

The specificity of children's attributional style

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Jane Elizabeth Heil

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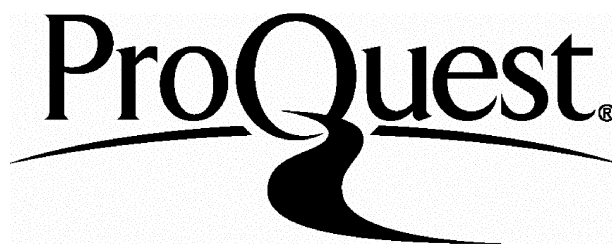
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Abstract

As the extensive overlap between childhood anxiety and depression has become increasingly apparent, so researchers have begun to question whether those features of cognition previously considered specific to depression, might also be associated with the experience of anxiety. The present study sought to examine whether a relatively pessimistic attributional style is uniquely associated with children's depressive symptomatology, or also demonstrated with other closely related forms of distress.

129 school children aged between eight and eleven years were asked to complete measures of depression, general and social anxiety, together with a questionnaire assessing their attributional style. As expected, self-reported depression was significantly correlated with pessimistic attributional style for both negative and positive events. However, in contrast to the predictions of the reformulated learned helplessness theory, children's symptoms of general and social anxiety were found to be significantly related to more pessimistic attributions for negative and positive events respectively, independent of their concurrent levels of depression. The implications of these findings for current attributional models of distress are explored, and a tentative explanation in terms of Clark and Watson's tripartite theory put forward.

Although the primary focus of the present study was the hypothesised specificity of pessimistic attributional style, the relationships amongst children's symptoms were also examined within the context of Clark and Watson's (1991) tripartite theory of anxiety and depression. Although all three forms of distress were significantly intercorrelated, supporting the possibility of a single underlying construct; exploratory factor analysis suggested that such symptoms might best be conceptualised in terms of their relation to the dimensions of negative and positive affectivity.

I

Overview

Anxiety appears to be a common experience of childhood, with as many as 40% of young children reporting significant levels of fear and worries. Although the prevalence rates of anxiety *disorders* appear to be considerably lower (Kashani & Orvaschel, 1990), they remain amongst the most commonly diagnosed of childhood disorders (Bell-Dolan & Wessler, 1994). Current theories emphasise the multidimensional nature of anxiety, its expression representing a combination of behavioural, physiological and cognitive responses. Yet although a number of theorists have argued that children's cognitions may play an important role in the mediation of childhood anxiety, until recently they had received surprisingly little attention (Francis, 1988). Those studies in existence had mainly been concerned with the cognitions of test-anxious children (Zatz and Chassin, 1985), or of normal children in stressful, test-like situations (Prins, 1986). The potential importance of cognitive processes such as causal attributions, perspective taking, social information processing and problem solving for childhood anxiety had rarely been examined.

Attribution theory is a branch of social psychology concerned with the causal explanations that individuals infer from their own and other's behaviour in an attempt to make sense of their social world. Far from being a detached, scientific process, the attribution of causes to events appears to be heavily influenced by factors other than the objective evidence available, including the individual's desire to protect or enhance their self esteem. Thus, under normal circumstances both adults (Miller and Ross, 1975) and children (Wigfield, 1988) have been shown to have a "self-serving bias" in their attributions for events, that is,

a tendency to explain successful outcomes in terms of internal causes (e.g. ability), whilst ascribing unsuccessful outcomes to more external factors (e.g. a difficult test).

Such evidence has led several researchers to suggest that there may be consistent differences in the way in which people make attributions for outcomes, and that these differences may be important predisposing and maintaining factors of both everyday problems in living and more serious psychological distress. Probably the best known, and certainly the most widely investigated of such models is Abramson, Seligman and Teasdale's (1978) reformulated learned helplessness theory of depression. Drawing heavily upon early work by Weiner (1974, 1986) this model postulates that individuals who have a tendency to explain uncontrollable negative events in terms of internal, stable and global factors, the so-called "pessimistic" attributional style, will be more likely to experience feelings of helplessness and lowered self esteem, than those who attribute such events to more external, unstable and specific causes. There appears to be relatively good evidence for an association between pessimistic attributional style and both clinical and sub-clinical levels of depression in adults and children (Sweeney, Anderson & Bailey, 1986; Gladstone and Kaslow, 1995), although the role of such cognitions within the development and maintenance of the disorder remains unclear.

Traditionally anxiety and depression have been regarded as distinct disorders, yet evidence has emerged to suggest the two syndromes display extensive intra-episode and lifetime co-morbidity, both within child and adult populations (Brady & Kendall, 1992; Clark & Watson, 1991). To date the most widely accepted conceptualisation of this overlap is provided by the tripartite theory (Clark & Watson, 1991), which

postulates a set of general distress symptoms common to both anxiety and depression, as well as those which are unique to each disorder. Regardless of the validity of such a model, the co-morbidity of anxiety and depression has considerable implications for the attributional reformulation (and indeed any model of depression), suggesting that the tendency to provide more pessimistic explanations for events may not be specific to depression.

Little detailed attention has been given to the question of whether pessimistic attributional style might be associated with forms of psychopathology other than depression. In part this omission almost certainly stems from the reformulated learned helplessness model itself, which explicitly states that pessimistic attributional style is specific to the etiology and maintenance of depression, and hence (implicitly) not involved in the development of other disorders. Until recently relatively few studies had sought to explore this caveat, and for those that had, a reliance on correlational studies, coupled with a failure to acknowledge the existing body of research concerning the association between attributional style and depression have left their results difficult to interpret. However, there appears to be at least initial evidence within the adult literature for a link between anxiety in both its clinical and non-clinical forms and pessimistic attributional style (Heimberg, Klosko, Dodge, et al, 1989; Johnson, Petzel & Johnson, 1990). As yet no equivalent evidence exists within the child anxiety literature.

The present study therefore seeks to explore the relationship between attributional style and anxiety in children and more particularly, whether such a relationship exists independently of children's depressive symptomatology. The following sections outline in greater detail

the current state of theory and research concerning children's attributional style. However, as will become clear, the study of childhood distress is still very much in its infancy, and as a result the conclusions which can be derived from the literature remain relatively incomplete. For this reason considerable attention has been devoted to exploring the corresponding adult theory and methodology, in an attempt to derive plausible hypotheses about the nature of the association between childhood anxiety, depression and attributional style.

II

Attributional Style

i) The learned helplessness model (Seligman, 1975)

“Learned helplessness” originally referred to a laboratory phenomenon in which animals who had been exposed to inescapable aversive stimuli in one setting (the Pavlovian Hammock), subsequently displayed “helpless”, passive behaviour in a situation within which the stressor was potentially controllable (Seligman & Maier, 1967). Seligman and Maier (1967) outlined three outcomes of exposure to uncontrollable aversive events:

- 1. Motivational deficits:* Animals that had been exposed to inescapable stress did not subsequently initiate escape responses in the presence of such stress
- 2. Cognitive deficits:* Animals that had been exposed to inescapable stress were slower to learn that their responses could control future stresses
- 3. Emotional changes:* The effects of exposure to non-contingency appeared to dissipate over 48 hours, indicating a transient emotional effect.

Although initially demonstrated with dogs, learned helplessness was subsequently described in wide variety of animals, and eventually with humans. Thus, Hiroto and Seligman (1975) reported that students who had previously been exposed to an aversive noise over which they had no control, seemed unable to learn a simple response to terminate that noise in a subsequent task. Their passivity was in marked

contrast to those students who had previously been exposed to a controllable noise, who were quick to learn the new response.

Although a number of alternative hypotheses were suggested in an attempt to account for the debilitating effects of experience with uncontrollability, only those of the learned helplessness model (Seligman, 1975) appeared to provide a unifying theoretical framework for both animal and human data. Seligman (1975) pointed out that within the learned helplessness paradigm, the probability of reinforcement (i.e. the termination of the aversive stimuli) remained the same whether or not the animal made a response. In other words, rewards were non-contingent on the animal's behaviour. Seligman (1975) suggested that even simple organisms were not only able to learn about the contingencies between their instrumental responses and the outcomes of those responses, but to weigh up the probability of their behaviour resulting in a specific outcome. He argued that the deficits displayed by animals in the learned helplessness paradigm occurred when they had learned that their behaviour and the desired outcome were independent, i.e. that they had no control over the aversive stimuli.

Noting the parallels between learned helplessness and depression, in terms of causes, symptoms and treatment, Seligman (1975) went on to suggest that the former might serve as a laboratory model of reactive depression. Thus, just as animals exposed to inescapable stress showed later motivational, cognitive and emotional changes, reactive depression might also be one possible consequence of an individual encountering uncontrollable life events. The learned helplessness model hypothesised that on the basis of these experiences, individuals developed an expectation that future events (and

hence reinforcement) would also be out of their control. It was this expectation, rather than uncontrollable events per se, which was thought to lead to the passivity (motivational), negative expectations (cognitive) and affective disturbance (emotional) associated with depression.

As research progressed however it became increasingly clear that Seligman's (1975) model was insufficient as an explanation of both laboratory induced learned helplessness and, perhaps more importantly, reactive depression in humans. Variations in the generality, chronicity and intensity of depressive symptomatology, both between different individuals and within the same individual at different points in time, were not addressed within the learned helplessness model, nor were several significant symptoms of depression, including lowered self-esteem. It was in an attempt to resolve these discrepancies that Abramson, Seligman and Teasdale (1978) reformulated the learned helplessness model in terms of attribution theory.

ii) *The reformulated learned helplessness model (Abramson et al, 1978)*

Abramson et al (1978) hypothesised that, at least in humans, the relationship between perceived uncontrollability and learned helplessness was mediated by the individual's causal explanations for the uncontrollable events. In other words, on experiencing an uncontrollable negative event, individuals asked themselves why the event had occurred. The nature of that explanation was thought to crucially influence both their immediate response and expectations about future similar events.

In fact, the reformulated learned helplessness model was not so much concerned with the content of individual's attributions, as their variation in terms of several underlying dimensions. Drawing heavily upon existing attributional models, Abramson et al (1978) hypothesised that exposure to an uncontrollable event elicited explanations which varied along three critical dimensions; locus, stability and globality. Locus referred to the perceived location of the cause, varying from those *internal* to the individual to those that were more *external*, i.e. the result of others or circumstances. The *stability* of an explanation referred to its chronicity, ranging from relatively short lived and *unstable*, to long-lasting, *stable* effects. Finally the globality of a cause referred to the range of situations to which it was thought to be relevant, thus a *specific* cause might only apply to that particular situation whilst a more *global* cause might apply to a wide range of situations.

The reformulated learned helplessness model hypothesised that the motivational, emotional and cognitive deficits associated with helplessness occurred when individuals attributed uncontrollable negative events to causes that were relatively internal, stable and global. Thus for example a student who attributed exam failure to their stupidity (e.g. an internal, global and stable attribution) would be more likely to experience helplessness than one who explained it in terms of it being an unusually difficult exam (e.g. an external, specific and unstable explanation).

In addition Abramson et al (1978) suggested that each causal dimension was linked with a specific aspect of helplessness, variations in which resulted in predictable changes in the individual's learned helplessness behaviour. Thus should an individual

attribute an event to a stable cause, then their subsequent induced helplessness would be long-lasting, whereas a relatively unstable cause would lead to more transient helplessness. A global causal explanation was hypothesised as being associated with helplessness manifest across a wide range of situations, whilst a more specific explanation would lead to helplessness that was correspondingly circumscribed. Finally internal causal explanations for negative events were thought to be associated with damage to the individual's self esteem, whilst more external attributions left self esteem intact.

iii) The reformulated learned helplessness model and depression

Much as Seligman (1975) had done, Abramson et al (1978) explicitly predicted an association between helplessness and reactive depression. Specifically they suggested that, given equivalent situational cues, those individuals who perceived uncontrollable negative events (or the loss of a highly desired positive event) as being the result of an internal, stable and global cause would be more likely to experience depressive symptoms than those who explained events in terms of relatively external, unstable and specific causes.

In addition Abramson et al (1978) suggested that some individuals develop a relatively enduring tendency to interpret negative events in terms of internal, global and stable causes. This "pessimistic" attributional style was thought to leave individuals vulnerable to the experience of depression, as they were relatively more likely to experience helplessness on encountering negative events than those individuals who had a more optimistic attributional style (e.g. attributing events to relatively external,

unstable and specific causes). In the presence of positive life events or absence of negative ones however, these individuals were thought to be no more likely to develop depression than those who did not have the characteristic attributional style. As a result the helplessness reformulation can be conceptualised as a diathesis-stress model, as it is the *interaction* between the event and attributional style, rather than attributional style per se, which was thought to lead to the development of depression.

Abramson et al (1978) emphasised that attributional style was a sufficient, but not necessary condition for depression. Thus, a number of different factors including physiological state, post-partum conditions, and neurochemical imbalances, could all produce depression in the absence of any expectations about uncontrollability. Similarly the reformulated model recognised that for any event an individual's causal attributions were likely to be, at least in part, a function of the available situational information. Thus for example, regardless of their characteristic attributional style, most individuals would be more likely to make internal, stable and global attributions for an event when contextual information suggested that the event was low in consensus (e.g. failing to be promoted at work when many of your co-workers are promoted), high in consistency (e.g. frequently being passed over for promotion) and low in distinctiveness (e.g. failing to be promoted in other jobs than your current one) (Metalsky and Abramson, 1981).

In a summary of the main proposals of the attributional reformulation, Seligman (1981, reported in Williams, 1992) outlined four premises, the co-occurrence of which were hypothesised to be sufficient for depression to occur:

1. The individual expects that a highly aversive event is likely (or a highly desired event is unlikely)
2. The individual expects that they will not be able to do anything to alter the likelihood of these events.
3. The individual possesses a maladaptive attributional style such that negative events tend to be attributed to internal, stable and global causes
4. The greater the certainty of the expected aversive event and the expected uncontrollability, the greater the strength of motivational and cognitive deficits. The greater the importance of the event to the individual, the greater the affective disruption.

The following section outlines the evidence for these premises, and for the status of attributional style as a diathesis for depression.

iv) Evidence for the reformulated learned helplessness model:

Abramson et al's (1978) model made a number of complex predictions about the relationship between depression and attributional style. Yet for reasons which are not entirely clear most interest has focused upon what is perhaps the weakest of these premises, that a tendency to provide relatively more internal, stable and global explanations for negative events will be associated with depressive symptomatology.

A large number of studies have examined the synchronous correlation between attributional style and depressive symptoms, and in the main, these have supported Abramson et al's (1978) predictions. In a meta-analysis of 104 studies involving nearly

15,000 subjects, Sweeney, Anderson and Bailey (1986) concluded that there was strong evidence for a link between pessimistic attributional style for negative events and depression, with each of the three attributional dimensions showing relatively large effect sizes ($r = .36, .34,$ and $.37$ for internality, stability and globality respectively). Based upon Rosenthal's (1979) "file-drawer" statistic, that is, the number of unpublished or "file-drawer" studies with null-findings which would be needed to overturn a significant effect, Sweeney et al (1986) calculated that over 2000 studies would be needed to revise the conclusion that a significant relationship exists between pessimistic attributional style and depression.

