socially anxious adolescents were more likely to report anxious cognitions and cognitive errors than non-anxious controls. Although there were no significant differences between the anxious and dysphoric groups in the number of anxious cognitions endorsed in response to social, athletic and academic vignettes there was a non-significant trend in the expected direction. The anxious group were more likely to endorse responses indicative of personalisation and overgeneralisation than the dysphoric group (Epkins, 1996). Again, this study was limited by the small sample size (n=14) and the absence of an anxiety scale that tapped the specific cognitions associated with social anxiety as opposed to more general anxious cognitions.

A further study by Magnusdottir and Smari (1999) investigated the way in which socially anxious and non-anxious adolescents appraised negative social and non-social events. Using Likert-scale ratings, the adolescents were asked to rate the situations in relation to themselves and to others with respect to the likelihood that the event would occur and the potential cost to the individual if it did occur. Self-reported symptoms of social anxiety were associated with higher predictions of threat and cost in response to self-referent social situations, independently of depression. There were no differences in the ratings for others or for the non-social situations. Smari, Petursdottir and Porsteindottir (2001) replicated this finding.

Whilst there is considerable continuity between the presentation of social phobia in children, adolescents and adults, the operation of specific interpretative biases in childhood social anxiety is yet to be confirmed or refuted by empirically robust research. There are considerable gaps within the literature and the research

investigating interpretative biases in socially anxious children and adolescents is not as comprehensive as the same literature in adulthood. However, it is important to gain a better understanding of what maintains social anxiety in childhood because it is one of the most common anxiety disorders in children and adolescents (Spence, 1997). The disorder can significantly interfere with schooling and the development of friendships (La Greca and Lopez, 1998) and can have long-term implications for functioning that can persist into adulthood (Bourdon et al. 1988). Improving our understanding of the disorder may also help us to develop more effective treatments to reduce the disabling impact of social anxiety which might, in turn, reduce the prevalence of the disorder in adulthood.

The goal of the current research is to confirm the preliminary evidence that exists to support the assumption that content-specific interpretative biases operate, i.e. that socially anxious adolescents are more likely to negatively interpret social situations than non-social situations. This study aims to extend Muris et al.'s (2000) findings and to determine whether a situation specific threat perception bias operates by presenting a range of ambiguous social and non-social situations to an adolescent sample. Muris et al. (2000) failed to include non-social control situations within their methodology. The study also aims to extend the findings of Magnusdottir and Smari (1999). Although they provided evidence to suggest that adolescents high in social anxiety perceived negative social events as more costly for the self, no information about the actual thoughts that the socially anxious adolescents had in response to the hypothetical situations was elicited. This study aimed to obtain such information by asking participants to report what they would think about themselves if they found themselves in a variety of mildly negative social situations and by asking participants

to rate their belief in a range of experimenter provided interpretations. The results of this study will help to determine whether socially anxious adolescents display content-specific interpretative biases similar to those evident in socially anxious adults. The hypotheses were 1) that social anxiety will be associated with a tendency to interpret ambiguous social, but not non-social, events negatively and 2) that social anxiety will be associated with a tendency to interpret mildly negative events in a catastrophic fashion.

An all female sample was used because participants were drawn from a non-clinical sample and girls tend to have higher levels of social anxiety (Wittchen, Stein, and Kessler, 1999). A female sample also reduced the number of variables that may have impacted upon the results. Adolescents aged 14-15 years old were requested to participate because the presentation of social anxiety in adolescents is more similar to that of adults than the presentation of social anxiety in younger children. In addition to this, participants this age were expected to have the cognitive skills and reading ability that was required in order for them to complete the questionnaires adequately.

Method

Design

The research was a cross-sectional questionnaire study that incorporated both a correlational and a between-groups design. Correlational analysis was used to determine whether there was an association between self-report measures of social anxiety and the interpretative biases outlined above. Participants with social anxiety scores in the upper and lower quartiles of one of the social anxiety measures were

then selected to form high and low social anxiety groups. These groups were compared to determine whether significant differences exist in the way in which adolescents with high and low levels of social anxiety interpret social and non-social situations.

Participants

One hundred and forty adolescents were recruited from a local secondary school. All participants were female and were in year 10 (aged 14-15 years old). Twelve participants had to be excluded from the study because they failed to complete at least one of the social anxiety measures.

Measures

Social Anxiety Scale for Adolescents (SAS-A)

The Social Anxiety Scale for Adolescents is a 22-item self-report inventory containing 18 items and 4 fillers that are scored using 5-point Likert-scales (La Greca, 1999). The questionnaire contains three subscales: fear of negative evaluation from peers (FNE); social avoidance and distress specific to new situations or unfamiliar peers (SAD-New); and social avoidance and distress experienced generally when in the company of peers (SAD-General). The scale is conceptually similar to the Fear of Negative Evaluation and the Social Avoidance and Distress Scales developed for adults (Watson and Friend, 1969) in an effort to extend the measurement of social anxiety to a younger population. The SAS-A is suitable for use with adolescents aged 12 to 18 years of age. A total SAS-A score of 50 and above is identified as useful marker for clinically significant social anxiety amongst

adolescents. In contrast, scores of 36 and below are useful for identifying "low socially anxious" adolescents (La Greca, 1999). The measure has good test-retest reliability for adolescents aged 13 to 15 years of age, retest reliabilities were: .78 for FNE, .72 for SAD-New, and .54 for SAD-General (Vernberg, Abwender, Ewell and Beery, 1998). The SAS-A can also discriminate between adolescents with and without social phobia (La Greca and Lopez, 1998). This measure assesses social anxiety within the context of peer relationships and was administered because the majority of the situations described in the interpretation questionnaires involved peers.

Social Phobia and Anxiety Inventory (SPAI)

The second measure of social anxiety was the Social Phobia and Anxiety Inventory (Turner, Beidel and Dancu, 1996). This measure is based upon the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV) criteria (American Psychiatric Association, 1994) and was included because it assesses symptoms of social anxiety across a range of social situations. It consists of 7-point rating scales that assess avoidance, cognitive and physical symptoms. An agoraphobia scale is also included to alert clinicians to the possibility that individuals may be suffering from panic disorder. A social anxiety score (called the difference score) is calculated by subtracting the agoraphobia score from the total score. The difference score has the most discriminative power (Turner et al., 1996) and for screening purposes a score of 60 is recommended, no lower limit indicative of low social anxiety has been identified. A score of 39 or higher on the agoraphobia subscale may be indicative of panic disorder. The inventory is suitable for

individuals aged 14 years and upwards and, has discriminative validity and is reliable (alpha = .97) for use with adolescents aged 14-18 years old (Clark et al., 1994).

Birleson Depression Scale (BDS)

The Birleson Depression Scale was administered to assess the degree of depressive symptoms that the participants experienced because depression is commonly co-morbid with social anxiety (Strauss and Last, 1993) and can affect the way in which individuals interpret information. The inventory is suitable for children aged 11 to 15 years of age and consists of 18-items that are rated on 3-point Likert-scales. Scores range from 0-36. The mean score and standard deviations for girls aged 14 and 15 years old is 10.96 (5.14) and 8.96 (4.21) respectively (Yule, 1997). It has good factorial (Birleson, 1981) and discriminative validity (Birleson, Hudson, Buchanan and Wolff, 1987).

Ambiguous Social Situation Interpretation Questionnaire (ASSIQ)

A modified version of the Ambiguous Social Situation Interpretation Questionnaire originally developed by Stopa and Clark (2000) was administered to investigate the way in which adolescents' interpreted ambiguous social and non-social events. Some of the questionnaire items were modified to make them more appropriate for use with adolescents. The new and modified items were based upon situations known to elicit social anxiety in adolescents (Hoffman, et al., 1999; Muris, et al., 2000). For example, the item "You ask a friend to go out for a meal with you in couple of days time and they refuse" was changed to "You ask a friend to go to the cinema with you at the weekend and they refuse". The questionnaire contained 14 ambiguous social and 10 non-social situations that were presented in a mixed order. Each situation was

followed by the question "Why?" and participants were asked to write down the first explanation that came to mind before turning the page to rank order 3 experimenter-produced interpretations for the event. One of the interpretations was negative and the remaining two were neutral. For the item "Some friends come over to watch a video. They leave as soon as it finishes" the three alternatives were: a) "Their parents had told them to come home when the video finished" (neutral), b) "They had homework to do for the next day" (neutral) and c) "They did not want to stay and talk to you" (negative). The negative and neutral interpretations were presented in a mixed order throughout the questionnaire. Finally, once the questionnaire was completed, the participants were asked to rate how much they would believe each of the interpretations to be true if they found themselves in that situation on a scale of 0 (not at all) to 8 (extremely).

Social Event Catastrophisation Questionnaire (SECQ)

A modified version of the Social Event Catastrophisation Questionnaire also devised by Stopa and Clark (2000) was used to assess catastrophic interpretations of mildly negative social events. Again, this questionnaire was modified for use with adolescents guided by Hoffman et al. (1999) and Muris et al.'s (2000) research. The questionnaire described 10 mildly negative social events. Each description was followed by the question "What, if anything, would this say about you or tell you about yourself?" Participants were asked to write the first response that came to mind if they found themselves in the situation before turning the page to rank order three experimenter-provided interpretations. One alternative involved an extreme negative judgement about oneself and/or the future and the other two were either neutral or

involved a negative judgement of someone else. For the event, "You ask someone you fancy if he/she wants to go out on a date with you and they say no" the interpretations were "I'm unattractive no-one will ever want to go out with me" (enduring negative self-judgement), "I'm not his/her type" (neutral), "He/she is already going out with someone" (neutral). The negative and neutral interpretations were presented in a mixed order. Finally, the participants were asked to rate how much they would believe each interpretation to be true if they were in that situation on a scale of 0 (not at all) to 8 (extremely).

Pilot study

The modified ASSIQ and SECQ were piloted to check that the instructions and wording was understandable to this age group. Nine adolescents, aged between 12 and 15 ages old, completed the ASSIQ and SECQ and were asked to provide written feedback about how easy the instructions were to understand. Upon the basis of the feedback received an example of how to rate belief in the experimenter-provided interpretations was included in both questionnaires. The responses to the open-ended responses were surveyed to check that the answers were appropriate as it has been suggested that children and adolescents have less insight into their cognitions than adults (Kendall and Chansky, 1991). The answers to the open-ended questions were satisfactory.

Scoring the ASSIQ and SECQ questionnaires

For both the ASSIQ and the SECQ mean rank and belief scores for the negative and neutral experimenter-provided interpretations were calculated for each participant. A

rank score of 1, 2, or 3 was given depending on whether the explanation was ranked first, second or third.

The responses to the open-ended questions were classified according to a predetermined set of categories. For the ASSIQ the participant generated responses were classified as negative, neutral, affective response, and other. For social situations, responses indicating negative evaluation of the self by the self or by others, "such they are criticising me" were classified as negative. For the non-social situations responses were classified as negative if they suggested serious physical or mental harm to the self such as "I'm having a heart attack". Neutral responses were defined as any response that was a neutral or positive deduction from the circumstances such as "It's a coincidence" or "I'm unfit". The affective response category referred to responses that described an emotional state of anxiety, worry or upset, for example, "I am stressed". Finally, responses that did not relate to any of these categories such as "They are being immature" or responses with insufficient information were classified in the other category.

For each participant the percentage of responses classified as belonging to the negative and neutral category for the social and non-social situations were calculated. Due to the small number of affective responses, no further analysis was undertaken. This yielded a final set of two categories, negative and neutral for both the social and non-social situations.

For the SECQ, the participant-generated responses to the open-ended questions were coded in two stages. The answers were first classified into one of three categories,

self-responsibility, other-attributes responsibility, and other. A response was classified as self-responsibility if the respondent indicated they were responsible for the situation for example, "I have...". Other-attributes responsibility related to responses indicating that another person considered the respondent responsible for the situation, for example, "They think I ...". The other category was used when no attribution of responsibility was made, for example "We have different points of view", if insufficient information was provided or if the respondent attributed responsibility to another person.

Responses classified as self-responsibility or other-attributes responsibility were then classified as catastrophic, negative, coping or affective. A response was coded as catastrophic if the respondent, or another, indicated that the respondent had a negative enduring characteristic or that their behaviour would have enduring negative consequences, examples include, "I will never be able to give a presentation again" or "They think I am complete fool". The negative category was used if the respondent, or another, judged the respondent or their actions negatively but not catastrophically, "I made a mistake" or "They think am I forgetful". Coping statements referred to responses that indicated that the respondent, or another, had made a positive or neutral judgement about the respondent such as "I need more practice" or "They won't notice my mistake". Finally, a response was classified as affective if it indicated that the respondent was feeling anxious, embarrassed or self-conscious, for example, "I am nervous" or "They think I am shy".

For each participant, the percentage of responses classified as belonging to the catastrophic and coping categories were calculated. Due to the small number of responses classified as other-attributes responsibility, this category was combined

with the self-responsibility category as both related to evaluations of the respondent. In addition, a negative category was created which combined the catastrophic, negative, and affective responses. This yielded three categories, catastrophic, coping and negative.

To assess the reliability of the categorisation schemes two raters (both blind to the participant's score on the social anxiety measures) independently used the coding schemes on 30 ASSIQs and 30 SECQs. If participants provided more than one response to a question all parts of the response were coded, therefore some answers belonged to more than one category. Reliability was calculated using the method recommended by Davidson, Robbins and Johnson (1983). The total number of agreed classifications was divided by the larger number of classifications used by either of the two raters. This method yielded a mean proportion agreement for the ASSIQ of 0.94 (range 0.83-1.00) and a mean proportion agreement for the SECQ of 0.86 (range 0.58-1.00). One rater then categorised the remaining questionnaires.

Procedure

Consent was sought from both the participants and their parents. If parents did not want their children to participate in the study they were required to return an opt-out slip at the bottom of the parental consent form. A couple of weeks later the children were provided with written information about the research and were required to opt-in to the study. It was believed that children aged 14 to 15 years old would feel able to decline to participate in the study if they so desired. They were informed that participation was optional and that their answers would be anonymous. They were

told that the aim of the study was to investigate the way in which young people interpreted different events.

Having signed the consent forms, participants completed the questionnaire packs during school time under the supervision of their teachers. They were instructed to complete the questionnaires in the order presented in the pack (ASSIQ, SECQ, SAS-A, SPAI and BDI) to minimise any priming effects that might have occurred if the self-report measures were completed before the interpretation questionnaires. Similarly, the ASSIQ was completed before the SECQ because the presentation of negative events might have biased the way in which the ambiguous events were interpreted.

Once all the questionnaires had been returned participants were given an information sheet about the study. It was possible that participation in the study may have caused distress by alerting the participants to their own social anxiety. The sheet therefore included information about the nature of social anxiety and where they could get help if they felt it was appropriate. Given the nature of social anxiety and the desire for self-presentation, useful website addresses were also provided. A contact number was included if they wanted additional information about the study or if they wanted to withdraw their data.

Results

Analysis

The statistical package SPSS 11.0 for windows was used to analyse the data. With the exception of the BDS, the scores on all of the self-report measures were normally

distributed. The BDS scores were transformed using a log transformation that normalised the distribution. To investigate differences between overall rank scores and self-generated interpretations for the social and non-social situations the Wilcoxon Sign Test was used and to determine differences between the belief ratings paired t-tests were conducted. Spearmans rho correlations were conducted to determine the strength of the association between the self-report measures and the rank scores (ordinal data) and the open-ended responses (categorical data). Pearson correlations were conducted to determine the strength of the association between the belief scores (scale data) and the self-report measures. The SAS-A FNE score was also included in the correlational analysis because this construct has been used to differentiate between groups of socially anxious and non-anxious adults (Stopa and Clark, 1993). To investigate whether there were any differences between the rank scores and the self-generated responses of the high and low social anxiety groups Mann Whitney analysis was conducted. Independent t-tests were conducted to examine between-group differences in the belief scores. When appropriate, Bonferroni corrections were made to control for type I errors. The p values quoted within the text are those produced after the application of the Bonferroni correction and should be regarded as significant if $p < .05$.

It must be noted that some participants did not complete all of the questionnaires. Some participants failed to complete both the social anxiety measures whereas others did not provide responses to the open-ended questions, rank scores or belief ratings. The number of participants included within each calculation is noted in the tables.

Sample characteristics

Table 1 displays the overall mean scores for each of the self-report measures. The sample scores for the SAS-A were slightly higher but comparable with the norms reported by La Greca and Lopez, (1998). The sample scores for the SPAI fell between the norms obtained for an adolescent sample of social phobics and an adolescent sample of normal controls (Clark, et al, 1994). The sample scores for the BDS also fell within normal limits (Yule, 1997).

Correlations between the self-report measures

The SAS-A total score was highly correlated with the SPAI difference ($r = .62$, $p < .01$), the SPAI agoraphobia ($r = .48$, $p < .01$) and the BDS scores ($r = .48$, $p < .01$). In contrast, there were weak correlations between the BDS score and the SPAI difference ($r = .17$, $p > .05$) and the SPAI agoraphobia scores ($r = .14$, $p > .05$).

Ambiguous social situation questionnaire (ASSIQ)

Rank scores for the negative and neutral interpretations

The mean rank scores are displayed in Table 2. Overall, the participants indicated that the neutral interpretations for both the social ($T = -8.85$, $p < .001$) and non-social situations ($T = -9.57$, $p < .001$) were more likely to occur to them than the negative explanations. To determine whether there was an association between participants' scores on self-reported anxiety and depression and the way they ranked the negative and neutral interpretations correlations were conducted. The results are shown in Table 3. For the social situations, there were significant negative and positive correlations between the rank scores for the negative and neutral interpretations

(respectively) and the SAS-A total and FNE scores, the BDS score and the SPAI Agoraphobia score. There was also a positive correlation between the rank score for the neutral explanations and the SPAI difference score. There were no significant correlations between the self-report measures and the rank scores for the non-social situations. Together, these results indicate that high scores on the social anxiety and depression measures were associated with a lower rank score (interpretation is more likely to come to mind) for the negative interpretations for the social but not for the non-social situations.

Belief in the negative and neutral interpretations

The mean belief scores are also shown in Table 2. Overall, participants rated the neutral interpretations as more believable than the negative interpretations for both the social ($t(107) = -15.80$, $p < .001$) and non-social situations ($t(107) = -27.43$, $p < .001$). The mean scores also indicated that the negative interpretations for the social situations were more believable than the negative interpretations for the non-social situations ($t(107) = 9.62$, $p < .001$).