Although these findings seem to indicate impressive support for Abramson et al's (1978) model, it is perhaps worth sounding a note of caution. The majority of studies included in Sweeney et al (1986) meta-analysis only examined the relationship between depressive symptoms and attributional style at one point in time. As a result, they cannot provide *any* information about the direction of causality, and hence the status of attributional style as a potential vulnerability factor for depression. In fact, on the basis of this evidence it is just as plausible to suggest that pessimistic attributional style constitutes a symptom of depression, as a diathesis.

An alternative to the correlational approach has been taken by a number of researchers (e.g. Wilkinson & Blackburn, 1981; Eaves & Rush, 1984; Fennell & Campbell, 1984) in which the attributional style of groups thought to be "at risk" from depression, for example those individuals with a prior history of the disorder, were studied. Such studies, which hypothesise that individual's vulnerability is manifested as a continued

tendency to interpret negative events pessimistically, have produced somewhat mixed support for the attributional reformulation. Thus although Eaves and Rush (1984) found that patients who had recently recovered from depression suggested more pessimistic explanations for events than matched controls, those studies which have involved individuals in remission for longer lengths of time, have not produced strong evidence for a difference in attributional style (Wilkinson & Blackburn, 1981; Fennell & Campbell, 1984).

Abramson et al (1978) specified a detailed account of the way in which people develop depression, within which attributional style was proposed as a risk factor, not an inevitable cause of problems. It was the *interaction* between uncontrollable negative events and attributional style which was proposed to lead to depression, not attributional style per se. Relatively few studies have adequately investigated these subtleties, which require both a longitudinal design and an independent assessment of the occurrence of stressful life events.

In a prospective study Metalsky, Abramson, et al (1982) found that, for those students who received a lower grade than they had hoped for low mood correlated significantly with a tendency to make more internal and global attributions for negative outcomes. In contrast the attributional style of those students who received good exam grades was not significantly correlated with their mood following the exam. Metalsky et al (1982) suggested that these results provided good evidence for the diathesis-stress component of the attributional model, as it appeared that, in the absence of a negative life event (e.g. failing an exam), individuals who reported a relatively pessimistic

attributional style were no more likely to experience depressive symptoms than those who did not. However, as Williams (1992) pointed out, in order to substantiate this claim, the difference between the two sets of correlations would need to be significant. In fact when Williams (1992) made this comparison he found that this was not the case, suggesting that attributional style was no more related to mood disturbance when individuals had suffered the stress of failure than when they had not.

Although several studies have subsequently sought to replicate Metalsky et al's (1982) findings with more complete statistical analyses, few have produced consistent support for the role of attributional style as a vulnerability factor for depression. Thus, for example Hunsley (1989) found no evidence to suggest that attributional style predicted undergraduates levels of mood disturbance following disappointing exam results, although interestingly it did appear to predict how long students low mood persisted.

On the basis of these studies there seems little to suggest that pessimistic attributional style acts as a diathesis for depression. Instead this research, in combination with the significant correlation between pessimistic attributional style and *concurrent* depression, seems to suggest that the former is relatively specific to the illness phase of depression, in other words, a "state not a trait" (Wilkinson & Blackburn, 1981).

v) ***Summary of evidence for the reformulated learned helplessness model***

To date the nature of the relationship between depression and attributional style remains uncertain. Thus although the latter is clearly associated with concurrent depression, there is little to suggest that it acts as an important factor in its

development, either alone, or in interaction with stressful life events. Instead, it appears more likely that, as Wilkinson & Blackburn (1981) suggest, pessimistic attributional style is simply a symptom of depression.

It should perhaps be emphasised at this point that attributional style is not alone in this respect. A number of theories have suggested a causal role for cognitive constructs (e.g. Beck, 1967, 1976) in the development of depression, yet to date few of these have received strong empirical support. In contrast, there is frequently good evidence for differences between the cognitions of *currently* depressed and non-depressed individuals.

More importantly, although individual differences in attributional style may not play a major part in the initial development of depression, this does not mean they are not of considerable importance during its later stages, for example, in influencing the chronicity of distress. Thus it may be that a relatively pessimistic attributional style serves to perpetuate individual's depression, by distorting both their perceptions of current life events, and the possibility of future change.

vi) *The hopelessness model of depression (Abramson, Metalsky & Alloy, 1989)*

Partly in response to the lack of empirical support for attributional style as a diathesis for depression, Abramson et al, 1989) subsequently revised the reformulated learned helplessness model as the hopelessness theory of depression. Essentially this proposed that a subtype of depression existed, for which a sufficient, though not necessary, cause was *hopelessness*. The latter was comprised of three core elements:

- 1) Negative expectations about the occurrence of a highly valued outcome,
- 2) Feelings of helplessness about the possibility of changing the likelihood of occurrence of these outcomes (negative outcome expectancy), and
- 3) A high degree of certainty about both of these beliefs.

Abramson et al's (1989) model specified a detailed sequence of events leading to the development of hopelessness, and hence depressive symptoms (see Figure 1). Thus once a negative life event had occurred, the hopelessness model hypothesised that the degree of importance the individual attached to that event, together with their attributions for its' cause, were important factors in determining whether or not that individual subsequently experienced hopelessness. In addition to those attributional dimensions originally proposed by the reformulated learned helplessness model (e.g. internality, globality and stability), the hopelessness theory suggested a *fourth* attributional dimension of controllability was also important within the development of helplessness. Unlike the other three dimensions, the controllability dimension referred to the event itself, rather than its cause, and involved the individual's assessment of the degree to which the outcome could be influenced by their responses.

Abramson et al (1989) suggested that the negative outcome expectancy component of hopelessness (and hence depression) was more likely to occur when negative life events were attributed to stable and global causes, as these causal attributions imply that similar negative events are likely to occur across a wide range of situations. In addition when negative events were perceived as being uncontrollable (i.e. independent of one's responses) helplessness was also thought to be more likely to occur. Finally,

when negative events were attributed to internal causes they proposed that hopelessness would be accompanied by low self-esteem.

Much as its predecessor had done, the hopelessness theory identified individual differences in attributional style as a distal factor within the development of hopelessness. In addition it proposed that individuals may also have a relatively enduring tendency to perceive events as controllable or uncontrollable, e.g. a “perceptions of control” style. Given equivalent situational cues, those individuals who exhibit the hypothesised pessimistic attributional and control styles should be more likely to perceive negative events as uncontrollable, and attribute them to internal, stable and global causes, than those who do not. In this way the likelihood of their forming helplessness expectancies, and hence experiencing depressive symptoms was increased.

vii) *The attributional reformulation and hopelessness theory of depression - a comparison*

Aside from the conceptualisation of controllability as a subjective judgement, rather than an objective characteristic of events, there appear to be few salient differences between the hopelessness theory of depression and that of the learned helplessness reformulation. It is perhaps because of this that although the hopelessness theory was essentially put forward as a replacement for the attributional reformulation, the latter has continued to be cited as the pre-eminent attributional model of depression. In fact a large number of recent studies examining attributional style, particularly within the

child literature, have made no reference to hopelessness theory (see Dixon & Ahrens, 1992 for a notable exception).

It is not clear why hopelessness theory has failed to capture researchers interest to the same degree as the attributional reformulation, although it seems likely that practical considerations have played a major role. An established methodology exists for examining the tenets of the reformulated learned helplessness model, with standardised measures available for those variables important within the theory. In contrast the hopelessness theory not only postulates a new form of depression, but a number of components for which there are, as yet, no established measures. It is perhaps worth noting that even those studies which have explored the hypotheses of the hopelessness theory have tended to focus upon those aspects which are most easily measured using established questionnaires.

The following sections outline the current state of research concerning the relationship between attributional style and childhood depression. Given that both the attributional reformulation and hopelessness theory propose pessimistic attributional style as a vulnerability factor for depression, to some extent this research can be seen as relevant to both. However, in common with the prevailing theoretical approach taken by workers within this field, these studies are discussed primarily in terms of their implications for the reformulated learned helplessness model (Abramson et al, 1978).

III

Attributional style and children

i) The extension of the attributional reformulation to childhood depression:

Given that learned helplessness behaviour had been demonstrated in children, it was perhaps not surprising that relatively soon after the publication of the attributional reformulation, Seligman, Kaslow, et al (1984) suggested that attributional style might mediate depressive symptoms in children in a similar way to that which had been proposed for adults. With this development attributional research essentially came full circle, as Abramson et al's (1978) model had drawn heavily upon earlier work by Weiner (1974, 1986) concerning children's attributions for academic success and failure. Interestingly however the downward extension of the attributional reformulation represented the first attempt to link causal attributions with childhood disorder, and more particularly, depression.

In part this may be because it was not until the late 1970's that it became widely accepted that children could both experience and reliably report adult-like symptoms of depression (Kovacs and Beck, 1977). More recent large scale epidemiological studies have indicated that between 10% and 23% of school-aged children report mild-to-moderate levels of depressive symptomatology at any given time (Nolen-Hoeksema, Seligman & Girgus, 1986) whilst longitudinal research suggests that self-reported depression remains remarkably stable over time (Charman, 1994; Nolen-Hoeksema, Girgus & Seligman, 1992). Although depressions that meet psychiatric criteria for disorders are less common (Anderson, Williams, McGee & Silva, 1987), it appears that

a significant minority of children experience moderate-to severe depression, and that this is likely to persist throughout long periods of their childhood.

Despite explicitly noting the dangers of transplanting any adult model of disorder to a child population without both acknowledging and incorporating the developmental differences between the two, Seligman et al (1984) proposed that the attributional reformulation was applicable to children without any significant modification. As justification for this decision, Seligman et al (1984) pointed out that the important constructs in learned helplessness theory and its attributional reformulation were relatively “mundane” and as a consequence it was likely that relatively young children would possess the cognitive abilities required by the model. It is worth noting that the vast majority of subsequent attributional research has made no attempt to examine this assumption or to further delineate how the constructs of the reformulated model might apply (or not) to children (see Fincham & Cain, 1986; Turner & Cole, 1994 for two notable exceptions).

ii) Attributional style and depression in children

As with their adult counterparts, the majority of research concerning the relationship between children’s attributional style and depression has been correlational. In the first of many such studies Seligman et al (1984) asked school-children aged between 8 and 13 years to complete measures of self-reported depression (Child Depression Inventory, Kovacs & Beck, 1977) and attributional style (as measured by the Children’s Attributional Style Questionnaire; CASQ) at two times, separated by a six month interval. Seligman et al (1984) found that children’s levels of depressive

symptomatology correlated strongly with pessimistic attributional style and appeared to stay stable over a six month interval.

Following in the wake of this initial study, a number of researchers sought to explore the relationship between children's attributional style and concurrent (usually self-reported) depression using the CASQ (Kaslow, Rehm, Pollack & Siegal, 1988, Nolen-Hoeksema et al, 1986). In a recent meta-analysis of 28 studies involving a total of 7500 subjects, Gladstone and Kaslow (1995) found evidence for a strong association between depressive symptoms in children and pessimistic attributional style for both negative and positive events. Effect sizes ranged from moderate to large (Cohen, 1977) and Gladstone and Kaslow (1995) calculated that over a thousand studies with null findings would need to be published in order to reverse their conclusion.

Despite the apparent strength of these findings, as with the adult attributional research, a number of methodological and theoretical concerns remain. A large number of the studies included in Gladstone and Kaslow's (1995) meta-analysis defined depression on the basis of cut-off scores on self-report measures, rather than diagnostic criteria. Although this appears to be a relatively common practise throughout both the child and adult literature, it is perhaps worth bearing in mind that the relevance of such research relies crucially upon the assumption that it possible to draw meaningful conclusions about the nature of a diagnosed disorder from the study of mild to moderate self reported symptoms in a normal population. In fact, the relationship between self-reported and clinical diagnoses of depression is far less than clear than the prevalence of such studies suggests. Interestingly those few studies which have sought to explore

the relationship between attributional style and depression within a referred population have found substantially weaker correlations between attributional style and depression, than those previously demonstrated within non-psychiatric populations of children (Kaslow, Rehm, Pollack & Siegal, 1988).

Although cast explicitly as a diathesis-stress model, this fundamental aspect of the reformulated learned helplessness model has been tested in relatively few studies with children, with decidedly mixed results. To date only six studies have assessed the relationship between maladaptive attributional style and children's depressive symptoms prospectively, of which only one (Dixon & Ahrens, 1992), produced consistent support for the reformulated model's predictions. Dixon and Ahrens (1992) found that, although children's attributional style alone did not predict changes in their self-reported depressive symptoms following negative events, the interaction between attributional style and stress appeared to be a significant predictor of subsequent depression.

More mixed support for the reformulated learned helplessness model was provided by Nolen-Hoeksema et al (1986) in a longitudinal study involving 8 to 10 year old school children. Although, as might be expected, Nolen-Hoeksema et al (1986) found that a more internal, global and stable explanations for negative events were significantly correlated with children's concurrent levels of depression, the interaction between children's attributional style and life events only predicted their subsequent levels of depression on two out of the four occasions. Similarly, Panak and Garber (1992) found the interaction of pessimistic attributional style and peer rejection, their measure

of life stress, predicted depressive symptoms at 12 months but not 7 months after the initial assessment.

Unfortunately the remaining studies have provided little or no support for attributional style as a risk factor for depression (Hammen, Adrian & Hiroto, 1988; Turner & Cole, 1994; Bennett & Bates, 1995). Hammen et al (1988) examined the attributional style of an “at risk” group of 8 to 16 year old children whose mothers had received a diagnosis of either bipolar and unipolar mood disorder. They found that only children’s initial diagnosis, in interaction with self-reported stress predicted whether they had received a diagnosis of depression 6 months later. Neither attributional style alone, nor the interaction between attributional style and stress, were significant predictors of depression, although interestingly the latter did appear to predict the presence of a non-affective diagnoses at the six month follow-up.

iii) Developmental changes in the role of children’s attributional style:

In the main the research concerning children’s attributional style and depression seems to have produced similar findings to that of its adult counterpart. Thus although there is considerable evidence that children experiencing depressive symptoms are more likely to endorse internal, stable and global explanations for negative events than their non-depressed counterparts, there is little to suggest that such an attributional style might have played a part in the initial development of their depression. Those few studies which have attempted to explore the interaction between attributional style and life events have found them to be, at best modest predictors of future symptomatology,

indicating that pessimistic attributional style is unlikely to be a robust antecedent of childhood depression.

In an attempt to explain the inconsistent support for pessimistic attributional style as a vulnerability factor for depression, Turner and Cole (1994) have suggested that its importance as a diathesis may change as children develop. Thus although relatively young children may well show evidence of a stable attributional style, the latter may not act as a significant factor in the development of depression until they are considerably older. Turner and Cole (1994) hypothesised that, prior to late adolescence, children's feelings are more likely to be influenced by those events occurring around them, than the interaction between events and attributional style. As attributional style become more entrenched however, it may come to play an increasingly important role in determining their reactions to events. Although Turner and Cole's (1994) conceptualisation seems plausible given the wide age range of children participating in the diathesis studies, it is perhaps something of a moot point when one considers that the importance of pessimistic attributional as a vulnerability factor has not yet been consistently shown in adults.