To determine whether there were any significant associations between the belief ratings and the self-report measures, correlations were conducted. The results are displayed in Table 3. For the social situations, the SAS-A total and FNE scores and the SPAI difference score were positively correlated with belief in the negative interpretation. To control for the effect of depression on belief in the negative interpretations, the analyses were repeated partialing out the BDS score. The associations between the belief ratings and the SAS-A total score ($r = .21$, $p < .05$),

SAS-A FNE ($r = .27$, $p < 0.05$) and SPAI difference scores ($r = .32$, $p < 0.01$) continued to be significant. To control for the effect of panic symptoms on belief in the negative interpretations the analyses were repeated partialing out the agoraphobia score. The correlations continued to hold for the SAS-A FNE ($r = .35$, $p < .01$) and SPAI scores ($r = .32$, $p < .01$) but not for the SAS-A total score ($r = .20$, $p > .05$). Belief in the neutral interpretations was not correlated with any of the measures. With respect to the non-social situations, the SPAI difference score was positively correlated with the neutral explanations. Overall, the results indicate that high scores on the SAS-A FNE and SPAI are associated with a stronger belief in the negative interpretations for the social, but not the non-social situations after controlling for depression and panic symptoms.

Responses to the open-ended questions

Table 2 shows the mean percentage of negative and neutral interpretations generated for each type of ambiguous situation. More negative ($T = -7.89$, $p < .001$) and fewer neutral interpretations ($T = -7.07$, $p < .001$) were made for the social than the non-social situations. This indicated that the participants interpreted the social situations more negatively than the non-social situations.

The results of the correlational analysis are shown in Table 4. With respect to the social situations, the mean percentage of negative responses generated were significantly correlated with the SAS-A total, SAS-A FNE and BDS scores. A negative correlation was also found between the percentage of neutral responses made in response to the social situations and BDS score. With respect to the non-social situations, there was a positive correlation between the negative interpretations

score and BDS score. Whilst there were no associations between participants' open-ended responses and social anxiety scores, the agoraphobia scores were negatively correlated with the neutral interpretations. The results indicate that scores on the SAS-A were associated with negative interpretations for the social but not the non-social situations. Finally, agoraphobia scores were associated with a tendency to generate fewer neutral interpretations in response to the non-social situations.

Social events catastrophisation questionnaire (SECQ)

Rank scores for the catastrophic and non-catastrophic interpretations

Table 5 shows the mean ranks for the catastrophic and non-catastrophic interpretations. Overall, the catastrophic interpretations were ranked less highly than the non-catastrophic interpretations, indicating that the catastrophic interpretations for events were less likely to come to mind ($T = -8.46$, $p < .001$).

To determine whether there were any significant associations between the scores on the anxiety and depression measures and the way in which participants ranked the interpretations correlational analyses were conducted. The results are shown in Table 6. There were significant negative correlations between anxiety and depression and the catastrophic interpretations and significant positive interpretations between anxiety and depression and the non-catastrophic interpretations. Overall, higher social anxiety, depression and agoraphobia scores were associated with lower rank scores for the catastrophic interpretations (indicating that they are more likely to come to mind).

Belief in the catastrophic and non-catastrophic interpretations

Table 5 shows the mean belief ratings for the catastrophic and non-catastrophic interpretations. The catastrophic interpretations were rated as less believable than the non-catastrophic interpretations ($t(94) = -14.07$, $p < .001$). The results of the correlational analyses, conducted to determine whether there was an association between the anxiety and depression scores and the two types of interpretation are shown in Table 6. The SAS-A total, SAS-A FNE, SPAI difference and SPAI agoraphobia scores were all positively correlated with belief in the catastrophic interpretations. All these associations held after controlling for depression (SAS-A, $r = .43$, $p < .001$, SASA-FNE, $r = .49$, $p < .001$, SPAI, $r = .32$, $p < .01$, SPAI Ag., $r = .29$, $p < .05$) and after controlling for agoraphobia (SAS-A, $r = .36$, $p < .001$; SAS-A FNE, $r = .44$, $p < .001$, SPAI, $r = .45$, $p < .001$). There were no significant associations between the self-report measures and the non-catastrophic interpretations. In sum, self-reported social anxiety was positively associated with belief in the catastrophic, but not the non-catastrophic, interpretations after controlling for depression and panic.

Response to the open-ended questions

Table 5 shows the mean percentage of the catastrophic, negative and coping statements made. Whilst, nearly half of the self-generated responses were negative (described themselves or their actions in a negative way) fewer than 10% were catastrophic (referred to an enduring negative characteristic of the self or negative consequences for the future). The results of the correlational analysis between the anxiety and depression scores and the self-generated interpretations are shown in Table 7. Positive correlations were found between the catastrophic and negative

interpretations and SAS-A total, SAS-A FNE, SPAI difference scores. The BDS scores were only significantly correlated with the catastrophic interpretations. Furthermore, self-generated coping statements were negatively associated with the SPAI difference score. Thus, social anxiety and depression were associated with a tendency to generate catastrophic and negative interpretations for mildly negative social events.

Comparison of the high and low socially anxious groups.

Group classification

The sample was split into two groups based on the upper and lower quartiles of the SAS-A total score. Social anxiety lies on a continuum (Rapee and Heimberg, 1997) and this created a high and a low social anxiety group. High socially anxious adults offer an appropriate analogue group for studying interpretative biases in social phobia because they differ in a similar way to non-anxious controls and clinically anxious groups (Stopa and Clark, 2001). The SAS-A total score was used rather than the SPAI difference score because the former measure was specifically constructed for use with adolescents and because the scale is designed with cut-off scores indicative of high and low social anxiety. In addition, the SAS-A total score included a number of items that relate to fear of negative evaluation and, therefore, the results could be more readily compared with similar studies within the adult literature.

Although the SPAI is more useful as a clinical instrument, it was originally developed for adults and has no specifically identified lower cut-off indicative of low social anxiety. Despite this, to provide an additional level of analysis to test the research hypotheses some analyses using the upper and lower quartiles as defined by

the SPAI difference score was undertaken where group sizes were greater than 20. Below this, power was likely to be too weak. Using this procedure, the rank scores for the ASSIQ and SECQ were analysed in this manner.

For the SAS-A, the upper quartile group had total scores greater than or equal to 59 and the lower quartile group had scores equal to or less than 39. Although the SAS-A is not a diagnostic tool, all the participants within the upper quartile had scores above the suggested cut-off score of 50 and 78.13% of those in the lower quartile had scores representative of adolescents low in social anxiety (La Greca, 1999). It must be noted that the high socially anxious group had higher depression scores than the low anxiety group ($t(61) = -5.24$, $p < .001$). For the SPAI, the participants included within the upper quartile group had difference scores greater or equal to 72 and the lower quartile group had scores equal to or less than 36. All the participants in the high anxiety group had difference scores above the suggested cut-off of 60 and all participants in the low anxiety group had difference scores below the mean score of 43 for a non-clinical adolescent sample. There was no significant between-group differences for depression scores ($t(39) = -1.3$, $p > .05$)

ASSIQ

Table 8 displays the mean rank scores for the high and low social anxiety groups based upon the SAS-A upper and lower quartiles. With respect to the social situations the high anxious group ranked the negative interpretations as more likely ($U = 238.50$, $p < .01$), and the neutral interpretations as less likely ($U = 213.50$, $p < .01$), to come to mind than the low anxious group. There were no differences in the way in which the high and low anxiety groups ranked the non-social interpretations. When

the analysis was repeated using the high and low social anxiety groups as defined by the SPAI no between-group differences were identified.

The mean belief scores for the two groups are shown in Table 8. To determine whether there were any significant between-group differences in belief, a 2 (anxiety group) x 2 (situation type) x 2 (interpretation valance) ANOVA was conducted. A significant interaction was found ($F(1, 52) = 12.43$, $p < .001$) and t-tests were conducted to investigate the interaction. For the social situations, the high anxiety group believed the negative interpretations more strongly than the low anxiety group ($t(52) = -2.70$, $p < .001$). The groups did not differ in their neutral interpretations of the social situations or for either interpretation for the non-social situations.

The mean percentage of each interpretation type generated by the high and low anxiety groups in response to the open-ended questions are shown in Table 9. Compared with the low anxiety group, the high anxiety group was significantly more likely to interpret the social situations negatively ($U = 126.50$, $p < .01$). There was a non-significant trend for the high anxiety group to make fewer neutral interpretations than the low anxiety group (this would have been significant if the p-value had not been Bonferroni adjusted). There were no between-group differences for the interpretations generated in response to the non-social situations.

SECQ

The high anxiety group (defined by the SAS-A) ranked the catastrophic interpretations as more likely to come to mind ($U = 159.00$, $p < .01$), and the non-catastrophic interpretations as less likely to come to mind ($U = 158.50$, $p < .01$), than

the low anxiety group. Additional analysis using the high and low groups defined by the SPAI difference score confirmed these findings ($U = 112.50$, $p < .05$; $U = 111.00$, $p < .05$, respectively).

To determine whether the high anxiety group believed the catastrophic interpretations more strongly than the low anxiety group a 2 (anxiety group) x 2 (interpretation valence) ANOVA was conducted. A significant interaction was found ($F(1,47) = 16.54$, $p < .001$) and t-tests were conducted to investigate the interaction. The results indicated that the high socially anxious group was significantly more likely to believe the catastrophic interpretations than the low socially anxious group ($t(47) = -4.36$, $p < .001$).

Finally, analyses were conducted to determine whether the high and low social anxiety groups generated different types of interpretation in response to the mildly negative events. The high anxiety group was significantly more likely than the low anxiety group to make catastrophic ($U = 225.50$, $p < .01$) and negative interpretations ($U = 242.00$, $p < .05$). There was no significant between-group difference with respect to the coping statements, however, the high socially anxious group displayed a tendency to generate fewer responses of this type (this difference would have been significant if the p-value had not been adjusted to correct for type I errors).

Discussion

The results will be discussed in relation to the two research hypotheses stated in the introduction. Firstly, that social anxiety is associated with a tendency to interpret

ambiguous social, but not non-social, events negatively. Secondly, that social anxiety is associated with a tendency to interpret mildly negative non-ambiguous events in a catastrophic fashion.

With respect to the first hypothesis the results from the ASSIQ provide evidence to support the proposal that social anxiety in adolescents is associated with a tendency to interpret ambiguous social situations negatively. For the social situations, the analysis revealed that the negative interpretations were 1) more likely to come to mind, 2) believed more strongly and 3) more likely to be generated in response to the open-ended questions in individuals high in self-reported social anxiety. Consistent with the content-specificity hypothesis no associations were found between social anxiety and the way in which the non-social situations were interpreted.

With respect to the second hypothesis, the results from the SECQ indicate that self-reported social anxiety in adolescents was associated with a tendency to interpret mildly negative social events in a catastrophic fashion. Responses to the rank, belief and open-ended questions revealed that self-reported social anxiety was associated with an increased likelihood that catastrophic interpretations would come to mind and with a tendency to believe, and generate, catastrophic interpretations in response to mildly negative social events.

The results from both parts of the study are consistent with those reported by Stopa and Clark (2000) who employed a similar methodology to investigate the interpretative biases associated with social anxiety in adults. The study therefore provides preliminary support for the downward extension of the models of social

anxiety proposed by Clark and Wells (1995) and Rapee and Heimberg (1997) to adolescents aged 14-15 years old. As suggested by Stopa and Clark (2000) the association between self-reported social anxiety and the tendency to interpret ambiguous and mildly negative social events in a more negative and catastrophic fashion is likely to increase the perception of threat and anxiety. This may, in turn, increase avoidant behaviour, adversely impact upon social functioning and relationships with others, reduce feelings of social efficacy, prevent individuals from attending to non-threatening aspects of the environment and critically evaluating their beliefs. These consequences will act collectively to maintain social anxiety. It should, however, be noted that the correlations reported were modest in size compared with those found by Stopa and Clark (2000) possibly because the original study used a clinical population. Given the continuity hypothesis (Rapee and Heimberg, 1997) more significant differences may be expected between clinically anxious and non-anxious groups. Some researchers have reported a curvilinear relationship between internalising problems and cognitive distortions (Leung and Wong, 1998). Therefore, the current study needs to be repeated using a clinical sample.

The study builds upon the literature on social anxiety in childhood. It has extended the findings reported by Muris et al (2000) by demonstrating that the association between social anxiety and the perception of threat is specific to social situations. It also extends Magnusdottir and Smari's (1999) research, by providing information about the type of thoughts that might be triggered when adolescents encounter ambiguous and mildly negative social situations. Furthermore, the results consolidate the finding by Epkins (1996) who found that socially anxious adolescents

were more likely to endorse cognitive errors than non-anxious controls. However, the results also differ. Epkins found no differences between the socially anxious and dysphoric groups in relation to catastrophisation, whereas, in the present study, belief in the catastrophic interpretations was uniquely related to social anxiety after controlling for symptoms of depression and panic. It is therefore possible that the increased specificity of the measures used and the improved match between the type of anxiety assessed and the stimulus situations presented may account for these differences.

These results provide evidence to support the application of cognitive techniques to treat social anxiety in adolescents. The interpretative biases observed in this study are likely to contribute to the maintenance of social anxiety as described in the models by Clark and Wells (1995) and Rapee and Heimberg (1997). It would therefore seem appropriate to help adolescents with social anxiety to overcome these biases by learning to critically evaluate the social cues that they use to determine the presence of threat and to search for additional, contradictory information that can be used to modify their beliefs. It may also be useful to help adolescents with social anxiety learn to be more aware of the cognitive processes that contribute to negative self-beliefs and threat by assisting them to make more realistic, and less catastrophic, judgements in response to negative events.

The power of non-negative thinking hypothesis claims that negative thoughts are more strongly associated with feelings of anxiety than positive thoughts (Kendall and Chansky, 1991). This hypothesis provides the rationale for the development of cognitive treatments that aim to modify dysfunctional assumptions to alleviate

childhood anxiety. Although positive cognitions were not assessed directly, the results of this study lend some support to this hypothesis. Conviction in the negative and catastrophic interpretations was more strongly associated with anxiety than conviction in the neutral and non-catastrophic interpretations. For the ASSIQ, social anxiety was associated with the generation of more negative but not fewer neutral interpretations for events. For the SECQ, social anxiety was associated with both the generation of negative interpretations and the reduced generation of coping statements. The results therefore indicate that children may benefit from interventions that specifically target overly negative or threat-orientated interpretations and aim to make them less dysfunctional.

Overall, the participants indicated that the negative interpretations for the social situations were more likely to come to mind and were more believable than the negative interpretations for the non-social situations. This is in-line with the developmental concerns of adolescents as indicated by Vasey et al. (1994) and the observation that social fears are common in this age group (Essau, Conradt and Petermann, 1999). It would be interesting to repeat the study with a range of age groups to see if/when this changes.

Whilst the main findings of the present study are consistent with cognitive models of social anxiety the high social anxiety group had significantly higher depression scores than the low social anxiety group. It is therefore possible that the relationship between social anxiety and interpretative style may be accounted for by co-morbid symptoms of depression. However, all of the significant correlations between the belief ratings for the negative interpretations on both the ASSIQ and SECQ were

unaffected after controlling for depression indicating that there was a specific association between social anxiety and interpretative style. Unfortunately, due to the nature of the data, depression could not be controlled for with respect to the rank and open-ended responses. It is possible that the depressive symptoms were secondary to the symptoms of social anxiety as suggested by Stein et al. (2001).

The absence of a measure to assess general anxiety or other types of anxiety disorder did not permit investigation of whether the findings could be attributed to anxiety diagnoses other than social anxiety. However, social anxiety was more strongly associated with the tendency to interpret social situations negatively than symptoms of panic (as indicated by the agoraphobia scale within the SPAI) and all but one of these associations remained even after partialing out the agoraphobia scores. As might be predicted by the content specificity hypothesis (see Clark et al., 1997), symptoms of panic were associated with the tendency to generate fewer neutral and more negative interpretations for non-social (many of which described physical symptoms of anxiety) but not the social events. Therefore, the study also provided evidence to indicate how symptoms of social anxiety and agoraphobia may differentially impact upon the interpretation of ambiguous social and non-social events. To clarify these relationships, future studies that include control groups with alternative anxiety disorders are required.

Although the findings of the study rely exclusively upon self-report it has been claimed that children are the best informants of their social anxiety experiences (La Greca, 2001) because of the internal nature of social anxiety. Kendall and Chansky (1991) suggest that anxious children try to present a non-anxious image to others and

keep their fears to themselves. This may be particularly salient for adolescents who fear negative evaluation from others. Consistent with this, parents have been found to be poor informants of internalising disorders in their children (Loeber, Green, and Lahey, 1990). Young children can provide reliable reports of anxiety (Cobham and Rapee, 1999), the reliability of which increase with age (Lewinson, Zinbarg, Seeley, Lewinson and Sack, 1997). Taken together, the reliance upon adolescent self-report may not be a significant limitation. Given the desire for self-preservation it is possible that the participants' responses did not reflect how they would interpret events (Schniering, Hudson and Rapee, 2000), however, anonymising the responses should have helped to tackle this problem.

The situations included in the ASSIQ and SECQ reflected the fears of socially anxious children that are reported within the literature. Despite this, it is possible that real-life situations might not be appraised in the same way as the hypothetical situations included the questionnaires. The use of role-played scenarios and video clips might increase the perceived reality of the stimulus situations and help to determine whether conclusions from studies using hypothetical situations approximate to "real-life" situations. However, it has been suggested that anticipatory and retrospective judgements about social situations play a more important role in the interpretative process than inferences made "on-line" due to the inward focus that individuals with social anxiety adopt in situ (Hirsch and Matthews, 2000)

The inclusion of open-ended questions is a particular strength. No other studies investigating social anxiety in adolescents have attempted to gain direct access to

such thoughts. As well as validating the conclusions drawn from the rank and belief data they provide an insight into the thoughts adolescents have in response to ambiguous and mildly negative social situations. Whilst it has been claimed that open-ended questions may not be appropriate for use with children because they have poorer cognitive insight than adults (Kendall and Chansky, 1991), the current study reveals that adolescents aged 14-15 years old have at least some access into their thoughts. However, it must be noted that some participants failed to answer the open-ended questions and it is possible that they misunderstood the instructions, lacked motivation or did, indeed, lack insight. Nevertheless, the use of a multiple question format allowed information to be obtained from a large number of adolescents with different intellectual abilities.

Interpretative biases similar to those found in this study of adolescent girls are likely to exist in socially anxious male adolescents and, in younger children demonstrating social-evaluative fears. However, this assumption needs to be confirmed by future research. Given the observation that some children with social anxiety display social skill deficits (Spence, Donovan and Brechman-Trussaint, 1999; Ginsburg, La Greca and Silverman, 1998) it may also be useful to clarify the extent to which the interpretations are biased rather than a realistic appraisal. Individuals with social skill deficits will find social situations more threatening and difficult to cope with particularly if they have previous experiences of peer rejection. However, adults with social phobia underestimate their social competence even after differences in performance are taken into account (Stopa and Clark, 1993, Rapee & Lim, 1992). It is possible, but currently undetermined whether, similar biases occur in socially anxious adolescents. Whilst cross-sectional designs can identify associations between

variables they do not enhance our understanding of how social anxiety changes or develops over time. Prospective, longitudinal studies that employ follow-up methodology are needed to determine why characteristic interpretative styles develop and how enduring they are.