However, this theory does raise the question of how much, if at all, attributional style changes with age. The process outlined in the attributional reformulation relies crucially on three cognitive abilities; children's perceptions of non-contingency, expectations of future performance and causal understanding. Although the literature concerning the development of these abilities is somewhat incomplete, contrary to Seligman et al's (1984) assertions it appears that considerable changes occur

throughout childhood and well into early adolescence (Fincham & Cain, 1986). On the basis of the available literature Fincham and Cain (1986) have suggested that a consistent attributional style is unlikely to emerge before middle childhood (e.g. eight or nine), and may not be established until early adolescence. Such research suggests that although children's behaviour may well be influenced by the explanations they derive for events, the latter are likely to differ in terms of their content and underlying dimensions not only from those provided by adults, but from those provided by children of a different age. As a result any study of attributional style needs to be cautious in extrapolating their findings to other age groups.

To date very few studies have been carried out which examine the specificity of pessimistic attributional style to childhood depression. As a result it remains unclear whether or not these attributional patterns are related uniquely with depressive symptomatology in children and adolescents, or more generally either with internalising emotional and behavioural problems or global psychopathology.

IV

The specificity of attributional style - theoretical support

Implicit within both the reformulated learned helplessness and hopelessness model is the principle that pessimistic attributional style is specific to the etiology and maintenance of depression, and consequently not involved in the development of other disorders. Yet despite the fact that the importance of examining the specificity of pessimistic attributional style to depression was recognised soon after the reformulated helplessness model was proposed (Raps, Peterson, et al, 1982), until recently relatively few studies had sought to explore this issue, either with adults or children.

In fact there are both theoretical and empirical grounds for postulating an association between pessimistic attributional style and disorders other than depression. In particular, the extensive co-morbidity of depressive and anxiety disorders, together with studies demonstrating an association between the latter and the learned helplessness paradigm, have led a number of researchers to suggest that certain forms of anxiety disorders may also be associated with pessimistic attributional style. The following sections outline some of the existing evidence from the adult literature for this hypothesis.

i) Anxiety and the learned helplessness phenomena:

Seligman's (1975) model of learned helplessness, together with the attributional reformulation (Abramson et al, 1978) defined much of subsequent thinking about the impact of uncontrollable events, firmly linking them with the aetiology of depression

rather than other disorders. Yet a number of theorists had been arguing for the importance of lack or loss of control in the origins of fear and anxiety long before it was strongly implicated in depression (Mineka & Kelly, 1989).

The importance of control in fear conditioning was first studied experimentally by Mowrer and Viek (1948) who found that rats exposed to inescapable or uncontrollable shocks displayed significantly higher levels of fear than those which had been exposed to an equivalent degree of escapable or controllable shock. This “fear from a sense of helplessness” was subsequently replicated by a number of investigators using different paradigms and measures for assessing fear. Although a wide range of behaviours have been described following these procedures, the majority seem to fall into one of two classes: either excessive agitation, activity and autonomic arousal, or decreased activity, passivity and withdrawal, sometimes accompanied by social isolation. Amongst others, Mineka and Kelly (1989) have suggested that these behavioural responses may form the animal equivalent of human anxiety and depression.

Laboratory studies with humans, like those with animals, have found control to have profound effects on fear and anxiety, regardless of whether the latter are assessed in terms of the individual’s physiological, behavioural or cognitive responses. In general, (perceived or actual) control appears to play a significant role in reducing individual’s anxiety in the face of aversive events (Mineka and Kelly, 1989). Thus Geer and Maisal (1972) found that subjects shown aversive slides for uncontrollable lengths of time had significantly higher levels of anxiety (as measured by galvanic skin responses) than those who were able to control the duration of exposure. More recently, Brier, Albus,

et al (1987) found that exposure to inescapable noise as compared to escapable noise, led to increased self-reports of both depression and anxiety.

The results of these studies strongly suggest that individuals experience anxiety on encountering uncontrollable stressors. As a consequence it seems reasonable to hypothesise that many of the subjects who took part in learned helplessness experiments (which by definition involve exposure to uncontrollable events) also experienced considerable levels of anxiety. Coyne, Metalsky & Lavelle (1980) hypothesised that if laboratory learned helplessness were anxiety, rather than depression based, then it should be alleviated by relaxing imagery between the pre-treatment and test phases. In fact, they found that subjects who were asked to imagine a pleasant mountain scene following exposure to uncontrollable noise, did not show helplessness deficits in subsequent tasks. Thus, although Seligman (1975) emphasised the parallels between learned helplessness behaviour and depression, at least in humans the former may also have a substantial anxiety component

On the basis of animal's, and later human's, behaviour within the learned helplessness paradigm, Seligman (1975) suggested that individuals derived a generalised expectancy about their capacity to control *future* events from their past experiences with uncontrollability. It was this expectancy that was hypothesised to lead to the development of depression, yet there is considerable evidence from both developmental and animal studies that such experiences may also be important in mediating individual's anxiety responses in stressful situations.

Developmental psychologists have long noted the importance of control over social stimulation in promoting secure attachments and the balance of fearful versus exploratory responses to novel situations (e.g. Ainsworth, 1982). In general, the responsiveness of the caregiver to the infant's signals is thought to form the basis for such initial expectations of control, and hence their levels of fearfulness in new situations. The relationship between infants and caregiver confounds a number of characteristics however, including parental warmth, which are also likely to affect the child's levels of fear and anxiety. In an attempt to examine the effects of a past history of control unconfounded by other variables Mineka, Gunnar and Champoux (1986) hypothesised that a primate model might prove a useful analogue to human behaviour. They found that infant monkeys that had been reared in controllable environments where their operant responses produced food, water and treats showed less fear and anxiety in several different stressful settings than those reared in uncontrollable environments where the same reinforcers were delivered non-contingently.

ii) Summary of controllability and anxiety

In summary, there appears to be considerable evidence from animal and human research for the importance of control in both the etiology and maintenance of anxiety.

Of particular relevance has been the consistent finding that both humans and animals experience considerable levels of anxiety within the learned helplessness paradigm, which, at least until recently theorists had regarded as almost exclusively linked with depression. Given that the attributional reformulation was heavily grounded in the learned helplessness tradition and particularly the work of Seligman (1975), it is perhaps not surprising the Abramson et al (1978) emphasised negative attributional

style as a risk factor for depression, rather than other disorders such as anxiety. However given the demonstrated association between non-contingent events and individual's levels of anxiety, it seems reasonable to suggest that these individuals may also show a distinctive pessimistic attributional style.

iii) The co-morbidity of adult anxiety and depression:

A long-standing debate exists within the psychiatric tradition as to whether anxiety and depression constitute distinct syndromes or states existing at different points along a single continuum of affective disorders. Historically anxiety and depressive disorders have been viewed as distinct nosological entities, however it has become increasingly clear that the two syndromes show considerable overlap on a number of levels, including their symptomatology, family history, response to treatment and aetiology (Clark & Watson, 1991). Although a full review of this literature is beyond the scope of this study, some of the major features of co-morbidity are considered below.

Extensive evidence exists concerning the overlap in anxious and depressive symptomatology (Gotlib & Cane, 1989). In their summary of adult research, Gotlib and Cane (1989) concluded that the correlation between various self-report measures of anxiety and depression was nearly as high as the correlation between separate measures of each construct. The two states close relationship is also evident at the level of diagnoses. Thus, Clark and Watson (1991) estimated that in general, over half of those adults receiving a diagnosis of a depressive disorder, would also meet diagnostic criteria for an anxiety disorder. However, important differences have been found amongst the various anxiety disorders with respect to both their life time and

intra-episode co-morbidity with depression. Thus, evidence suggests that individuals who receive a diagnoses of panic disorder, agoraphobia, obsessive compulsive disorder (OCD), and post-traumatic stress disorder (PTSD) are generally more likely to experience concurrent depression than those with generalised anxiety disorder, social phobia or simple phobia (Alloy, Kelly, Mineka and Clements, 1990). These findings are of particular relevance to the attributional reformulation, as they suggest that one might be more likely to find pessimistic attributional style associated with those anxiety disorders which are most commonly co-morbid with depression.

Alloy et al, (1990) have outlined several characteristic features of the relationship between anxiety and depression, each of which appear to be of relevance to the specificity of attributional style. Thus evidence from both intraepisode and lifetime comorbidity has suggested that anxiety is more likely to precede depression than follow it. Individuals responses to stressful events (e.g. loss) appear to follow a biphasic pattern, within which first anxiety and then depression, disorganisation and despair are experienced (Bowlby, 1988). In terms of lifetime co-morbidity Angst, Vollrath, Merikangas and Ernst (1990) found that 49% of individual's with an anxiety diagnosis went on to develop a depressive disorder in the following seven years, whereas only 33% of the depressed individuals went on to develop an anxiety disorder (either alone or in conjunction with depression). Such patterns have led a number of researchers to suggest that the prolonged feelings of helplessness or shame about their anxiety symptoms, may eventually lead individuals to become depressed (Alloy et al, 1990). The sequential relationship between anxiety and depression is of particular importance to discussions of the specificity of attributional style because it suggests that, if

pessimistic attributional style represents a diathesis for depression, it may also do so for those anxiety disorders which are commonly followed by depression.

Cross-sectional studies examining the phenomenology of anxious and depressive states within individual episodes of illness have frequently found it more difficult to identify individual's with pure depression than with pure anxiety (Alloy et al, 1990). Thus although the overlap between anxiety and depressive disorders has been estimated at between 25% and 40%, cases of anxiety without depression are relatively common, whereas depression in the absence of concomitant anxiety appears to be relatively rare. Thus for example, of those individual's seeking treatment at the Albany Centre for Stress and Anxiety Disorders, Di Nardo and Barlow (1990) found almost 90% of those with a primary major depressive disorder also met DSM-III criteria for an additional anxiety disorder, whereas only 17% of those with primary anxiety disorders met the criteria for an additional affective disorder. Similar patterns have also been reported in those studies attempting to define "pure" groups on the basis of cut-off scores on self-report measures, with a number of researchers failing to identify sufficient numbers of high depression/low anxiety participants for their methodological design (Alloy et al, 1990).

Finally, although in general anxiety and depression show a high degree of co-morbidity, there do appear to be at least some symptoms which are uniquely associated with one syndrome rather than the other (Alloy et al, 1990). Thus although both depression and anxiety are commonly associated with dysphoria and low self-confidence, severe sadness and suicidal acts appear to be relatively specific to

depression. In contrast, increased activity and hypervigilance tend to be found primarily in association with anxiety. It is not clear whether pessimistic attributional style is more closely correlated with those symptoms that are unique to depression, or those found in association with both disorders.

iv) Implications of the relationship between anxiety and depression for the specificity of attributional style:

There appears to be substantial evidence for an overlap between anxiety and depression at the level of both symptoms and clinical diagnoses. Although various conflicting theories have been proposed to explain this relationship, probably the most parsimonious has been that it is no more than a methodological artefact, brought about by the considerable item overlap in self report measures. However even this explanation would have considerable implications not only for the attributional literature, but for any model of depression or anxiety which has utilised those measures.

A large number of studies examining attributional style have used self-report measures to identify groups of relatively depressed individuals. However such measure's demonstrated lack of discriminant validity means that these groups are likely to contain both relatively depressed *and* anxious individuals. Even those studies examining the attributional style of individuals with a clinical diagnosis of depression, are likely to have included a substantial number of participants who would also meet diagnostic criteria for anxiety. Yet the majority of attributional research has neither acknowledged, nor controlled for this overlap. As a consequence, it is impossible to

say with any degree of confidence whether pessimistic attributional style is more closely associated with depression, anxiety or a mixture of the two.

In fact there is at least initial evidence to suggest that the relationship between anxiety and depression remains even after symptom overlap has been excluded (Clark & Watson, 1991). As a consequence the most widely accepted explanation of their relationship to date is that of Clark and Watson's (1991) tripartite theory. This theory postulates that anxiety and depression share a common core of general distress symptoms, but also incorporate symptoms which are unique to each disorder. The strong overlap between the various diverse measures of anxiety and depression was therefore the result of them tapping into the same underlying construct, either the personality dimension of Negative Affectivity (trait NA), or mood dimension of Negative affect (state NA).

Clark and Watson (1991) concluded that, whilst anxiety and depression shared a high loading on the dimensions of NA, they could be distinguished on the basis of their respective positions on a second set of orthogonal dimensions, known as positive affect (state and trait PA) which reflect an individual's sense of energy and enthusiasm about life and include mood descriptors such as excited, proud and interested. Thus depression, but not anxiety, was associated with low levels of positive affect, a state reflected in symptoms such as fatigue, anhedonia and hopelessness. In addition the tripartite theory suggested that anxiety might also be distinguished by its unique association with symptoms of physiological hyper-arousal.

It has not been entirely clear how pessimistic attributional style might relate to the constructs of negative and positive affectivity. Certainly Abramson et al's (1978) model implies a *specific* association between depression and pessimistic attributional style, on the basis of which one might hypothesise a relationship with low levels of positive affectivity, rather than negative affectivity. Yet, recent research examining the correlations between pessimistic attributional style and the dimensions of NA and PA has suggested precisely the opposite relationship (Luten & Mineka, 1994, reported in Mineka, Pury & Luten, 1995). Thus although pessimistic attributional style was found to be highly correlated with students' self-reported levels of NA, there was no significant relationship with a standard measure of PA. Given that depression and various anxiety disorders share a loading on NA it seems reasonable to suggest that the latter will also show evidence of pessimistic attributional style, at least for negative events.

In addition to hypothesising a general relationship between anxiety and pessimistic attributional style, the differential co-morbidity between depression and the anxiety disorders, allows a number of more specific predictions. Thus it seems reasonable to suggest that those anxiety disorders which are most commonly associated with depression (e.g. PTSD, OCD and panic disorder) should be more likely to be correlated with a pessimistic attributional style than those which have lower rates of co-morbidity (e.g. social phobia, generalised anxiety disorder, etc.) (Alloy et al, 1994).

The following sections outline the existing adult literature concerning the specificity of attributional style to depression, with particular reference to these hypotheses.

The specificity of attributional style - empirical research

Although a number of early studies were supportive of what Garber and Hollon (1991) termed the “broad” specificity of pessimistic explanatory style, it is only recently that researchers have sought to address the issue of “narrow specificity”. That is, whether pessimistic attributional style, as defined by Abramson et al (1978) is specific to depression, or is also associated with more closely related disorders such as anxiety.

i) Anxiety disorders and pessimistic attributional style

Ideally any study seeking to examine the specificity of pessimistic attributional style should measure not only the attributional style of the target anxiety disordered group, but also that of a comparison “depressed” and normal control group. Yet to date only two studies have fulfilled these criteria (Heimberg, Vermilyea, Dodge, Becker & Barlow, 1987; Heimberg et al, 1989) .

In 1987, Heimberg and colleagues used a modified version of the Attributional Style Questionnaire (ASQ) to compare the attributions of clinically diagnosed dysthymic and anxiety disordered patients with those of normal controls. Consistent with the predictions of the reformulated learned helplessness model, Heimberg et al (1987) found only those anxiety disordered patients with moderate levels of depressive symptoms showed evidence of a pessimistic attributional style, suggesting that the latter was both sensitive and specific to depression.