To conclude, social anxiety in adolescent girls is associated with a tendency to interpret ambiguous and mildly negative social events in a more negative fashion than their low socially anxious counterparts. The findings are consistent with the basic assumptions underlying the models of social anxiety proposed by Clark and Wells (1995) and Rapee and Heimberg (1997). However, many of the assumptions, central to the models (see Clark 2001), remain unexplored with respect to children. It is not known, for example, whether children and adolescents with social anxiety focus inwards towards physiological symptoms of anxiety, whether they construct an unfavourable image of themselves that is assumed to reflect how others see them, or whether they engage in biased post-event processing. If the model is to be applied to children and adolescents then all of these assumptions need to be verified with this population.

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Tables

Table 1:

Participant characteristics. Means and standard deviations (in parentheses) for the self-rating scales.

Variable	*N*	*M (SD)*
SAS-A Total	(128)	48.52 (13.33)
SAS-A Fear of Negative Evaluation	(128)	21.93 (7.53)
SAS-A SAD-NEW	(128)	18.12 (4.79)
SAS-A SAD-GEN	(128)	8.47 (3.16)
SPAI Difference	(83)	54.88 (28.04)
SPAI Agoraphobia	(83)	24.73 (14.40)
Birlesdon Depression Scale	(125)	12.14 (5.45)

Note: SAS-A, Social Anxiety Scale for Adolescents- SAD-NEW, Social avoidance and distress - new situations- SAD-GEN, Social Avoidance and Distress -general.

Table 2:

Means and standard deviations (in parentheses) for the Ambiguous Social Situation Interpretation Questionnaire.

Question type	Situation	
	Social	Non-social
Rank score[a] (1-3) (n=123)		
Negative interpretation	2.47 (0.34)	2.76 (0.27)
Neutral interpretation	1.75 (0.18)	1.61 (0.15)
Belief ratings (0-8) *(n=108)*		
Negative interpretation	3.32 (1.26)	2.25 (1.18)
Neutral interpretation	5.32 (0.90)	5.42 (0.87)
Open-ended interpretations (%)(n=91)		
Negative	28.19 (17.80)	4.43 (8.10)
Neutral	64.13 (18.48)	83.12 (15.44)

[a] A lower score indicates that the interpretation is more likely to come to mind.

Table 3:

Correlations between self-rating scales and the rank and belief rating scores for the Ambiguous Social Situation Interpretation Questionnaire

	Social situations		Non-social situations	
	Negative interpretation	Neutral interpretation	*Negative interpretation*	Neutral interpretation
Rank scores				
SAS-A Total (n=123)	-.31** .00	.34** .00	-.12 .17	.12 .20
SAS-A FNE (n=123)	-.34** .00	.38** .00	-.06 .55	.05 .56
Birlesdon depression scale (n=121)	-.28** .00	.28** .00	-.16 .09	.14 .13
SPAI difference (n=80)	-.18 .10	.24* .03	-.14 .21	.15 .19
SPAI Agoraphobia (n=80)	-.22* .05	.26* .02	-.08 .47	.08 .46
Belief ratings				
SAS-A Total (n=108)	.28** .00	-.05 .59	.08 .42	.12 .22
SAS-A FNE (n=108)	.33** .00	-.12 .14	-.03 .79	.12 .24
Birlesdon depression scale (n=106)	.17 .07	-.14 .14	.06 .56	-.03 .76
SPAI difference (n=75)	.34** .00	.06 .60	.17 .14	.25* .03
SPAI agoraphobia (n=75)	.20 .09	-.05 .65	.18 .13	-.07 .57

Note: SAS-A, Social Anxiety Scale for Adolescents- FNE, Fear of Negative Evaluation- SPAI, Social Phobia and Anxiety Inventory.

** $p<0.01$, *$p<0.05$

Table 4:

Correlations between the self-rating scales and the open-ended responses for Ambiguous Social Situation Interpretation Questionnaire.

	Social situations		Non-social situations	
	Negative interpretations	Neutral interpretations	Negative interpretations	Neutral interpretations
SAS-A Total (n=90)	.29** .01	-.20 .06	.08 .47	-.12 .28
SAS-A FNE (n=90)	.27* .01	.-18 .10	.06 .56	-.06 .58
Birlesdon depression scale (n=87)	.25* .02	-.26* .02	.19 .08	-.11 .33
SPAI difference (n=64)	.23 .07	-.15 .25	.08 .53	-.22 .08
SPAI agoraphobia (n=64)	.18 .16	-.18 .16	.06 .62	-.27* .03

Note: SAS-A, Social Anxiety Scale for Adolescents- FNE, Fear of Negative Evaluation- SPAI, Social Phobia and Anxiety Inventory.

** $p<0.01$, *$p<0.05$

Table 5:

Mean and standard deviations (in parentheses) for the Social Events Catastrophisation Questionnaire.

Question Type	*N*	*M (SD)*
Rank scores[a] *(0-3)*		
Catastrophic interpretations	(121)	2.56 (0.43)
Non-catastrophic interpretations	(121)	1.71 (0.22)
Belief ratings (0-8)		
Catastrophic interpretations	(95)	3.15 (1.44)
Non-catastrophic interpretations	(95)	5.42 (0.92)
Open-ended interpretations (%)		
Catastrophic	(121)	8.79 (13.21)
Negative	(121)	48.93 (24.89)
Coping	(121)	23.71 (17.25)

[a] A lower score indicates that the interpretation is more likely to come to mind.

Table 6:

Correlations between self-rating scales and the rank and belief rating scores for the Social Event Catastrophisation Questionnaire.

	Rank scores		Belief ratings	
	Catastrophic	Non-catastrophic	Catastrophic	Non-catastrophic
SAS-A Total	-.39**	.39**	.45**	-.04
	.00	.00	.00	.68
	n=121	n=121	n=95	n=95
SAS-A FNE	-.38**	.38**	.48**	-.04
	.00	.00	.00	.71
	n=121	n=121	n=95	n=95
Birlesdon depression scale	-.24**	.24**	.16	.00
	.01	.01	.13	.99
	n=119	n=119	n=93	n=93
SPAI difference	-.32**	.32**	.53**	.05
	.01	.00	.00	.72
	n=79	n=79	n=68	n=68
SPAI agoraphobia	-.44**	.43**	.31*	-.08
	.00	.00	.01	.52
	n=79	n=79	n=68	n=68

Note: SAS-A, Social Anxiety Scale for Adolescents- FNE, Fear of Negative Evaluation- SPAI, Social Phobia and Anxiety Inventory.

** $p<0.01$, *$p<0.05$

Table 7:

Correlations between the self-rating scales and the open-ended response for the Social Events Catastrophisation Questionnaire.

	Catastrophic Interpretations	Negative interpretations	Coping statement
SAS-A Total	.28**	.25**	-.13
(n=120)	.00	.01	.17
SAS-A FNE	.33**	.28**	-.10
(n=120)	.00	.01	.30
Birlesdon	.19*	.08	.13
depression scale	.04	.37	.16
(n=117)			
SPAI difference	.24*	.26*	-.28*
(n=78)	.03	.02	.01
SPAI agoraphobia	-.08	.18	.02
(n=78)	.49	.11	.86

Note: SAS-A, Social Anxiety Scale for Adolescents- FNE, Fear of Negative Evaluation- SPAI, Social Phobia and Anxiety Inventory.

**p< 0.01, *p<0.05

Table 8:

Mean rank scores and belief ratings for the Ambiguous Social Situation Interpretation Questionnaire and Social Events Catastrophisation Questionnaire for the low and high anxiety groups.

	Group			
	Low anxiety		High anxiety	
	N	*M (SD)*	*N*	*M (SD)*
ASSIQ				
Rank score social				
Negative interpretations	32	2.62 (0.26)	31	2.31 (0.38)
Neutral interpretations	32	1.66 (0.17)	31	1.84 (0.19)
Rank score non-social				
Negative interpretations	32	2.81 (0.29)	31	2.76 (0.24)
Neutral interpretations	32	1.58 (0.18)	31	1.61 (0.12)
Belief score social				
Negative interpretations	27	2.95 (1.14)	27	3.90 (1.42)
Neutral interpretations	27	5.43 (1.07)	27	5.27 (0.72)
Belief score non-social				
Negative interpretations	27	2.09 (1.20)	27	2.25 (1.03)
Neutral interpretations	27	5.22 (1.07)	27	5.58 (0.69)
SECQ				
Rank score				
Catastrophic interpretations	30	2.73 (0.36)	31	2.22 (0.48)
Non-catastrophic interpretation	30	1.62 (0.22)	31	1.89 (0.24)
Belief score				
Catastrophic interpretations	25	2.52 (1.22)	24	4.18 (1.45)
Non-catastrophic interpretation	25	5.47 (1.10)	24	5.35 (0.76)

Note. High and low groups classified using the Social Anxiety Scale for Adolescents total score.

Table 9:

Mean percentage of open-ended response type for the Ambiguous Social Situation Interpretation Questionnaire and Social Events Catastrophisation Questionnaire for the low and high anxiety groups.

	Anxiety Group			
	Low		High	
	N	*M (SD)*	*N*	*M (SD)*
ASSIQ				
Social Situations				
Negative	24	19.85 (12.72)	23	36.89 (18.16)
Neutral	24	71.37 (16.44)	23	58.71 (18.33)
Non-social situations				
Negative	24	3.43 (5.80)	23	6.63 (11.57)
Neutral	24	83.46 (12.68)	23	74.80 (9.90)
SECQ				
Catastrophic interpretations	26	15.98 (15.06)	31	6.45 (11.41)
Negative interpretations	26	61.11 (23.90)	31	41.70 (24.95)
Coping statements	26	16.37 (12.72)	31	24.12 (14.31)

Note. High and low groups classified using the Social Anxiety Scale for Adolescents total score.

Appendices

Appendix A – Instructions to authors, Clinical Psychology Review

Appendix B – Instructions to authors, Journal of Abnormal Child Psychology

Appendix C – Letter confirming ethical approval

Appendix D – Consent Forms

Appendix E – Information Sheet

Appendix F – Ambiguous Social Situations Interpretation Questionnaire

Appendix G – Social Events Catastrophisation Questionnaire

Appendix A
Instructions to authors – Clinical Psychology Review

CLINICAL PSYCHOLOGY REVIEW

INSTRUCTIONS TO AUTHORS

AIMS AND SCOPE: *Clinical Psychology Review* publishes substantive reviews of topics germane to clinical psychology. Its purpose is to help clinical psychologists keep up-to-date on relevant issues outside of their immediate areas of expertise by publishing scholarly but readable reviews. Papers cover diverse issues, including: psychopathology, psychotherapy, behavior therapy, behavioral medicine, community mental health, assessment, and child development.

Reviews on other topics, such as psychophysiology, learning therapy, and social psychology, often appear if they have a clear relationship to research or practice in clinical psychology. Integrative literature reviews and summary reports of innovative ongoing clinical research programs are also sometimes published. Reports on individual research studies are not appropriate.

SUBMISSION REQUIREMENTS: All manuscripts should be submitted to Alan S. Bellack, The University of Maryland at Baltimore, Department of Psychiatry, 737 W. Lombard St., Suite 551, Baltimore, MD 21201, USA. Submit three (3) high-quality copies of the entire manuscript; the original is not required. Allow ample margins and type double-space throughout. Papers should not exceed 50 pages (including references). One of the paper's authors should enclose a letter to the Editor, requesting review and possible publication; the letter must also state that the manuscript has not been previously published and has not been submitted elsewhere. One author's address (as well as any upcoming address change), telephone and FAX numbers, and **E-mail address** (if available) should be included; this individual will receive all correspondence from the Editor and Publisher.

Papers accepted for *Clinical Psychology Review* may not be published elsewhere in any language without written permission from the author(s) and publishers. Upon acceptance for publication, the author(s) must complete a Transfer of Copyright Agreement form.

COMPUTER DISKS: Authors are encouraged to submit a 3.5" HD/DD computer disk to the editorial office. Please observe the following criteria: (1) Send only hard copy when first submitting your paper. (2) When your paper has been refereed, revised if necessary, and accepted, send a disk containing the final version with the final hard copy. If the disk cannot be converted, the hard copy will be used. (3) Specify what software was used, including which release, e.g., WordPerfect 6.0a. (4) Specify what computer was used (IBM compatible PC, Apple Macintosh, etc.). (5) The article file should include all textual material (text, references, tables, figure captions, etc.) and separate illustration files, if available. (6) The file should follow the general instructions on style/arrangement and, in particular, the reference style of this journal as given in the Instructions to Contributors. (7) The file should be single-spaced and should use the wrap-around end-of-line feature, i.e., returns at the end of paragraphs only. Place two returns after every element such as title, headings, paragraphs, figure and table call-outs. (8) Keep a back-up disk for reference and safety.

TITLE PAGE: The title page should list (1) the article; (2) the authors' names and affiliations at the time the work was conducted; (3) a concise running title; and (4) an unnumbered footnote giving an address for reprint requests and acknowledgments.

ABSTRACT: An abstract should be submitted that does not exceed 200 words in length. This should be typed on a separate page following the title page.

KEYWORDS: Authors should include up to six keywords with their article. Keywords should be selected from the APA list of index descriptors, unless otherwise agreed with the Editor.

STYLE AND REFERENCES: Manuscripts should be carefully prepared using the *Publication Manual of the American Psychological Association*, 4th ed., 1994, for style. The reference section must be double spaced, and all works cited must be listed. Avoid abbreviations of journal titles and incomplete information.

Reference Style for Journals:
Raymond, M. J. (1964). The treatment of addiction by aversion conditioning with apomorphine. *Behavior Research and Therapy, 3*, 287–290.

For Books:
Barlow, D. H., Hayes, S. C., & Nelson, R. O. (1984). *The scientist practitioner: Research and accountability in clinical and educational settings*. Elmsford, NY: Pergamon.

TABLES AND FIGURES: Do not send glossy prints, photographs or original artwork until acceptance. Copies of all tables and figures should be included with each copy of the manuscript. Upon acceptance of a manuscript for publication, original, camera-ready photographs and artwork must be submitted, unmounted and on glossy paper. Photocopies, blue ink or pencil are not acceptable. Use black india ink and type figure legends on a separate sheet. Write the article title and figure number lightly in pencil on the back of each.

PAGE PROOFS AND OFFPRINTS: Page proofs of the article will be sent to the corresponding author. These should be carefully proofread. Except for typographical errors, corrections should be minimal, and rewriting the text is not permitted. Corrected page proofs must be returned within 48 hours of receipt. Along with the page proofs, the corresponding author will receive a form for ordering offprints and full copies of the issue in which the article appears. Twenty-five (25) free offprints are provided; orders for additional offprints must be received before printing in order to qualify for lower publication rates. All coauthor offprint requirements should be included on the offprint order form.

AUTHOR QUERIES: Authors can keep a track on the progress of their accepted article, and set up email alerts informing them of changes to their manuscript's status, by using the "Track a Paper" feature of Elsevier's Author Gateway (http://authors.elsevier.com).

For specific enquiries on the preparation of electronic artwork, consutl http://authors.elsevier.com

Appendix B
Instructions to authors – Journal of Abnormal Child Psychology

Instructions to Contributors

1. Manuscripts should be submitted to the Editor:

   Susan B. Campbell, Ph.D.
   Department of Psychology
   University of Pittsburgh
   210 South Bouquet Street
   3303 Sennott Square
   Pittsburgh, Pennsylvania 15260

   Copies of the manuscript will *not* be returned by the Editor to the author.

2. Submission is a representation that the manuscript has not been published previously and is not currently under consideration for publication elsewhere. A statement transferring copyright from the authors (or their employers, if they hold the copyright) to Kluwer Academic/Plenum Publishers will be required before the manuscript can be accepted for publication. The Editor will supply the necessary forms for this transfer. Such a written transfer of copyright, which previously was assumed to be implicit in the act of submitting a manuscript, is necessary under the U.S. Copyright Law in order for the publisher to carry through the dissemination of research results and reviews as widely and effectively as possible.

3. Type double-spaced on one side of $8\frac{1}{2} \times 11$ inch white paper using generous margins on all sides, and submit **the original and four copies** (including copies of all illustrations and tables).

4. A title page is to be provided and should include the title of the article, author's name (no degrees), author's affiliation, and suggested running head. Academic affiliations of *all* authors should be included. The affiliation should comprise the department, institution (usually university or company), city, and state (or nation) and should be typed as a footnote to the author's name. The suggested running head should be less than 80 characters (including spaces) and should comprise the article title or an abbreviated version thereof. For office purposes, the title page should include the complete mailing address, telephone number, e-mail address, and fax number of the one author designated to review proofs.

5. An abstract, preferably no longer than 150 words, is to be provided as the second page.

6. A list of 4–5 key words is to be provided directly below the abstract. Key words should express the precise content of the manuscript, as they are used for indexing purposes.

7. Illustrations (photographs, drawings, diagrams, and charts) are to be numbered in one consecutive series of Arabic numerals. Photographs should be large, glossy prints, showing high contrast. Drawings should be high-quality laser prints or should be prepared with india ink. Either the original drawings or high-quality photographic prints are acceptable. Artwork for each figure should be provided on a separate sheet of paper. Identify figures on the back with author's name and number of the illustration. Each figure should have an accompanying caption. The list of captions for illustrations should be typed on a separate sheet of paper. Electronic artwork submitted on disk should be in TIFF or EPS format (1200 dpi for line and 300 dpi for half-tones and gray-scale art). Color art should be in the CMYK color space. Artwork should be on a separate disk from the text, and hard copy *must* accompany the disk.

8. Tables should be numbered and referred to by number in the text. Each table should be typed on a separate sheet of paper and should have a descriptive title. Center the title above the table, and type explanatory footnotes (indicated by superscript lowercase letters) below the table.

9. List references alphabetically at the end of the paper and refer to them in the text by name and year in parentheses. References should include (in this order): last names and initials of *all* authors, year published, title of article, name of publication, volume number, and inclusive pages. The style and punctuation of the references should conform to strict APA style—illustrated by the following examples:

   Journal Article
   Peyrot, M. (1996). Causal analysis: Theory and application. *Journal of Pediatric Psychology, 21*, 3–24.

   Book
   Hembree-Kigin, T. L., & McNeil, C. B. (1995). *Parent-child interaction therapy*. New York: Plenum Press.

   Contribution to a Book
   Melamed, B. G., Meyer, R., Gee, C., & Soule, L. (1993). The influence of time and type of preparation on children's adjustment to hospitalization. In M. C. Roberts, G. P. Koocher, D. K. Routh, & D. J. Willis (Eds.), *Readings in pediatric psychology* (pp. 223–236). New York: Plenum Press.