However, the heterogeneous nature of Heimberg et al's (1987) anxiety disordered group did not allow them to examine potential differences in the relationship of attributional style to various anxiety disorders. For this reason in their follow up study Heimberg et al (1989) added a further 37 subjects to their original data set, which allowed their findings to be analysed in terms of specific anxiety disorders (e.g. agoraphobia, panic disorder and social phobia). As might be expected Heimberg et al (1989) again found that the dysthymic group showed significantly more negative attributional style than their normal controls. However their results also indicated a significant relationship between pessimistic attributional style and several of the anxiety disorders. In particular, individuals diagnosed with agoraphobia and social phobia scored higher on the ASQ composite measures for negative events than both normal controls and those individuals with other anxiety diagnoses. In fact, after controlling for levels of self-reported depression, Heimberg et al (1989) found that individuals diagnosed with social phobia not only showed a significantly more pessimistic attributional style than any of the other anxiety disordered groups, but also than the dysthymic group.

ii) Summary of attributional style and anxiety disorders:

Although the conclusions which can be drawn from a single study must remain tentative, Heimberg et al's (1989) findings provided at least preliminary evidence not only for a relationship between pessimistic attributional style and clinical anxiety, but more particularly, with social phobia. In direct contrast to their earlier study, their appeared to be little evidence for the specificity of depressive attributional style.

Interestingly these findings appear to run counter to those which might be predicted on the basis of co-morbidity rates, as research has generally suggested that individuals who receive a diagnoses of social phobia are relatively *less* likely to experience depression than those with other anxiety disorders (see Di Nardo & Barlow, 1990 for a notable exception). Although a number of explanations for this association have been suggested, possibly the most plausible has been that it constitutes an artefact of the measure used to asses attributional style used within Heimberg et al's (1987, 1989) studies, a proposal which will be discussed in greater detail later.

To date Heimberg et al (1989) is the only study within which the attributional style of adults with a clinical anxiety diagnosis has been examined adequately. However a number of studies have explored the attributional style associated with relatively high levels of self-reported anxiety in non-clinical populations. Although it is recognised that self-report symptoms cannot be assumed to provide an analogue for clinical levels of anxiety, it is possible that these may shed some light on the relationship between attributional style and anxiety in general, and more particularly social phobia. The following sections therefore examine existing research with non-clinical populations concerning the relationship between attributional style, generalised anxiety and social anxiety.

iii) Attributional style and self-reports of general anxiety:

Although it appears that individuals experiencing relatively high levels of self-reported anxiety tend to attribute negative events to internal, stable and global causes, to date the exact nature of the relationship has remained uncertain (Nezu, Nezu & Nezu, 1986,

reported in Mineka et al, 1995; Ralph & Mineka, 1993). Both Nezu et al. (1986) and Ralph and Mineka (1993) found that depression and, self-reported anxiety (as measured by the State Trait Anxiety Inventory and the Beck Anxiety Inventory respectively) were significantly correlated with a more pessimistic attributional style. However, the extensive overlap between their self-report measures made it difficult to disentangle the respective effects of the two syndromes.

iv) Attributional style and self-reports of social anxiety

The relationship between social anxiety in adults and attributional style has been investigated using a variety of different constructs and paradigms. In one of the first studies to examine the attributions of socially anxious individuals, Arkin, Appelman and Burger (1980) asked participants to act as a lay therapist, interacting with “clients” with the expectation that their performance would be evaluated either then, or at some future date. Arkin et al (1980) found that individuals reporting relatively high levels of social anxiety took more responsibility for failure than success, particularly when they thought that their performance was to be evaluated in their presence. This reversal of the self-serving bias was in marked contrast to the explanations of those participants who reported lower levels of anxiety, who generally took more credit for success than failure.

Although there appears to be strong evidence to support an association between social anxiety and a reversal of the self-serving bias, the implications for Abramson et al’s (1978) model are uncertain. The reformulated attributional model suggests that depressed individuals will tend to provide relatively *internal* explanations for negative events, however it is not clear whether these are equivalent to those reported in studies examining a single

dimension. As Weiner (1986) points out, the “internal” causes provided in such studies typically confound more than one dimension, therefore it is impossible to determine whether an individual is responding to the stability, globality or internality of the perceived cause.

A number of studies have used individual’s rating of various causal factors (e.g. ability, effort skill, task difficulty and effort) in an attempt to more accurately measure attributional style. Drawn directly from the achievement literature, these factors are hypothesised to vary along the dimensions of stability and internality, e.g. ability as an internal and stable factor, luck as an external and unstable causal factor (Weiner, 1986). Teglasi and Hoffman (1982) found that those individuals with high levels of self-reported shyness tended to attribute positive outcomes to causes that were less stable than their non-shy counterparts, whilst attributing negative outcomes to causes that were both more internal and more likely to recur. Similarly Alden, (1987) reported that although all participants tended to attribute feedback of improved performance to internal factors, socially anxious undergraduates were more likely to make these to the unstable factor of effort rather than the stable factor of ability.

Although the use of attributional factors probably represents an improvement on the measurement of a single attributional dimension, these studies still suffer from a number of methodological problems. Firstly, none of these studies controlled for participants’ levels of concurrent depression, and as a result it is impossible to determine whether the demonstrated differences in attributional style were associated with individual’s social anxiety, depression or a combination of the two. Secondly, as

with studies of a single attributional dimension, it is difficult to determine the significance of studies utilising attributional factors for the reformulated learned helplessness model. Although the factors of ability and luck fit relatively easily into the model's predictions, it is not clear how attributions of either task difficulty or effort might be explained. Thus for example, although the attributional reformulation would predict that ability (as stable and internal factor) would be provided as an explanation of failure by depressed individuals, it can make no predictions concerning an attribution of effort (an internal, but unstable factor).

To date only one study has been completed within which the three attributional dimensions and both social anxiety and depression have been measured. Johnson, Petzel and Johnson (1990) examined the relationship between two established measures of social anxiety (Social Avoidance and Distress; Fear of Negative Evaluation, Watson & Friend, 1969) and student's attributional style, as measured by the ASQ. They found that participants who reported high levels of social anxiety appeared to have a more pessimistic attributional style than the control group, even after controlling for self-reported depression. More specifically, high scorers on the SAD showed self-deprecating attributions in response to the affiliation scale of the ASQ, whereas those individuals who reported high scores on the FNE showed the same pattern in response to both the affiliation and achievement situations. As Johnson et al (1990) point out, such findings are perhaps to be expected as the SAD scale was designed as a measure of individual's discomfort in social settings, with little emphasis on other's perceived approval or disapproval. In contrast the FNE specifically focuses upon the individual's concerns about evaluation and achievement

iv) Implications of adult research for the specificity of attributional style:

Although admittedly incomplete, when taken as a whole the adult literature suggests a link between pessimistic attributional style and both “normal range” and clinical social anxiety, which is due to more than simply concurrent depression (Heimberg et al, 1989; Johnson et al, 1990).

In an attempt to explain this association Johnson et al (1990) have suggested that high levels of social anxiety may serve as a precursor in the development of depression. They hypothesised that socially anxious individuals become enmeshed in a cycle of withdrawal and inhibition in social situations, which leads them to experience reduced levels of social reinforcement, and eventually depression. Although plausible, this hypothesis cannot explain why research has indicated a specific association between pessimistic attributional style and social phobia, rather than other disorders. As outlined above, a number of anxiety disorders appear to be more closely related to depression than social phobia, in terms of both their intra-episode and life-time comorbidity. If the association with social anxiety were solely a result of it serving as a risk factor for depression, then logically one would expect these to also show evidence of a more pessimistic attributional style.

An alternative, and perhaps more plausible explanation has been offered by Mineka et al (1995), who suggested that the apparent specificity of the association with social anxiety may simply be an artefact of the instrument used to assess participant’s attributional style, the Attributional Style Questionnaire (ASQ). The ASQ asks subjects to “vividly imagine” a series of outcomes, half of which involve affiliative

events (social failure and loss on the negative items and social success on the positive items) whilst the remainder describe achievement related events. As Mineka et al (1995) point out, social situations are of prominent concern to individuals who experience social anxiety and as a consequence it is perhaps not surprising that they tended to attribute these events to more pessimistic causes. They hypothesised that individuals diagnosed with anxiety disorders other than social phobia might also show evidence of pessimistic attributional style if questioned about events which were of relevance to them.

Interestingly, although never explicitly discussed within the attributional reformulation, the logic of the diathesis-stress component does imply that pessimistic attributional style in a particular content domain (e.g. for interpersonal events) may provide a “specific vulnerability” to depression when an individual experiences negative life events in that content domain (e.g. social rejection). In an attempt to further test this hypothesis Luten, Ralph and Mineka, (1994) constructed a “threat” version of the ASQ, within which anticipated threatening events were rated on the dimensions of internality, stability and globality. Preliminary results have suggested that composite scores on this measure are significantly correlated with generalised anxiety (as measured by the Beck Anxiety Inventory) in a non-clinical population, however whether or not the Threat ASQ will also correlate with particular anxiety disorders remains to be determined.

It is possible then that *all* anxiety disorders are associated with pessimistic attributional style for those life events which are most relevant to them. However until further

studies are carried out within which the attributional style of specific anxiety disorders are compared both with depressed and control groups, using events which are relevant to each, it will not be possible to say with any degree of certainty whether pessimistic attributional style is specific to particular content domains for particular disorders, or to particular disorders.

These findings have considerable implications for the specificity of pessimistic attributional style to childhood depression. In particular, one might hypothesise a specific link between children's attributional style and social anxiety, in both its clinical and non-clinical forms. However, it is worth bearing in mind that considerable differences exist between the psychopathology of children and adults, which may limit the extent to which findings can be extrapolated from one population to the other. More specifically, anxiety disorders in childhood appear to show quite different patterns of co-morbidity with depression than their adult counterparts, which might well have implications for their predicted associations with pessimistic attributional style. The following sections therefore outline the current literature concerning the relationship between childhood anxiety and depression.

VI

Depression and anxiety in children

In the last ten years significant evidence has emerged from assessment, clinical, family history and treatment studies for an association between anxiety and depression in children (Brady & Kendall, 1992). Although an extensive review of this literature is beyond the scope of the present study, the following sections outline some of the research thought to be of particular relevance.

i) The comorbidity of childhood anxiety and depression:

A number of studies have examined the concomitant presence of anxiety disorders in children and adolescents diagnosed with a depressive illness (Carey, Finch & Imm, 1989, reported in Brady & Kendall, 1992; Kovacs, Gatsonis, Paulauskas & Richards, 1989). Carey et al. (1989) found that 55% of their inpatient sample met diagnostic criteria for both affective and anxiety disorders, although the small size of their sample (29 children) limited the conclusions which could be drawn on the basis of their results.

Interestingly this represented a substantially higher rate of co-morbidity than that reported by Kovacs et al (1989) for children seen within an outpatient setting, of whom only about a third received an additional diagnosis of an anxiety disorder. This disparity may well reflect the greater severity of symptoms seen within an inpatient setting.

To date, surprisingly few studies have examined the pattern of life-time co-morbidity for childhood anxiety and depression. As part of a large scale study examining those

characteristics associated with each of the DSM-III-R anxiety disorders, Last, Perrin, Hersen and Kazdin (1992) reported on the prior history of depressive disorders for 188 children aged between 5 and 18 years. They found a substantial proportion of each diagnostic group had experienced a depressive disorder at some point during their lives, ranging from a low of 25% for those children diagnosed with OCD, to a high of 55% associated with social phobia. Interestingly this appears to be almost the opposite pattern to that found in adults, where, as previously discussed, social phobia has relatively low rates of co-morbidity with depression, when compared to other anxiety disorders (including OCD). Unfortunately the large number of variables examined, together with the relatively small numbers of children in some diagnostic groups, meant that Last et al (1992) were unable to explore the statistical significance of these results, and hence it is difficult to determine whether there are “real” differences in co-morbidity associated with each diagnoses.

Despite some methodological problems, in general those studies involving children a clinical diagnoses appear to have provided relatively good evidence for the co-morbidity of anxiety and depressive disorders. Thus although in a recent review of the literature Brady and Kendall (1992) found rates ranged from 0.8 to 62%, *all* of the studies examined reported at least some degree of co-morbidity, suggesting that anxiety and depression may well not constitute distinct disorders.

Recently research has begun to focus upon children’s self-report measures as a method for exploring the relationship between anxious and depressive symptoms. Of these measures, probably the most widely used have been the Revised Children’s Manifest

Anxiety Scale (RCMAS; Reynolds & Richmond, 1978), the State-Trait Anxiety Inventory for Children (STAIC, Spielberger, 1973) and the Children's Depression Inventory (CDI; Kovacs & Beck, 1977). Given that each of these was adapted from an existing adult measure, for which poor discriminant validity have consistently been demonstrated (see previous discussion) it is perhaps not surprising that the correlations between children's measures of anxiety and depression have also proved to be high (King, Ollendick & Gullone, 1994).

In a much cited study, Wolfe, Finch, Saylor, et al, (1987) reported data on the self-reported symptomatology of 102 psychiatric inpatients, ranging in age from 6 to 16 years. During a two week assessment period participants were asked to complete a number of self-report inventories, including the CDI, STAIC and the RCMAS. Wolfe et al (1987) found significant intercorrelations between children's self-reported anxiety and depression (a correlation of .56 between the CDI and RCMAS), and on the basis of these concluded that these measures were more likely to be assessing the broad band construct of negative affectivity (Watson & Clark, 1984) than separate constructs of anxiety and depression.

In one of the few studies to examine anxious and depressive symptoms in non-clinic referred children, Ollendick and Yule (1990) asked 327 British and 336 American school-children to complete self-report measures of depression (CDI), general anxiety (RCMAS) and fear (Fear Survey Schedule for Children-Revised; Ollendick, 1983). Ollendick and Yule (1990) found significant correlations between depression and both general anxiety and fear, although the latter appeared to be somewhat smaller in size.

In addition, children who reported high levels of depressive symptoms (e.g. scores of 19 or greater) also experienced relatively higher levels of general anxiety than their non-depressed counterparts. Interestingly, however the two groups appeared to differ in terms of their self-reported levels of fear.

Ollendick and Yule's (1990) study was one of the few to examine the relationship between depression and a particular form of self-reported anxiety (fear), and as such appeared to produce at least initial evidence that anxiety and depression could be differentiated when more specific measures were used. On a similar note, recent studies of both elementary school children and adolescents self-reported social anxiety have suggested that they may be relatively distinct from depressive symptomatology (La Greca, 1989, Inderbitzen & Hope, 1995). Thus La Greca (1989, reported in Inderbitzen & Hope, 1995), found only weak correlations between a measure of social anxiety (Social Anxiety Scale for Children-Revised, SASC-R: La Greca & Stone, 1993) and one of depression, as compared to that for a general measure of anxiety (RCMAS).

ii) The relevance of the tripartite theory to childhood distress:

There appears to be strong evidence from both diagnostic and self-report studies to suggest a significant relationship between childhood anxiety and depression. However whether this relationship reflects an overlap in constructs, a shared underlying construct (e.g. negative affectivity; Watson & Clark, 1984), or is merely an artefact of item overlap remains controversial. A number of researchers have suggested that a better understanding of the relationship between childhood anxiety and depression

might be achieved using Clark and Watson's (1991) tripartite theory to guide both the selection of measures and the interpretation of results. In an attempt to test this hypothesis, several have employed sophisticated multivariate analyses to explore the underlying structure of self-report anxiety and depression measures.