10. Footnotes should be avoided. When their use is absolutely necessary, footnotes should be numbered consecutively using Arabic numerals and should be typed at the bottom of the page to which they refer. Place a line above the footnote, so that it is set off from the text. Use the appropriate superscript numeral for citation in the text.

11. The 1994 *Publication Manual of the American Psychological Association* (Fourth Edition) should be used as the style guide for the preparation of manuscripts, particularly with respect to such matters as the citing of references and the use of abbreviations, numbers, and symbols. Manuscripts departing significantly from Fourth-Edition style will not be reviewed until a corrected manuscript has been received.

12. After a manuscript has been accepted for publication and after all revisions have been incorporated, manuscripts should be submitted to the Editor's Office as hard copy accompanied by electronic files on disk. Label the disk with identifying information—software, journal name, and first author's last name. **The disk *must* be the one from which the accompanying manuscript (finalized version) was printed out.** The Editor's Office cannot accept a disk without its accompanying, matching hard-copy manuscript.

Appendix C
Letter confirming ethical approval

Appendix D
Consent Forms

---ON HEADED PAPER---

Dear Parent

I am Johanna Vine and I am a trainee clinical psychologist based at the University of Southampton. I am conducting research into the way in which adolescents think about and interpret different situations. The results of the study should help us to understand why individuals react to certain situations in different ways and allow us to develop better ways of helping children with difficulties.

I am writing to you as I need to recruit young people aged 14 to 15 years old to participate in the study. Mrs Hill, Head teacher of your daughter's school has agreed to let me recruit participants from Regents Park. Participation in the study involves completing 4 questionnaires within school-time and should not take longer than 30-40 minutes. After completing the questionnaires all participants will be told about the study and will be provided with information about the subject being studied. Participation in the study is voluntary and all responses to the questionnaire will be anonymous. The questionnaires will have an identification code on them so that your daughter can withdraw her questionnaires from the study if she changes her mind about participating.

With your permission I would like to ask your daughter if she wishes to participate in the research, however, if you do not want your daughter to take part in the research please return the slip below to her Tutor by the next week.

If you have any questions about the research you can contact me at Southampton University on 023 8059321 and I will get back to you as soon as possible.

Yours sincerely

Johanna Vine
Trainee Clinical Psychologist

I **do not** give consent for my child to take part in the above clinical research.

Child's full name: _____

Parent/Guardian's full name: _____

Tutor Group: _____

Signed: _____

Date: _____

---ON HEADED PAPER---

Consent Form

Study investigating the way in which young people interpret events

I am Johanna Vine and I work at the University of Southampton. I am conducting a study examining the way in which young people interpret different events and would like to ask you to complete 4 questionnaires. It is hoped that the results will help to better understand how young people interpret common events. It will take 30-40 minutes to complete the questionnaires and you can complete them in school-time. You do not put your name on the questionnaire and nobody will be able to work out which questionnaires you completed. You do not have to participate in this study and can withdraw from the study at any time. The questionnaires have an identification number on them that only you will know. If you decide after completing the questionnaires that you no longer wish to be included please contact me on 02380 595321, tell me your number and your questionnaires will be destroyed. After the questionnaires are completed a short presentation about the study will be given.

I agree to take part in the study described above

Name: _____

Signed: _____

Date: _____

Appendix E
Information Sheet

Social Anxiety Fact Sheet

Aim of the research

The aim of the research you were asked to participate in was to investigate whether there was a relationship between self ratings of social anxiety and the way in which teenagers interpret various social events. It would be expected that people with higher levels of anxiety would interpret negative and ambiguous social situations more negatively than people reporting lower levels of anxiety. Learning about the relationship between anxious feelings and thoughts can help psychologists to devise effective treatment programs for people with anxiety problems.

What is Social Anxiety?

Everybody feels socially anxious some of the time. Some social situations are more likely to make you feel anxious than others. For example, lots of people worry about speaking in public. Going to interviews or going out with a new boyfriend can all make people socially anxious. It is also normal for teenagers to feel self-conscious a lot of the time and this can increase your anxiety in social situations. Most teenagers do get less anxious in social situations as they get older.

However, for some people, social anxiety can get so bad that it causes a problem and interferes with their lives. Social Anxiety Disorder (or Social Phobia) is a fear of one or more social situations that does not go away and that makes you feel extremely anxious and self-conscious. A person with Social Anxiety Disorder may try to avoid social situations as much as possible. They are always worried that they will act in an embarrassing or humiliating way. People with Social Anxiety Disorder are often extremely worried that other people will see that they are anxious and think badly of them.

Social Anxiety Disorder often starts in childhood and it is probably the most common anxiety problem in teenagers. The anxiety is so bad that it interferes with everyday functioning and may make it very hard to face feared situations.

Commonly feared situations

Doing things in front of others such as public speaking, eating, voicing your opinion, meeting new people, speaking to authority figures, going to parties, making conversation, being assertive, having to sustain eye contact and talking on the telephone can all trigger anxiety.

Symptoms

People with Social Anxiety Disorder suffer from a number of different types of symptoms. Many anxious individuals experience physical symptoms, such as, sweating, blushing, shakiness, racing heart, fear, stuttering, dizziness and shortness of breath.

Anxious individuals may also have lots of negative thoughts about making a fool of themselves, their skills and abilities. They may also worry about what other people think of them, their appearance, popularity or how interesting they are.

When people get severely anxious, they can also find that they "freeze", their mind goes blank or they may feel a strong urge to escape from and avoid certain situations.

If you are suffering from Social Anxiety Disorder, all these different symptoms interact with each other creating a vicious circle. For example, if you are invited to a party, you start worrying about it, which makes you feel anxious. When you get there, you worry about what to say or you may think that other people will find you boring. These thoughts make you feel more anxious and you might blush or show that you are embarrassed. Next you start to worry that other people will notice that you are blushing or sweating and think that there's something wrong with you. At this point, your anxiety may be sky high and your mind might go blank. Of course it's hard to think of anything to say when you feel this anxious and your mind is blank, so you might make an excuse to leave and then go away thinking that you have made a fool of yourself, that other people think badly of you and dread the next time you are invited to a party.

If you think this describes you, there is help available.

Getting Help

Social Anxiety can be overcome. If you think you have Social Anxiety Disorder and want to get some help, your G.P. can give you advice and may refer you to someone who understands your difficulties and is able to help you with your fears.

Useful Websites

- www.social phobia.org
- www.social-anxiety.org.uk

Appendix F
Ambiguous Social Situations Interpretation Questionnaire

ASSIQ

Here are some outline descriptions of situations in which it is not quite clear what is happening. Read each one, and then answer the question below it very briefly. Write down the first realistic thing that comes into your mind without thinking too long about it. Please write down what you think is happening before you turn over the page. Be as specific as possible.

When you have done that, turn over the page and you will see three possible explanations for the situation. Arrange these in the order in which they would be most likely to come to your mind if you found yourself in a similar situation. So the one that you would consider most likely to be true should come first, and the one that you would consider least likely to be true should come third. Do not think too long before deciding. We want your first impressions, and do not worry if none of them fits with what you actually did think.

1. You have a sudden pain in your stomach.

   Why?

1. a) You have appendicitis.

   b) You have indigestion.

   c) You are hungry.

   1st ..... 2nd ..... 3rd .....

2. You ask a friend to go out to the cinema with you at the weekend and they refuse.

   Why?

2. a) They do not have enough money.

   b) They don't want to spend time with you.

   c) They've already arranged to do something else.

   1st ..... 2nd ..... 3rd .....

3. You have been eating normally but have recently lost some weight.

   Why?

3. a) You have cancer.

   b) It's normal for weight to go up and down.

   c) You have been rushing about more than usual.

   1st ..... 2nd ..... 3rd .....

4. You are in the queue at McDonalds and when it gets to your turn the assistant leaves the till and goes into the kitchen.

   Why?

4. a) It was time for their break.

   b) They went to finish someone's order.

   c) You are not important enough for them to bother with.

   1st ..... 2nd ..... 3rd .....

5. You notice that your heart is pounding, you feel breathless, dizzy and unreal.

   Why?

5. a) You have been exerting yourself and are overtired.

   b) Something you ate disagreed with you.

   c) You are dangerously ill.

   1st ..... 2nd ..... 3rd .....

6. Your head of year asks to see you after school.

   Why?

6. a) There is a problem with your time-table and he/she wants to sort it out.

   b) You have done something wrong and you are going to be told off.

   c) He/she wants to ask you to help at the parents' evening.

   1st ..... 2nd ..... 3rd .....

7. You come back from a friend's house in the evening and expect your parents to be home but they are not there.

   Why?

7. a) There has been an accident and they are in hospital.

   b) They have gone late night shopping.

   c) They are visiting friends.

   1st ..... 2nd ..... 3rd .....

8. You are reading something out loud in class and someone starts to giggle.

   Why?

8. a) You've said something funny.

b) You're making a fool of yourself.

c) They're remembering a joke.

1st ..... 2nd ..... 3rd .....

9. You wake up with a start in the middle of the night, thinking you heard a noise, but all is quiet.

What woke you up?

9. a) You were woken by a dream.

b) A burglar broke into your house.

c) A door or window rattled in the wind.

1st ..... 2nd ..... 3rd .....

10. Some friends come over to watch a video. They leave as soon as it finishes.

Why?

10. a) Their parents had told them to come home when the video finished.

b) They had homework to do for the next day.

c) They did not want to stay and talk to you.

1st ..... 2nd ..... 3rd .....

11. You are talking with some friends. You say something and there is a long silence.

Why?