In an attempt to delineate the common and distinct aspects of the two disorders, Lonigan, Carey & Finch (1994) examined the self-reported symptomatology of 233 children diagnosed with either "pure" anxiety or depression. They found that the total and sub-scale scores of the CDI were significantly correlated with those of the RCMAS, for both the depressive and anxiety disorders groups, indicating at least a moderate degree of overlap between these measures. However, on exploring the two groups patterns of scoring within the sub-scales of the two measures, Lonigan et al (1994) found a number of significant differences. Thus although the depressed group scored significantly higher on the CDI total score, and two of its sub-scales (self-dissatisfaction and low interest), than the anxious group, there were no significant differences between the two groups for either the depressed affect sub-scale of the CDI, RCMAS total score, physiological anxiety or concentration sub-scales. Anxious children scored significantly higher on the worry factor than their depressed counterparts.

On the basis of these results a specific pattern of associations between the sub-scales of the CDI and RCMAS and the components of the Tripartite model can be hypothesised. Thus those scales common to both the depressed and anxious groups (e.g. depressed affect, physiological anxiety and concentration) may be tapping into negative

affectivity, whilst those more specifically associated with depression (e.g. self-dissatisfaction and low interest) and anxiety (e.g. worry) may be measuring low levels of positive affectivity and hyperarousal respectively. Unfortunately Lonigan et al's (1994) findings are substantially weakened by the fact that over half of the children in the sample were diagnosed following DSM-III guidelines, which discourage giving concurrent diagnoses of anxiety and depression. As Lonigan et al (1994) themselves point out, it seems likely that a substantial number of children who received a single "pure" diagnoses (primarily of depression) on the basis of these criteria, would have received a concurrent anxiety diagnosis, and hence been excluded from the study, under the less restrictive DSM-III-R guidelines.

In a similar study examining the cognitions of adolescent psychiatric inpatients, Jolly and Dykman (1994) isolated factors largely consistent with the tripartite theory (i.e. anxiety- and depression-specific cognitions and general cognitions) which appeared to discriminate between those adolescents diagnosed with anxiety and depressive disorders. However, research using confirmatory factor analysis has produced somewhat contradictory results. Crowley and Emerson (1996) asked 273 school children aged between 8 and 12 years to complete several self-report measures, including the RCMAS and the CDI. Confirmatory factor analyses suggested that a two-factor model (e.g. anxiety and depression as distinct constructs) provided a better explanation of children's self-reported symptoms than that of a single factor (e.g. negative affectivity). However it is worth pointing out that Crowley and Emerson (1996) did not investigate the possibility of a three-factor model, which would actually be more consistent with the model of anxiety and depression proposed by Clark and

Watson (1991). Thus a three factor model might capture “distress” on a single factor, with the second and third factors reflecting those features specific to anxiety and depression.

Empirical evidence for an overlap in childhood depression and anxiety has several implications for the specificity of attributional style. It seems reasonable to hypothesise that, as with adults, pessimistic attributional style may well not be specific to depression, but associated with both clinical and non-clinical levels of anxiety. More specifically, research concerning the different rates of co-morbidity between depression and various childhood anxiety disorders also allows us to hypothesise about which, if any, might be more likely to be associated with pessimistic attributional style. Thus given the high rate of co-morbidity between social phobia and depression, it seems reasonable to suggest that children with such a diagnosis may have a more pessimistic attributional style, at least for social situations.

The conceptualisation of anxiety and depression in terms of negative and positive affectivity, also begs the question, of to which, if any attributional style might be more closely related. Certainly adult research (Luten & Mineka, 1994) has suggested that pessimistic attributional style might be associated with negative affectivity, and hence non-specific to depression, however it is possible that the two populations may show a qualitatively different relationship. The following sections outline the existing literature concerning children’s attributional style, and the extent to which these questions have been answered.

VII

Attributional style and specificity in children

Given that the specificity of adult's pessimistic attributional style to depression has only come under careful scrutiny in the past five years, it is perhaps not surprising that the question has received little or no attention within the child literature. Thus although a small number of studies have examined the association between children's attributional style and anxiety, to date only two have attempted to integrate their findings with the existing body of work considering attributional style and depression (Rodriguez and Routh, 1989, Curry & Craighead, 1990).

i) Attributional style and childhood anxiety disorders:

Bell-Dolan and Last (1990, reported in Bell-Dolan, 1995) provided preliminary evidence that anxiety disorders in children may be associated with more negative attributional style. Using the CASQ the authors compared children and adolescents with a range of anxiety disorders, to both a group diagnosed as having attention deficit hyperactivity disorder (ADHD) and normal controls. Their results indicated that children with anxiety disorders exhibited a significantly more pessimistic attributional style for bad events than either of the comparison groups. Unfortunately, Bell-Dolan (1995) did not provide any information as to whether these findings were specific to particular anxiety disorders. More importantly, without information about the participants levels of depression, it is impossible to determine whether or not the demonstrated association between anxiety and pessimistic attributional style was simply an artefact of concurrent depression.

ii) *Attributional style and non-clinical anxiety in children:*

To date only two studies have explored the relationship between children's attributional style, self-reported depression and anxiety. Rodriguez and Routh (1989) asked children aged between 8 and 13 years who had recently been placed in programme for learning disabilities to complete the CASQ, together with a measure of self-reported depression (CDI) and general anxiety (RCMAS). Rodriguez and Routh (1989) found that not only did children from the learning disabled group report significantly higher levels of depression and anxiety than the control group of non-learning disabled children, but that these were both significantly correlated with attributional style.

Interestingly, Rodriguez and Routh (1989) made no attempt to interpret the demonstrated relationship between anxiety and attributional style, which appears to suggest that the former may actually be associated with a relatively *optimistic* attributional style. There are however a number of methodological flaws within Rodriguez and Routh's (1989) study, which weaken any conclusions drawn on the basis of its findings. Thus although Rodriguez and Routh (1989) found a significant correlation between their participant's scores on the CDI and those of the RCMAS, they made no attempt to control for this overlap in the subsequent analysis. In addition, although Rodriguez and Routh (1989) described their population as "learning disabled", no details were provided as to the nature of the difficulties the children experienced, nor whether these were likely to influence their ability to understand the measures. As a result it is difficult to determine how applicable these results are to a general child population.

As part of a study examining the specificity of pessimistic attributional style to clinical depression, Curry and Craighead (1990) asked 63 adolescents with a diagnosis of major depression to complete a number of self-report measures, including the RCMAS and CDI. Although Curry and Craighead (1990) found no relationship between anxiety and pessimistic attributional style, what is perhaps more interesting is that they also failed to replicate the numerous earlier studies which had demonstrated a strong relationship between depressive symptoms and pessimistic attributional style for negative events. Thus, although the severity of adolescent depression was significantly related to a failure to make internal, global and stable attributions for *positive* events, it was not related to attributional style for negative events.

iii) Summary of research concerning attributional style and anxiety in children

As can be seen the research examining the relationship between attributional style and anxiety has been both scant and largely methodologically flawed. Possibly as a consequence, it appears to have produced essentially contradictory results. Thus although Bell-Dolan and Last's (1990) study suggests at least the possibility of an association between clinical anxiety disorders and attributional style, both Curry and Craighead's (1990) and Rodriguez and Routh's (1989) research not only indicates that self-reported anxiety is not related to pessimistic attributional style, but that it may actually be associated with more optimistic interpretations for negative events. Clearly there is a need for further research in which the associations between children's attributional style, depression and anxiety are more closely examined.

VIII

Rationale for the present study

The purpose of the present study was therefore to examine the pattern of associations between children's attributional style, self-reported anxiety and depression. On the basis of the existing literature concerning the overlap between depressive and anxious symptomatology it was suggested that a more pessimistic attributional style (e.g. a tendency to provide relatively internal, global and stable explanations for negative events, whilst suggesting external, specific and unstable causes for positive events), might well not be specific to depression, but also associated with high levels of anxiety.

In addition, on the basis of the high rate of co-morbidity of childhood social phobia and depression (Last et al., 1992), together with the strong association between social anxiety and attributional style demonstrated within an adult population, it was suggested that a similar association might also exist in children. If, as Mineka et al (1995) suggest, pessimistic attributional style is "specific" to those events which are important to the anxious individual, then one might predict that socially anxious children would only show evidence of such a style in response to negative social events. Unfortunately, unlike its adult counterpart, the Children's Attributional Style Questionnaire (CASQ) is not explicitly differentiated into achievement and affiliative events. However Turner and Cole (1994) have recently developed an adaptation of the CASQ, within which children's attributional style in relation to negative social and academic events is measured. It seems plausible to suggest that children with high levels of social anxiety might choose more internal, stable and global explanations for the social, but not academic events.

Although primarily concerned with examining the relationship between children's attributional style and anxiety, the methodology employed within this study also provided an opportunity to evaluate the relevance of Clark and Watson's (1991) tripartite theory to a child population. In particular we sought to explore whether the pattern of associations at both the level of whole measures and sub-scales was consistent with that which might be predicted on the basis of the tripartite theory (Inderbitzen & Hope, 1995).

School children aged between 8 and 11 years were asked to complete measures of attributional style (CASQ), self-reported depression (CDI), general anxiety (RCMAS) and social anxiety (SASC-R). This age range was selected because it was felt to group children at similar cognitive, developmental and psychosocial stages (Bee, 1985) and as such the results were unlikely to be confounded by the effects of developmental differences. Perhaps more importantly however, this constitutes the youngest age group for which a relatively stable attributional style has been demonstrated (Fincham & Cain, 1986). As a consequence a greater understanding of this stage in the development of attributional style must be a priority as it may offer the opportunity of intervention in order to prevent the development of a more stable, trait-like attributional style.

The correlations between children's attributional style (as measured by the total CASQ, and the social and academic CASQ scales, Turner & Cole, 1994) and their self-reported levels of general and social anxiety, after controlling for depression, were

examined. Although it was recognised that this did not constitute an ideal methodology, it was felt that the highly exploratory nature of the study justified the use of both a correlational structure and self-report measures rather than clinically diagnosed groups.

To the extent that an association between pessimistic attributional style and the experience of anxiety in children could be demonstrated, both theory and therapy might be advanced. Certainly such an association would have important implications for the reformulated learned helplessness model as applied to children, and in particular its specificity to depression. More generally, information about how the attributional style of anxious and depressed children compare might well have implications for broader theories of internalising problems, and in particular the debate as to the underlying nature of the relationship between depression and anxiety (Clark & Watson, 1991).

In addition, although cognitive-behavioural approaches to the treatment of anxiety disorders have become popular in recent years and appear to be effective in many instances, it is not clear which aspects of the treatment are most helpful or even necessary. Knowledge about the patterns of attributions associated with both general and social anxiety symptoms, would allow clinicians to take the most relevant components from existing treatments as well as to design those needed to specifically target a child's maladaptive attributions.

VIII

Hypotheses of the present study

On the basis of current literature concerning gender differences in self-reported anxiety and depression, it was hypothesised that:

- i) Girls would report relatively higher levels of both general anxiety and social anxiety than boys.
- ii) There would be no gender differences in self-reported levels of depression.

On the basis of Clark & Watson's (1991) tripartite theory, it was hypothesised that:

- i) Children's self-reported depressive symptoms would show a stronger correlation with their levels of general anxiety than social anxiety.
- ii) Children's responses to the CDI, SASC-R and RCMAS would be most closely modelled by a three-factor solution, with factors representing negative affectivity, low levels of positive affectivity and the physiological symptoms of anxiety respectively.

On the basis of the available adult literature concerning the relationship between depression, anxiety and attributional style it was hypothesised that:

- i) Children's symptoms of depression would be significantly correlated with pessimistic attributional style i.e. attributing negative events to internal, stable and global causes and positive events to external, unstable and specific causes.

- ii) Children's symptoms of general anxiety would be significantly correlated with pessimistic attributional style for events after controlling for self-reported depression.
- iii) Children's symptoms of social anxiety would be significantly associated with pessimistic attributional style for *social* events, after controlling for levels of self reported depression.

X

METHOD

Participants:

One hundred and twenty-nine children (69 females and 60 males) recruited from four primary schools participated in the study. The average age of the children was 9 years 5 months (sd = 10 months), with an age range of 8 years 1 month to 11 years 1 month. Although socio-economic information was not formally collected, all of the participating schools were situated in predominantly middle class areas.

Procedure:

Prior to the study's initiation, ethical approval was sought and obtained from the Joint UCL/UCLH Committee on the Ethics of Human Research (see Appendix A). The headteachers of five primary schools were then contacted by a letter (see Appendix B) providing initial details about the study and asking whether they might be interested in allowing children from their school to take part. Of these, four agreed to meet with the researcher in order to receive more detailed information about the study and air any concerns, on the basis of which a number of changes were made to the proposed methodology. All four of these schools subsequently agreed to take part in the study.

At those schools that agreed to take part, detailed information about the study and consent forms were sent to the parents of all children aged between 8 and 11 years (see Appendix C and D). Parents were told that the study would involve their children completing questionnaires in order to help the researchers learn more about young children's thoughts and feelings, particularly about social situations. Approximately

35% percent of all parents contacted returned the consent forms, of whom 88% gave permission for their child to participate in the study.

On the day of testing children were also provided with information about the study and given the opportunity to withdraw from the study. Only those children for whom both parental written consent and verbal consent at the time of testing had been obtained were eligible for participation. The self-report measures were administered in small groups of between 5 and 10 children, depending upon how many children from the same class had agreed to take part.

Testing took place over two sessions separated by a maximum of two weeks. These sessions varied between 30 and 45 minutes in length, depending upon the age of children and the questions they asked about the study. In the first session children were asked to complete the Social Anxiety Scale for Children-Revised (SASC-R), Children's Manifest Anxiety Scale-Revised (RCMAS) and the Children's Depression Inventory (CDI). The measures were presented in a fixed order, with the questionnaire that was felt to be the most difficult to complete first (e.g. SASC-R, then CDI and then RCMAS). The Children's Attributional Style Questionnaire was completed at the second session.

Task instructions were read aloud by the experimenter, and sample items preceded each instrument in order to familiarise the participants with the questionnaire. Items were read aloud until the children demonstrated a clear understanding of how each measure was to be completed, after which children were asked to continue reading silently. Individualised help was provided to any child who experienced difficulty.

Measures:

Children completed the four paper and pencil self-report questionnaires described below.

Social Anxiety Scale for Children - Revised (SASC-R; La Greca & Stone, 1993)

consists of 18 items reflecting fears of negative evaluation and social avoidance and distress, together with four filler items concerning children's activity preferences. Separate versions of the scale exist for elementary school aged children, adolescents and parents. In the present study, the elementary-school version of the scale, which uses language more appropriate to this population, was used.

Children are asked to silently read each item (e.g. "I worry about being teased") and then indicate along a five point continuum how true they feel it is for them (e.g. "Not at all (1), Hardly ever (2), Sometimes (3), Most of the time (4) and All the time (5)").

Factor analyses of the items of the SASC-R have resulted in three factors (La Greca & Stone, 1993); children's fears or concerns regarding negative evaluation from peers (Fear of Negative Evaluation, 8 items), social distress or discomfort specific to new situations or unfamiliar peers (Social Avoidance and Distress-New, 6 items) and general social inhibition (Social Avoidance and Distress - General, 4 items). Children's ratings for each item that loads on a particular factor can be summed to obtain a total score for that sub-scale. La Greca and Stone (1993) have recommended that these, rather than a total score be used as a result of the conceptual and empirical distinctions between the three sub-scales.

The internal consistency ($\alpha = .69$ to $.86$) and temporal stability ($r = .67$ to $.70$) of the three sub-scales has been adequately demonstrated (La Greca & Stone, 1993). In addition, La Greca and Stone (1993) have reported significant correlations between the sub-scales of the SASC-R and both children's sociometric status and their self-reported social competence, providing evidence for their concurrent validity.

Children's Depression Inventory (CDI; Kovacs and Beck, 1977) is a 27 item questionnaire that asks participants to endorse statements about themselves which reflect the cognitive and somatic symptoms of depression. One item assessing children's levels of suicidal ideation was dropped from the present study, both in order to increase the acceptability of the questionnaire to both children and parents, and also because of the relative rarity of such ideation within a non-clinical population. This questionnaire was designed to be used with children and adolescents aged between 7 and 17 years of age and is the most frequently and commonly used measure of children's depressive symptomatology amongst researchers and clinicians (Brady & Kendall, 1992).

Each item contains three self-report statements graded in severity from 0 to 2. A sample item is as follows;

- I am sad once in a while (0)
- I am sad many times (1)
- I am sad all the time (2)

Children are asked to choose one of these sentences, based on how they have been feeling during the preceding two weeks. The total score is obtained by adding all the

items together, with a higher score representing a greater level of self-reported depression.

The CDI has been shown to have adequate internal consistency (alpha coefficients ranging from .71 to .94; Saylor, Finch, Spirito and Bennett, 1984) and test-retest reliability (ranging from .43 to .83; Kovacs, 1983). The concurrent validity of the CDI has been established in a study which demonstrated a significant correlation ($r = -.72$) between level of depression and self-esteem as measured by the Coopersmith Self-Esteem Inventory (Kaslow et al, 1984). In addition Kazdin (1981) reported a correlation of .54 between self-reported depression as measured by the CDI and the psychiatric diagnosis of depression.

Several studies have evaluated the factor structure of the CDI, producing somewhat mixed results. Thus although Kovacs (1983) reported a single factor of depression for the CDI, subsequent studies have reported two (Cantwell and Carlson, 1983), four (Helsel & Matson, 1984), six (Donnelly & Wilson, 1994) and eight (Saylor et al, 1984) factor solutions. These differences may reflect variations in both the population studied and the method of analysis employed (Charman, 1994)

Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds and Richmond, 1978) is a 37 item questionnaire assessing anxiety symptoms in children and adolescents aged between 6 and 19 years. The RCMAS consists of 28 items that pertain to the subjective, physiological and behavioural characteristics of anxiety, in addition to which a further 9 items make up the Lie scale which is thought to assess children's test-taking attitude. The RCMAS was included in the present study as a

measure of non-specific anxiety symptoms and was selected because of both its widespread use in previous research (Brady & Kendall, 1992) and more particularly, in those studies examining the relationship between anxiety and attributional style (Curry & Craighead, 1990; Rodriguez & Routh, 1989).

Items take the form of self-statements (e.g. "I am anxious") to which the participant must respond YES or NO, based on whether they feel they are true about them or not. Children receive a score of 1 for each YES response.

Factor analysis of the RCMAS items (excluding those belonging to the Lie scale) has resulted in three factors (Reynolds and Richmond, 1985); worry (11 items), physiological anxiety (10 items) and concentration (7 items). Children's responses for each item belonging to a particular factor can be summed to obtain a total score for that subscale. In addition the three sub-scales can be summed to produce a Total Anxiety Score.

Reynolds and Richmond (1985) have reported internal consistency coefficients ranging from .56 to .80 across 11 age groups for its three sub-scales and above .80 for its total anxiety score. The RCMAS has been shown to have adequate test-retest validity (Klein and Last, 1989). In addition, its validity as a measure of chronic anxiety is supported by its .85 correlation with the Trait scale of the State-Trait Anxiety Inventory for Children (Reynolds and Richmond, 1985).

Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984) is a 48 item questionnaire which has been used to assess the way in which children typically

attribute causality for good and bad events. This questionnaire was designed for use with children and adolescents aged between 8 and 18 years of age.

The CASQ, also referred to as the KASTAN-R, contains 48 forced-choice items, each of which consists of a hypothetical positive or negative event involving the child (e.g. “You fail a test”) together with two possible causes of that event (e.g. “All tests are hard” versus “Only some tests are hard”). Half of the situations represent positive outcomes whilst the remainder represent negative outcomes. Three dimensions of children’s attributions are assessed (internality-externality, globality-specificity and stable-unstable), with 16 questions pertaining to each. The two causes provided hold constant two of these attributional dimensions whilst varying the third.

Children are asked to pick the sentence from the pair which they feel best explains why the imagined event had happened to them. The CASQ is scored by assigning 1 to each internal, stable or global response (when that dimension is varied) and 0 to each external, unstable or specific response. Sub-scales are formed by summing these scores for each of the three causal dimensions, separately for positive and negative events. In addition positive and negative composite scores can also be derived by summing the individual’s dimension scores for a particular type of event. The lower the positive and the higher the negative composite scores the more pessimistic the attributional style.

The CASQ subscale scores have been shown to possess only modest reliabilities. Thus although their internal consistencies have mostly exceeded scale inter-correlations, indicating that the scale are empirically distinguishable (Campbell & Fiske, 1959) they

have not been high. Higher internal consistency has been found for the positive and negative composites, ranging from .47 to .73, and from .42 to .67 respectively. The CASQ has been shown to be temporally stable over time, with test-retest reliabilities of .61 and .35 for the overall composite score over 3 months and 12 months respectively. These test-retest correlations appear to increase with age.

Social and Academic CASQ (Turner & Cole, 1994) is a modified version of the CASQ, which was constructed in order to assess children's pessimistic attributions about negative social and academic events.

The Social and Academic CASQ consist of 16 items from the CASQ which describe negative social and academic events. Each item consists of a hypothetical negative event, for which two possible explanations are provided. One of these explanations represents a relatively internal, stable and global causal attribution, which is hypothesised to reflect a more pessimistic attributional style. The scales are scored by assigning 1 to each of these pessimistic attributions, and 0 to every alternative response. Social (9 items) and Academic (7 items) scores are formed by summing the responses for each type of situation.

The Social and Academic sub-scales of the CASQ have been shown to have moderate reliability for children aged between 9 and 15 years (KR-20s ranged from .65 to .70; Turner & Cole, 1994).

XI

RESULTS

On the basis of existing literature concerning the relationship between children's symptoms of anxiety and depression (Brady & Kendall, 1992) together with the latter's established relationship to pessimistic attributional style (Gladstone & Kaslow, 1995), a number of specific hypotheses were made concerning the pattern of associations between measures. These hypotheses were used to organise the analysis of data.

1. Descriptive statistics:

The means, standard deviations and alpha reliability coefficients of the three symptom measures, together with those of their sub-scales are presented in Table 1. All of the measures demonstrated acceptable levels of internal consistency as measured by Cronbach's (1951) alpha. Children's pattern of scoring within the lie subscale of the RCMAS did not suggest a "deviant" pattern of responding (Reynolds & Richmond, 1978)

Table 1
Means, standard deviations and internal consistency of depression, social and general anxiety measures

Measure	Mean	SD	Range	Alpha
CDI total score	11.58	6.87	0 – 31	.83
RCMAS total score	11.20	6.65	0 – 27	.85
<i>Concentration</i>	3.13	2.26	0 – 9	.69
<i>Worry</i>	3.88	3.09	0 – 10	.84
<i>Physiological</i>	4.19	2.19	0 – 9	.62
<i>Lie</i>	2.12	2.07	0-9	.70
SASC-R total score	43.67	10.33	19 – 82	.85
<i>FNE</i>	20.94	5.68	8 – 40	.81
<i>SAD-GEN</i>	7.61	2.85	4 – 17	.63
<i>SAD-NEW</i>	15.12	3.96	7 – 27	.66

2. Gender differences in self-reported depression, anxiety and social anxiety

Potential gender differences amongst the three self-report measures were assessed using a series of two-tailed t-tests (Table 2). Girls were found to report significantly higher levels of both general ($t(127) = 6.02, p < .05$) and social anxiety ($t(127) = 4.44, p < .05$) than boys. More specifically, girl's higher levels of general anxiety in comparison to their male counterparts appeared to be a consequence of their reporting more symptoms of worry ($t(127) = 6.75, p < .05$) and physiological anxiety ($t(127) = 4.42, p < .05$). Similarly girls relatively high levels of social anxiety appeared to be primarily a consequence of their greater fear of negative evaluation ($t(127) = 8.14, p < .01$).

In contrast, no significant gender differences were found for either the concentration sub-scale of the RCMAS ($t(127) = 2.59, NS$) nor social avoidance and distress in either new or general situations ($t(127) = 0.65$ and $0.72, NS$, for SAD-Gen and SAD-New respectively). No gender differences were found for self-reported levels of depression ($t(127) = 0.27, NS$)

TABLE 2
Gender differences on anxiety, social anxiety and depression measures

Measures	Male (n = 60)			Female (n = 69)			t	p
	M	SD	Range	M	SD	Range		
CDI total	11.88	7.8	0-31	11.25	6.01	0-25	0.27	NS
RCMAS	9.7	5.86	0-22	12.54	7.09	0-27	6.02	.015
<i>Conc.</i>	2.8	2.07	0-9	3.44	2.40	0-9	2.59	NS
<i>Worry</i>	3.13	2.81	0-9	4.53	3.22	0-10	6.75	.011
<i>Physio</i>	3.77	1.87	0-7	4.57	2.40	0-9	4.42	.038
SASC-R	41.8	11.36	19-82	45.57	8.86	23-66	4.44	.037
<i>FNE</i>	19.53	6.21	8-40	22.31	4.76	9-34	8.14	.005
<i>SAD-G</i>	7.42	2.83	4-17	7.82	2.88	4-17	0.65	NS
<i>SAD-N</i>	14.85	4.11	7-27	15.44	3.80	7-23	0.72	NS

3. Inter-relationships amongst social anxiety, general anxiety and depressive symptoms

On the basis of the tripartite theory (Clark & Watson, 1991), Inderbitzen & Hope (1995) hypothesised that children's symptoms of social anxiety would be less strongly related to depression, than those of general anxiety. The present study tested this hypothesis by examining both the pattern of correlations between symptom measures, and the overlap amongst those children whose scores indicated high levels of distress.

a) *Correlations between symptoms of depression, social and general anxiety:*

In order to investigate the relationship between children's symptoms of depression and anxiety, two-tailed pearson product-moment correlations were computed for the total scores of the three self-report measures (see Table 3). These correlations demonstrated a statistically significant relationship between all three measures ($p < .001$). Although initial examination of the pattern of intercorrelations amongst the measures suggested a potentially stronger relationship between depression and social than general anxiety, two-tailed tests (after Williams, 1959 reported in Howell, 1992) taking into account the relationship between the two anxiety measures indicated that this difference was not statistically significant ($r = .51$ vs $.37$, $t = 1.729$, NS).

TABLE 3
Correlations amongst anxiety, social anxiety and depression scores

n=129	SASC-R	RCMAS
CDI	.51	.37
RCMAS	.44	

Note: All correlations are significant at $p < .001$

In an attempt to further clarify this relationship, the correlations between participant's scores on the CDI and the sub-scales of the RCMAS and SASC-R were also examined (see Table 4). A series of tests (after Williams, 1959 reported in Howell, 1992) comparing the correlations amongst the anxiety sub-scales and the measure of children's depression revealed no significant differences, other than between the FNE sub-scale of the SASC-R and the worry sub-scale of the RCMAS ($r = .49$ vs $.30$, $t = 2.223$, $p < .05$). Thus it appears that children's fears about social evaluation may be more closely related to their symptoms of depression than their general worries.

TABLE 4
Correlations amongst anxiety and social anxiety sub-scales and depression total scores

N=129	RCMAS			SASC-R		
	Conc.	Worry	Physio	FNE	SAD-Gen	SAD-New
CDI	.37	.30	.33	.49	.39	.34

Note: all correlations are significant at $p < .001$

b) *Gender differences in correlations between general anxiety, social anxiety and depressive symptoms:*

In addition to exploring the pattern of associations amongst children's symptoms for the whole sample, similar analyses were performed for boys and girls separately in an attempt to determine whether gender significantly influenced the degree of correlation between self-reported depression, general and social anxiety. (see Table 5).

In general the pattern of correlations between depression, general and social anxiety did not appear to be significantly influenced by gender. Thus Fisher tests (after Fisher, 1921, reported in Howell, 1992) indicated that boys and girls did not differ

significantly in terms of the extent to which their symptoms of depression were correlated with either social or general anxiety ($r = .52$ vs. $.53$, $z = 0.08$, NS; $r = .37$ vs. $.43$, $z=0.40$, NS). In addition, there did not appear to be a significant gender difference in the strength of the relationship between social and general anxiety ($r = .52$ vs $.34$, $z = 1.23$, NS). Thus it appears that, in contrast to earlier research (La Greca et al, 1988) the boys taking part in the present study did not find it more difficult to differentiate between social anxiety and general anxiety states than their female counterparts.

TABLE 5
Correlations among anxiety, social anxiety and depression scores
for males and females

males (60)/ females (69)	SASC-R m/f	RCMAS m/f
CDI	.52/.53	.37/.43
RCMAS	.52/.34	

NB: All correlations were significant at $p < 0.005$.

c) *The identification of high-distress groups*

The interrelationships amongst the CDI, RCMAS and SASC-R were further examined by investigating the overlap in students identified as having high levels of distress on each of these measures. Specifically, children reporting scores 1 standard deviation or more above the total sample mean for that measure were identified, i.e. 18 or above on the RCMAS, 54 or above for the SASC-R and 19 or above for the CDI.

These criteria resulted in 49 children being identified as experiencing high levels of distress on one or more of the symptom measures (38% of the total sample). Of these 18 children (12 boys and 6 girls) reported high levels of depressive symptoms, 26

children (8 boys and 18 girls) high levels of general anxiety and 19 children (5 boys and 14 girls) high levels of social anxiety symptoms (Table 5b). Of these, 5 children who had been identified as having extreme scores on the CDI also had extreme scores on the RCMAS. Thus the overlap between the CDI and the RCMAS with regard to identifying children with extreme scores was 28%. Similarly, the overlap between the SASC-R and the CDI was 22%, with 4 of the children identified as having extreme scores on the SASC-R also reporting extreme scores on the CDI.

Table 5b
Distribution of children reporting high levels of distress

CDI			RCMAS		SASC-R	All three
Alone	+rcmas	+sasc-r	Alone	+sasc-r	alone	
10	4	3	15	6	10	1

n=49.

4. The underlying structure of children's distress - the relevance of the tripartite model

The tripartite theory (Clark & Watson, 1991) suggests that a three-factor model may provide the most useful conceptualisation of children's anxious and depressive symptomatology. The validity of this hypothesis was explored through factor analysis of children's sub-scale data.

a) Factor Analysis of the Children's Depression Inventory

As noted previously, factor analysis of children's depressive symptomatology (as measured by the CDI), has produced widely differing solutions, dependent upon both the population studied (e.g. clinical vs. non-clinical samples, adolescents vs. younger children, etc.) and the method of analysis employed (Charman, 1994). To date no study has examined the factor structure of children of a similar age and background to those taking part in the present study. As a result the CDI scores from our participants were analysed in an attempt to derive coherent factors for this particular population. Further consideration of the limitations of the present study's factor analyses are detailed within the methodological section of the discussion.