11. a) You said something foolish.

b) They are thinking about what you said.

c) There was nothing more to say.

1st ..... 2nd ..... 3rd .....

12. A member of your family is late arriving home.

Why?

12. a) They have had a serious accident on the way home.

b) They met a friend and are talking with them.

c) It took longer than usual to get home.

1st ..... 2nd ..... 3rd .....

13. You are in the middle of giving a presentation and the teacher interrupts you in the middle of it and asks you to stop.

Why?

13. a) They want to ask a question.

b) Someone in the class is messing around.

c) They thought your presentation was rubbish.

1st ..... 2nd ..... 3rd .....

14. Your chest feels uncomfortable and tight.

Why?

14. a) You have indigestion.

b) You have a sore muscle.

c) Something is wrong with your heart.

1st ..... 2nd ..... 3rd .....

15. You join your school friends in the canteen for lunch. As you sit down, two people in the group get up to leave without saying anything.

Why?

15. a) They have a lunchtime detention.

b) They don't like you.

c) They have to go to sports club.

1st ..... 2nd ..... 3rd .....

16. You ask your teacher a question and they do not respond.

Why?

16. a) The teacher did not hear you.

b) The teacher is ignoring you.

c) They are busy and will reply when they have finished what they are doing.

1st ..... 2nd ..... 3rd .....

17. You feel short of breath.

Why?

17. a) You are developing flu.

b) You are about to suffocate or stop breathing.

c) You are physically "out of shape".

1st ..... 2nd ..... 3rd .....

18. You are talking to someone from another class whom you do not know very well and she briefly looks out of the window.

Why?

18. a) Something outside has caught her attention.

b) She bored with you.

c) She is tired and can't concentrate.

1st ..... 2nd ..... 3rd .....

19. You are walking across the playground and a group of children whom you know are looking in your direction and talking.

Why?

19. a) They are criticizing you.

b) They are being friendly and want you to join them.

c) They just happen to be looking your way.

1st ..... 2nd ..... 3rd .....

20. You feel light-headed and weak.

Why?

20. a) You are about to faint.

b) You need to get something to eat.

c) You didn't get enough sleep last night.

1st ..... 2nd ..... 3rd .....

21. You had arranged to go swimming with a friend and they tell you they can not go.

Why?

21. a) They don't feel well.

b) You've done something to offend them.

c) They have been grounded.

1st ..... 2nd ..... 3rd .....

22. You are talking to someone at a party. They excuse themselves
to go and get something to eat and then start talking to someone else.

Why?

22. a) They are just being friendly.

b) You are boring them.

c) They saw someone whom they haven't seen for a long time.

1st ..... 2nd ..... 3rd .....

23. You suddenly feel confused and are having difficulty in thinking straight.

Why?

23. a) You are going crazy or mad.

b) You are coming down with a cold.

c) You've been studying too hard and need a rest.

1st ..... 2nd ..... 3rd .....

24. You phone a friend and they say they can not talk to you at the moment and that they will call you back later that evening.

Why?

24. a) They are having their dinner.

b) They don't want to talk to you.

c) They are busy.

1st ..... 2nd ..... 3rd .....

Now you have come to the end of the questions we would be grateful if you would answer one more question about each of the situations. Please return to the start of the booklet and rate how likely you think each of the three explanations for a situation would be true if you found yourself in that situation.

Use the scale below for your ratings. Put a number between 0 and 8 next to each explanation in the text. Do not worry if your ratings appear to be different from your previous answers, and please do not change any of your original answers.

0----------1----------2----------3----------4----------5----------6----------7----------8
Not at all A little Moderately Very Extremely

Example

1.	a)	You have appendicitis.	6
	b)	You have indigestion.	3
	d)	You are hungry.	8

1st ..... 2nd ..... 3rd .....

Appendix G
Social Events Catastrophisation Questionnaire

SECQ – Part 1

There are two parts to this questionnaire.

In the first part there are some brief descriptions of situations. Please read each description and then answer the questions below it. Write your answers in the space below each question. Don't worry if you're not clear about what kind of answer is expected, just answer the questions as best you can.

Please answer all the questions.

When you have completed part 1, please turn to the second part of the questionnaire.

1. You meet someone on a school trip and spend a long time talking to them. You enjoyed the conversation but later you overhear them telling someone else what a boring trip it was.

   What, if anything, would this say **about you** or tell you **about yourself?**

2. You are out with friends and one of them tells you to stop showing off.

   What, if anything, would this say **about you** or tell you **about yourself?**

3. You are giving a 2-minute presentation to your class and half way through you forget what you were going to say and blush.

   What, if anything, would this say **about you** or tell you **about yourself?**

4. There is a child your age living a few houses away from you. You don't know him very well as he goes to another school. You are surprised to discover, through a friend, that he dislikes you.

   What, if anything, would this say **about you** or tell you **about yourself?**

5. You have just had your haircut and some of the pupils at school have been teasing you about it.

   What, if anything, would this say **about you** or tell you **about yourself?**

6. You have an argument with a good friend about boyfriends/girlfriends. Your friend gets angry, says that you are wrong and storms off.

   What, if anything, would this say **about you** or tell you **about yourself?**

7. You answer a question incorrectly in class.

   What, if anything, would this say **about you** or tell you **about yourself?**

8. You are eating lunch in the canteen with friends and you spill food down your jumper.

   What, if anything, would this say **about you** or tell you **about yourself?**

9. You ask someone you fancy if he/she wants to go out on a date with you and they say no.

   What, if anything, would this say **about you** or tell you **about yourself?**

10. You've been talking to your teacher for a while and it becomes clear that they are not really interested in what you're saying.

    What, if anything, would this say **about you** or tell you **about yourself?**

SECQ – Part 2

In this part of the questionnaire, each description of a situation is followed by several thoughts that might occur to people in that situation. Arrange these in the order in which they would be most likely to come to your mind if you found yourself in a similar situation. The one you would consider most likely to be true should come first, and the one that you would consider least likely to be true should come third. Do not worry if none of them exactly fits what you would think.

1. You meet someone on a school trip and spend a long time talking to them. You enjoyed the conversation but later you overhear them telling someone else what a boring trip it was.

   a. They're thinking about the trip in general, not the conversation with me.

   b. It just proves how boring I am.

   c. It shows how two-faced that person is.

   1st ..... 2nd ..... 3rd .....

2. You are out with friends and one of them tells you to stop showing off.

   a. My friend is wrong.

   b. I may have made a fool of myself, but my friends won't think any the worse of me for that.

   c. People won't like me and will reject me because I've made a fool of myself.

   1st ..... 2nd ..... 3rd .....

3. You are giving a 2-minute presentation to your class and half way through you forget what you were going to say and blush.

   a. I have made a complete fool of myself, how embarrassing, I will never be able to give a presentation again.

   b. Most people get nervous giving presentations it doesn't matter.

   c. No-one would really have noticed.

   1st ..... 2nd ..... 3rd .....

4. There is a child your age living a few houses away from you. You don't know him very well as he goes to another school. You are surprised to discover, through a friend, that he dislikes you.

   a. You can't expect to get on with everyone.

   b. I'm unlikeable.

   c. He doesn't really know me, so he can't make a valid judgment.

   1st ..... 2nd ..... 3rd .....

5. You have just had your haircut and some of the pupils at school have been teasing you about it.

   a. They are only messing around

   b. I look stupid, everyone will notice me

   c. It will grow soon and I can change it

   1st ..... 2nd ..... 3rd .....

6. You have an argument with a good friend about boyfriends/girlfriends. Your friend gets angry and says that you are wrong.

   a. Even friends disagree sometimes, but it won't damage our relationship.

   b. She is entitled to her own opinion.

   c. I am a horrible person and she won't want to be friends with me anymore.

   1st ..... 2nd ..... 3rd .....

7. You answer a question incorrectly in class.

   a. I am stupid, I have made a fool of myself.

   b. It doesn't matter, everyone makes mistakes.

   c. The teacher will think that I have not been working hard.

   1st ..... 2nd ..... 3rd .....

8. You are eating lunch in the canteen with friends and you spill food down your
jumper.

   a. Everyone spills food every now and then, it's no big deal.

   b. I'm incompetent.

   c. I'll clean my jumper after I have finished eating.

   1st ..... 2nd ..... 3rd .....

9. You ask someone you fancy if he/she wants to go out on a date with you and they say no.

   a. I'm unattractive no-one will ever want to go out with me

   b. I'm not his/her type

   c. He/she is already going out with someone

   1st ..... 2nd ..... 3rd .....

10. You've been talking to your teacher for a while and it becomes clear that they are not really interested in what you're saying.

    a. It doesn't matter, I can't always be interesting.

    b. Their mind was probably on something else.

    c. I am boring.

    1st ..... 2nd ..... 3rd .....

Now that you have answered parts 1 and 2 of this questionnaire, we would be grateful

if you would answer one more question about the thoughts in part 2. Please return to the start of **PART 2** and then rate the extent to which you think each of the three thoughts would be likely to be true if you found yourself in that situation.

Use the scale below for your ratings. Put a number between 0 and 8 next to each explanation in the text. Do not worry if your ratings appear to be different from your previous answers, and please do not change any of your original answers.

0----------1----------2----------3----------4----------5----------6----------7----------8
Not at all A little Moderately Very Extremely

Example

Your teacher wants to see you because you have not been completing your homework.

a. He is really angry and I am going to be suspended. **6**

b. He wants to help me get my homework done. **2**

c. I have got behind but I'm sure we'll be able to put it right. **3**

1st ..... 2nd ..... 3rd .....