The CDI items were factor analysed using a principal components method with varimax rotation. Only factors with an eigenvalue greater than 1.0, and which contributed at least 5% to the total variance were included.

Although it is relatively common practise to extract as many factors as have eigenvalues greater than or equal to 1, a number of researchers have suggested that such methods may result in spurious factors. Instead Hammond (1995) has argued

that interpretability, rather than simply calculated eigenvalues, might be used as the criterion for selecting the number of factors to extract. Thus researchers should carry out analyses of each potential solution, and then choose the one which makes the greatest theoretical sense. For this reason, although solutions containing between 2 and 9 factors were statistically plausible for the present population, a three factor solution was extracted.

The 3 factor solution, which accounted for approximately 36% of the variance in children's CDI scores, is shown in Table 6. Items are sorted according to their loading on each factor, and factor loadings of .35 and greater are highlighted in the table. Each factor showed satisfactory internal consistency, as measured by Cronbach's alpha ($\alpha = .72, .71$ and $.60$ respectively).

The first factor to emerge, accounting for 21% of the variance in children's self-reported depression, comprised those items accessing children's extreme negative feelings about themselves, and social inadequacy. Factor two, accounting for 8% of variance, appeared to reflect children's general feelings of worry and sadness. Finally factor three, accounting for 7% of variance, appeared to primarily be composed of those items reflecting children's difficulties at school and oppositional behaviour. Only one item ("I do very badly in subjects I used to be good at", item 22) failed to load significantly on any of the factors.

Factor scores were saved as separate variables and used within those subsequent analyses exploring the relevance of the tripartite theory.

Table 6
Factor structure of the CDI

Item	Factor 1	Factor 2	Factor 3
Factor 1 - Extreme negative feelings about self and others ($\alpha = .72$)			
I feel alone all the time (19)	.64	.26	-.06
Nothing is fun at all (4)	.62	-.09	.12
I do not have any friends (21)	.61	.21	.23
I can never be as good as other kids (23)	.52	.09	.11
I hate myself (7)	.49	-.04	.04
I look ugly (13)	.47	.28	.04
Nothing will ever work out for me (2)	.44	.25	.17
I can't make up my mind about things (12)	.40	.04	.16
I do everything wrong (3)	.37	.02	.37
I don't want to be with people at all (11)	.36	.15	.08
Factor 2 – General distress($\alpha = .71$)			
I feel like crying every day (9)	.03	.70	.23
I am tired all the time (16)	.17	.68	.23
I am sad all the time (1)	.21	.64	-.03
I worry about aches and pains all the time (18)	.20	.62	-.07
I am sure terrible things will happen to me (6)	.36	.54	.12
I have trouble sleeping every night (15)	.03	.46	.05
Things both me all the time (10)	.31	.40	.29
I do very badly in subjects I used to be good at (22)	.17	.20	.20
Factor 3 - Oppositional behaviour/Problems at school ($\alpha = .60$)			
I never do what I'm told (25)	.12	.21	.68
I am bad all the time (5)	-.05	.24	.63
All bad things are my fault (8)	.09	.36	.63
Nobody loves me (24)	.26	.07	.59
I get into fights all the time (26)	.31	.20	.48
Most days I don't feel like eating (17)	.33	.32	-.45
I have to push myself to do my schoolwork (14)	.11	-.07	.38
I never have fun at school (20)	.33	-.17	.37

b) *Models of children's symptoms of depression, social and general anxiety.*

In order to further explore the underlying structure of children's symptoms of depression, general and social anxiety, and in particular the potential relevance of the tripartite model, a series of factor analyses were performed.

Nine variables were entered into the initial factor analysis: CDI extreme negative feelings, CDI general distress, CDI oppositional behaviour, RCMAS worry, RCMAS physiological, RCMAS concentration, SASC-R fear of negative evaluation, SASC-R social avoidance and distress in new situations and SASC-R general social avoidance and distress. The CDI, RCMAS and SASC-R total scores were not used because they are merely a composite of all the items, each of which is used within a sub-scale score. Additionally the RCMAS Lie Scale was not used as an observed variable because it addresses the test-taking attitude of the participants and as such, is not hypothesised to impact upon the relationship between anxiety and depression.

In addition the initial factor analysis used the full sample of 129 participants. Although gender differences in some variables were both expected and identified (e.g. RCMAS and SASC-R scores) previous research has not hypothesised gender differences in the *relations* between anxiety and depression. In fact subsequent analyses did not suggest that significant differences existed in the factors derived for girls and boys.

The nine items were initially factored using a principal components method with varimax rotation. Only factors with an eigenvalue greater than 1.0, and which contributed at least 5% to the total variance were included. This method revealed eigenvalues of 3.59, 1.63 and 1.02 for the first three consecutive factors extracted (see

Table 7) accounting for 69% of the variance in children's self-report scores. However the third factor to emerge comprised a single item (the oppositional behaviour sub-scale of the CDI), for which reason this solution was discarded. A subsequent two-factor forced choice factor analysis (see Table 8) suggested that the oppositional behaviour sub-scale of the CDI did not load significantly on either of the two factors extracted, for which reason it was dropped from the final factor analysis.

Exploratory factor analysis of the remaining eight variables using a principal components method with varimax rotation suggested a two factor solution accounting for 42% and 23% of the variance in children's self-report scores respectively. Factor 1 comprised the extreme negative feelings sub-scale of the CDI, together with the three sub-scales of the SASC-R, and as such appeared to be accessing children's extreme feelings of social distress. In contrast the second factor to emerge consisted of the general distress sub-scale of the CDI, together with all three sub-scales of the RCMAS. As such it appeared to comprise children's general feelings of worry and sadness.

The factor pattern is shown in Table 9. Items are sorted according to their loading on each factor, and factor loadings of .35 and greater are highlighted within the table.

Table 7
Initial factor analysis

Item	Factor 1	Factor 2	Factor 3
Factor 1 ($\alpha = .70$)			
Extreme negative feelings (CDI)	.82	.03	.05
SAD-Gen (SASC-R)	.80	.12	.02
SAD-New (SASC-R)	.80	.08	.13
FNE (SASC-R)	.69	.40	.01
Factor 2 ($\alpha = .79$)			
Physiological Anxiety (RCMAS)	.08	.87	.01
Worry (RCMAS)	.18	.86	.14
Concentration (RCMAS)	.43	.69	.09
General distress (CDI)	.01	.66	.10
Factor 3 (α not calculable)			
Oppositional behaviour (CDI)	.02	.03	.89

Table 8
Summary of forced-choice factor analysis

Item	Factor 1	Factor 2
Factor 1 - ($\alpha = .72$)		
Worry (RCMAS)	.88	.17
Physiological Anxiety (RCMAS)	.87	.06
Concentration (RCMAS)	.70	.41
General distress (CDI)	.65	-.01
Oppositional behaviour (CDI)	-.11	-.06
Factor 2 - ($\alpha = .70$)		
Extreme negative feelings (CDI)	.04	.81
SAD-New (SASC-R)	.11	.80
SAD-Gen (SASC-R)	.13	.80
FNE (SASC-R)	.40	.67

Table 9
Summary of final factor analysis

Item	Factor 1	Factor 2
Factor 1 – Extreme social distress		
($\alpha = .70$)		
Extreme negative feelings (CDI)	.81	.03
SAD-New (SASC-R)	.80	.09
SAD-Gen (SASC-R)	.80	.12
FNE (SASC-R)	.68	.39
Factor 2 – General Worry		
($\alpha = .79$)		
Worry (RCMAS)	.18	.87
Physiological Anxiety (RCMAS)	.07	.87
Concentration (RCMAS)	.43	.69
General Distress (CDI)	.01	.65

5. The relationship between children’s attributional style, depression, general and social anxiety.

The hypothesis that a more pessimistic attributional style may not be specifically associated with self-reported depression, but also related to children’s symptoms of general and social anxiety symptoms was examined through a series of two-tailed correlations. In addition, partial correlations controlling for children’s concurrent depressive symptoms were also utilised.

a) Reliability of the CASQ

Table 10 presents the means, standard deviations and internal consistencies of the Children’s Attributional Style Questionnaire. Internal consistencies were estimated using Cronbach’s (1951) alpha. As can be seen, in general the individual attributional dimensions possessed only low reliabilities. Higher reliabilities were obtained by combining the dimensions for each type of event to form negative and positive composites (Table 10).

TABLE 10
Means, standard deviations and reliabilities for the individual dimensions of the CASQ

Measures	Mean	SD	Reliability
For bad events:	8.6	2.8	.37
Internality	2.5	1.6	.42
Globality	3.0	1.4	.20
Stability	3.2	1.5	.23
For good events:	13	3.7	.64
Internality	4.3	1.5	.29
Globality	4.2	1.6	.33
Stability	4.4	1.9	.52

n = 129

A series of two-tailed t-tests comparing the CASQ negative and positive composite scores for girls and boys did not reveal any significant differences in their scores ($t(127) = 0.11$ and 0.08 , NS; for the negative and positive composites respectively).

b) *Attributional style and children's self-report symptoms*

In an attempt to explore whether a relatively pessimistic attributional style is specific to depression or associated with other forms of distress, two-tailed pearson product-moment correlations were initially calculated for children's total scores on the three symptom measures and the negative and positive composites of the CASQ (Table 11).

As might be expected the CDI showed robust correlations with both the negative and positive composites ($r = .31$, $p < .001$ and $-.26$, $p < .005$ for negative and positive events respectively). In addition however, both the RCMAS ($r = .38$, $p < .001$ and $-.24$, $p < .05$) and SASC-R ($r = .21$, $p < .05$ and $-.34$, $p < .001$) showed significant correlations to the negative and positive composites, suggesting that children reporting relatively high levels of general and social anxiety may also interpret events in a relatively pessimistic way. In general the magnitude of these correlations represent small to moderate effect sizes (Cohen, 1977).

TABLE 11
Correlations among anxiety, social anxiety, depression scores
and attributional style

Measure	Negative composite	Positive composite
CDI	.31***	-.26**
RCMAS	.38***	-.24*
SASC-R	.21*	-.34***

N.B. $n=129$, * $p < .05$, ** $p < .005$, *** $p < .001$

Because of the extensive correlations previously demonstrated between both social and general anxiety and depression, it was important to partial out the effects of latter in order to determine to what extent attributional style might be uniquely associated with anxiety symptoms (Table 12). Although controlling for children's depression reduced the number of significant correlations, the measure of general anxiety continued to show a significant relationship with children's pessimistic attributional style for negative events ($r = .30, p < .001$). In addition children's symptoms of social anxiety were significantly correlated with pessimistic attributional style for positive events ($r = -.25, p < .005$).

TABLE 12
Correlations amongst children's attributional style,
social and general anxiety, after controlling for depression

Measure	Negative composite	Positive composite
RCMAS	.30 $p < .001$	-.16 NS
SASC-R	.06 NS	-.25 $p < .005$

n = 129

c) *Correlations for specific dimensions*

The present study also questioned whether, although pessimistic attributional style did not appear to be uniquely linked to depressive symptoms at the level of the composite measures, it might show a specific pattern of associations at the level of individual attributional dimensions.

In general all three forms of childhood distress showed a similar pattern of correlations with individual attributional dimensions. Thus for negative events, the tendency to provide internal explanations was significantly related to children's symptoms of

depression, general and social anxiety ($r = .26, .31$ and $.30$ respectively). Of the remaining two dimensions, only global attributions for negative events were significantly related to children's symptoms of general anxiety ($r = .22, p < .05$). In contrast the tendency to provide more unstable and specific explanations for positive events, appears to be significantly correlated with children's symptoms of depression, social and general anxiety (r ranging from $-.18$ to $-.31$). External attributions for positive events were only related to children's symptoms of social anxiety ($r = -.20, p < .05$).

However these results must be regarded with a considerable degree of caution given the low internal consistencies demonstrated for the individual attributional dimensions.

Table 13
Correlations of children's symptoms to internality, stability and globality
(after controlling for depression)

n=129	CDI	RCMAS	SASC-R
Negative events			
Internal	.26**	.31***(.23*)	.30**(.19*)
Global	.16	.22* (.17*)	.03 (-.05)
Stable	.16	.17 (.12)	.04 (-.05)
Positive events			
Internal	-.12	-.09 (-.04)	-.20* (-.15)
Global	-.25**	-.18* (-.10)	-.31***(-.18*)
Stable	-.20*	-.24**(-.22*)	-.26** (-.29**)

N.B All significant correlations are presented in bold type

* $p < .05$, ** $p < .005$, *** $p < .001$

d) The relationship between self-reported distress and attributional style for academic vs. social events

On the basis of the cognitive-diathesis component of existing attributional models of depression (Abramson et al, 1978; Abramson et al, 1989) a number of researchers have hypothesised that individuals may only attribute negative events of personal importance to relatively pessimistic causes. The present study therefore postulated that a specific association would exist between those items of the CASQ describing negative social events, and children's symptoms of social anxiety (Table 14).

In fact prior to controlling for children's concurrent levels of depression, both the measure of general ($r=.34$ and $.29$, $p<.05$) and social anxiety ($r=.27$ and $.21$, $p<.05$) demonstrated significant correlations for social and academic events. However after statistically controlling for depression, although the relationship between general anxiety and both academic and social situations remained significant ($r = .21$ and $.24$, $p<.05$, respectively), those with the measure of social anxiety did not ($r = .10$ and $.12$, NS).

Table 14
Correlations between symptom measures and attributional style for social and academic events
(after controlling for concurrent depressive symptoms)

Measure	Academic situations	Social situations
CDI	.25**	.33***
RCMAS	.29** (.21*)	.34*** (.24*)
SASC-R	.21* (.10)	.27** (.12)

$n = 129$, All significant correlations are presented in bold type * $p<.05$, ** $p<.005$, *** $p<.001$

6. Extension of the Tripartite theory to attributional style:

The present study demonstrated a specific pattern of associations between pessimistic attributional style and children's symptoms of depression, social and general anxiety. It was not clear however on the basis of these whole measure correlations whether a more specific pattern of associations might exist at the level of sub-scales. Such information is of particular relevance to the conceptualisation of children's attributional style in terms of the constructs of the tripartite theory outlined within the discussion.

Two-tailed correlations were therefore used to examine the relationship between the sub-scales of the three self-report measures and the negative and positive composite of the CASQ (Table 15).

Of the three sub-scales of the CDI, only the extreme negative feelings scale demonstrated significant correlations with both the negative and positive composites of the CASQ ($r = .19$, $p < .05$ and $-.37$, $p < .001$ respectively). The general distress sub-scale of the CDI was significantly related to more pessimistic explanations for *negative* events ($r = .18$, $p < .05$) whilst children's oppositional behaviour scores did not appear to be associated with biases in their attributional style ($r = .15$ and $-.07$, NS; for negative and positive events respectively).

In contrast, all three sub-scales of the general anxiety measure were significantly related to children's attributional style for negative events ($r = .34$, $.32$ and $.34$, $p < .001$ for concentration, physiological anxiety and worry respectively). Both concentration

and physiological anxiety also demonstrated a significant relation to the positive composite ($r = -.30, p < .001$ and $-.22, p < .05$, respectively).

Finally all three sub-scales of the SASC-R showed robust correlations with the positive composite of the CASQ ($r = -.25, -.29$ and $-.31, p < .005$ for FNE, SAD-general and SAD-New respectively). Only children's scores on the SAD-general sub-scale were significantly related to pessimistic attributional style for negative events ($r = .22, p < .05$)

Table 15
Correlations of self-report measure sub-scales with attributional style for negative and positive events

n=129	Negative events	Positive events
CDI		
Extreme negative feelings	.19*	-.37***
General distress	.18*	.03
Oppositional behaviour	.15	-.07
RCMAS		
Concentration	.34***	-.30***
Worry	.34***	-.09
Physiological Anxiety	.32***	-.22*
SASC-R		
FNE	.16	-.25**
SAD-general	.22*	-.29**
SAD-new	.15	-.31***

Note: All significant correlations are presented in bold type,

* $p < .05$, ** $p < .005$, *** $p < .001$

XII

Overview of discussion

In the first section of the discussion gender differences in the presentation of children's symptoms of anxiety and depression are examined, and contrasted with those reported within the adult literature. In particular the present study's findings that girls report more symptoms of general and social anxiety, but not depression than their male counterparts are interpreted in terms of gender differences in young children's socialisation.

A number of investigators have suggested that as a result of their extensive overlap, anxiety and depression might most usefully be considered to form a single construct of "negative affectivity" (Watson & Clark, 1984). Although the robust correlations amongst measures found within the present study appear to support this hypothesis, it was clear that any explanation in terms of a single underlying construct could not easily account for the specific pattern of associations demonstrated. On the basis of the tripartite theory, previous research (Inderbitzen & Hope, 1995; La Greca, 1989) has suggested that social anxiety, as a result of its more specific symptom content, should be more readily distinguishable from depression than other more general forms of anxiety. In fact, the present study did not support this hypothesis, suggesting instead that children's symptoms of both general and social anxiety are closely related to those of depression. Evidence from both the child and adult literature is reviewed in an attempt to make sense of these findings, together with their implications for the conceptualisation of childhood anxiety and depression.

The relevance of the tripartite theory (Clark & Watson, 1991) to childhood distress appeared to gain a certain amount of support from exploratory factor analysis of children's self-reported symptoms. Thus the present study's analysis generated a solution whose two factors appeared highly consistent with previous descriptions within the adult literature of the dimensions of positive and negative affectivity (Clark & Watson, 1991). However, in contrast to predictions derived from the tripartite theory, a third factor reflecting children's physiological anxiety symptoms failed to emerge. Possible explanations for this failure are examined, and the plausibility of a two-factor model of young children's anxiety and depression considered.

Despite evidence from a number of diverse sources suggesting that pessimistic attributional style may be associated with symptoms of anxiety as well as depression, to date there has been little research examining this possibility (Rodriguez & Routh, 1989; Curry & Craighead, 1990). The present study suggests that a relatively pessimistic attributional style for events is not specific to depression, but also associated with children's symptoms of both social and general anxiety. An attempt is made to explain these findings in terms of existing attributional theory, and an alternative model, based upon an extension of constructs of the tripartite theory to personality variables, proposed.

Directions for further research are then considered and the methodological limitations of the current study outlined, together with suggestions for how future studies might overcome these difficulties. In particular the necessary qualities of a valid measure of children's attributional style are proposed. Finally the implications of the present study's findings for clinical practise are examined.

XIII

The experience of distress amongst children

The total population scores reported within the present study for the depression, social anxiety and general anxiety symptom measures appear broadly in line with those previously demonstrated for unselected school-age populations (Charman, 1994; La Greca & Stone, 1993; Reynolds & Richmond, 1978). As a consequence, it seems reasonable to assume that they provide a relatively good indication of the extent of distress experienced by children of this age group.

Over a third of participants within the present study were identified as experiencing high levels of distress on one or more of the symptom measures. Although the identification of clinical disorders on the basis of self-report measures (even using stringent cut-off scores) has proved to be relatively poor (Costello & Angold, 1988), it is probable that a small proportion of these children were experiencing a clinically diagnosable, but as yet undetected, anxiety or depressive disorder.

Clear gender differences were demonstrated within the present study for the symptoms of both general and social anxiety. Thus of those children identified as having high levels of anxious symptomatology, over two-thirds were girls. This gender bias in the presentation of anxiety appears to be a relatively consistent finding amongst children of this age with previous research suggesting that girls are almost twice as likely to report symptoms of anxiety (as measured by the RCMAS) as boys (Orvaschel and Weisman, 1986). Similarly research examining social anxiety symptoms in young

children has also suggested that girls tend to report higher levels than boys (La Greca, 1989; La Greca et al, 1988; Hymel & Franke, 1985).

In contrast, the present study found no differences in girls' and boys' overall reports of depressive symptomatology, although of those children categorised as "depressed" on the basis of cut-off scores, almost two-thirds were male. This finding is consistent with the majority of research examining psychopathology amongst preadolescent children, which has indicated either no gender difference in rates of depression, or that boys show higher levels of depressive symptoms than girls (Charman, 1994; Nolen-Hoeksema, Girgus & Seligman, 1992). As such, children (together with older adults) represent a notable exception to the general rule of bias towards females in the presentation of depression.

A number of researchers have hypothesised that the higher incidence of internalising disorders amongst females may be a consequence of variations in gender socialisation (Kavanagh & Hops, 1994). Given evidence that suggests girls are more likely to be positively reinforced for being affectionate and dependent than boys it is certainly possible that the former learn through modelling and verbal encouragement to express their feelings of anxiety more readily. In contrast, the socialisation of boys as dominant and independent may lead them to perceive such expressions of distress as "unmanly" (Kavanagh & Hops, 1994). In a similar vein Maccoby (1990) has suggested that social skills and the maintenance of interpersonal relationships tend to be of greater importance to girls, as a consequence of which they are likely to experience greater concern regarding their performance in such relationships (i.e. social anxiety) than boys.

However, such hypotheses cannot provide a good rationale for why there appear to be gender differences in young children's self-reported anxiety, but not depressive symptoms. One potential, although as yet unexplored explanation, may lie in the relationship between the two states, and in particular the progression from anxiety into depression (Alloy et al, 1990). Recent research has suggested that childhood internalising disorders, particularly anxiety, greatly increase the risk of adolescent internalising disorders for girls, but not boys (Costello, Costello, Edelbrock, et al, 1988; McGee, Feehan, Williams et al, 1992). Thus it may be that the greater continuity of distress for girls, eventually culminates in larger numbers of females experiencing clinical depression.

XIV

The relevance of the tripartite theory to childhood distress

In 1984, Watson and Clark hypothesised that the extensive relationship between anxiety and depression could be explained in terms of a shared underlying construct of general distress or “negative affectivity”. Subsequent reformulations of this model incorporated factors specific to depression (low positive affectivity; Watson & Tellegan 1985), and anxiety (autonomic hyperarousal; Clark & Watson, 1991) culminating in a tripartite conceptualisation of anxiety and depressive disorders. Although the tripartite theory has received relatively good support within the adult literature (Clark & Watson, 1991), to date the evidence for its suitability as a model of childhood distress remains somewhat limited. The present study therefore sought to explore this conceptualisation’s relevance to young children’s distress, by examining the pattern of relationships amongst their symptoms of depression, social and general anxiety.

i) Relationship between children’s reports of anxiety, social anxiety and depressive symptoms:

The present study suggests that a significant relationship exists between children’s symptoms of depression and general anxiety. As such it is generally consistent with the existing literature, although interestingly the size of the correlation was smaller than that previously reported for an ostensibly similar population ($r = .37$ vs $.61$, $z = 3.06$, $p < .01$; Ollendick & Yule, 1990). Significant correlations were also demonstrated between children’s symptoms of social anxiety and depression, both at the level of whole measure and sub-scale scores.

The moderate inter-correlations amongst children's self-report measures of depression, general and social anxiety strongly suggest that they may not be assessing distinct personality characteristics, but rather one, more general construct of "negative affectivity" (Wolfe et al, 1987; Watson & Clark, 1984). More specifically, given the strong relationship between children's symptoms of social anxiety and depression, it is possible that for young children negative affectivity for *social* situations may be more characteristic than the global disposition to experience aversive emotional states suggested by Watson and Clark (1984).

Obviously this is not the only possible explanation for the demonstrated relationship between children's self-report measures. Certainly it is likely that the extensive overlap in item content served to artificially enhance the correlations amongst measures. Thus for example, item 1 on the RCMAS, "I have trouble making up my mind", is similar to item 12 on the CDI, "It is hard to make up my mind about things". However, given that the association between anxiety and depression appears to remain even after such methodological difficulties are taken into account (Clark & Watson, 1991) it seems unlikely that item overlap can provide a complete explanation of their relationship.

The main weakness of the conceptualisation of childhood anxiety and depression as a single construct of negative affectivity appears to lie in its failure to acknowledge the quasi-independence of the states. In contrast, the tripartite theory suggests a considerably more sophisticated analysis of the pattern of associations between children's symptoms of anxiety and depression. On the basis of this model, Inderbitzen and Hope (1995) made a number of predictions about the inter-relationships amongst measures of childhood distress, which appeared to be supported by earlier work (La

Greca, 1989). In particular they suggested that, as a consequence of its specific symptom content social anxiety should be less closely associated with depression than other, more general forms of anxiety.

In fact, the present study failed to support this prediction, demonstrating a statistically equivalent relationship between children's symptoms of depression and those of social and general anxiety. In addition the correlations between the depression measure and sub-scales of the SASC-R were notably higher than that reported by La Greca (1989) for a similarly aged population ($r_s = .34$ vs $.08$, $.39$ vs $.05$, $.49$ vs $.17$ for the CDI and SAD-N, SAD-G and FNE respectively). Unfortunately detailed information was not available about the methodology used by La Greca (1989) and therefore it was neither possible to test the significance of this discrepancy nor speculate as to why two ostensibly similar studies might produce different results.

In contrast, the correlations between children's social anxiety scores and depression indicated by the present study appear largely consistent with those reported by Inderbitzen & Hope (1995) for an adolescent population. The two studies differ primarily in their reports of the relation between depression and general anxiety, which was considerably higher for the older population ($r = .39$ vs $.71$, $z = 4.21$, $p < .001$). The source of this discrepancy is not clear, although it may reflect a developmental difference in the experience of distress, with the symptoms of general anxiety increasingly accompanied by feelings of depression as children become older. Clearly further longitudinal research examining the relationship between children's anxiety and depressive symptoms would be useful in order to explore this possibility.

ii) *Implications for the tripartite theory:*

Given that the present study failed to replicate the specific pattern of associations suggested by Inderbitzen & Hope (1995) on the basis of the tripartite theory, does this necessarily imply the conceptualisation of distress suggested is not relevant for young children? In answering this question, one must first consider the validity of Inderbitzen and Hope's (1995) interpretation of the tripartite theory.

Clark and Watson (1991) suggested that anxiety states could be distinguished from depression on the basis of their unique association with symptoms of hyper-arousal. Thus any anxiety disorder (or symptom measure) associated with relatively high levels of autonomic symptoms should be more easily differentiated from depression than one composed almost entirely of general distress symptoms. In fact, neither the measure of social nor general anxiety used within the present study included a large number of items assessing children's autonomic symptoms, focusing instead on children's behaviour and cognitions within anxiety provoking situations. As a consequence their considerable overlap with a measure of children's depressive symptoms is entirely consistent with the predictions of the tripartite theory.

It seems then that the pattern of relations demonstrated between depressive symptoms and both general and social anxiety does not necessarily disprove the relevance of the tripartite theory to childhood distress. However, it remained to be demonstrated whether the specific pattern of associations might provide more active support for the theory's constructs. Exploratory factor analysis was therefore employed in an attempt to clarify whether the tripartite theory provides a useful conceptualisation of childhood anxiety and depression.

iii) Factor analysis of self-report measures:

Analysis of eight out of a possible nine symptom sub-scales suggested a two-factor solution, accounting for 65% of the variance in children's self-reports scores. The first factor to emerge comprised the social anxiety measure in its entirety, together with those items from the CDI describing children's symptoms of social distress and extreme negative feelings about the self. As such, this factor appeared largely consistent with the construct of low positive affectivity suggested by Clark and Watson (1991). Low PA has been variously defined, but is thought to incorporate loss of interest and social inter-personal engagement, hopelessness, loneliness and suicidal ideation. Although at first sight the demonstrated association between social *anxiety* and positive affectivity may appear run counter to the conceptualisation suggested by the tripartite theory, several researchers have suggested that positive affectivity be defined primarily in interpersonal terms (McCrae & Coster, 1987, reported in Clark & Watson, 1991). Thus positive affectivity (but not NA) has been found to be associated with a number of indices of social behaviour, including frequency of social contact, satisfaction with friends and relatives, making new acquaintances, involvement in social organisations and measures of sociability and extroversion (Watson, Clark & Carey, 1988). It is perhaps not surprising then that the present study suggests a specific link between social anxiety, which by definition involves distress within social settings, and low levels of positive affectivity.

To date no study has explicitly examined the relationship between social anxiety and the dimensions of positive and negative affectivity for either adults or children, and hence the exact nature of their association remains uncertain. However, there is at least initial evidence from the adult literature to suggest that clinical levels of social

distress may, like depression, be associated with low levels of positive affectivity. Watson, Clark & Carey (1988) asked individuals with a diagnosis of either anxiety or depression to complete measures of trait positive and negative affectivity. They found that although, as predicted, trait NA was significantly related to every diagnosis, only the diagnoses of major depression, dysthymic disorder and social phobia showed a significant correlation to trait PA.

The second factor to emerge from the present study's analysis, comprised the three sub-scales of the RCMAS together with those items from the CDI concerning children's general feelings of worry and sadness. As such, it appeared highly consistent with the construct of negative affectivity outlined by Clark and Watson (1991). Negative affectivity is thought to incorporate a wide variety of states including feelings of low self-esteem, sad affect, self-blame and anxiety. The plausibility of a shared loading for the RCMAS and CDI on the dimension of negative affectivity is strongly supported by the extensive literature concerning the strong relationship between the two measures (King, Ollendick & Gullone, 1991).

On the basis of these findings it appears that the conceptualisation of anxiety and depression suggested by Clark and Watson (1991) may well be relevant to child as well as adult forms of distress. However, the tripartite theory also predicts the presence of a third factor, uniquely defined by children's symptoms of hyperarousal. In fact, although the RCMAS includes a small number of items assessing children's physiological symptoms of anxiety, these did not emerge as a separate factor.

A number of explanations can be suggested for the failure of a hyperarousal factor to emerge from the present data of which the most parsimonious concerns the level at which the analysis was performed. The relatively small number of participants within the present study necessitated the use of sub-scale, rather than item level data. Yet the items concerning physiological hyperarousal are scattered throughout the sub-scales of the RCMAS and hence it would not have been possible to extract a factor composed primarily of these symptoms using the present statistical strategy.

There is however at least some evidence from a recent research (Joiner, Catanzaro & Laurent, 1996) to suggest that, even had such an item-level analysis been possible with the present population it would not have resulted in a specific factor for hyperarousal symptoms. Faced with an adolescent participant group similar in size to the present study Joiner, Catanzaro and Laurent (1996) decided to factor analyse only those items from the RCMAS and CDI which appeared of particular relevance to the constructs of tripartite theory. Consistent with their predictions a three-factor solution emerged, whose composition appeared to correspond closely to the constructs of negative affectivity, positive affectivity and physiological arousal suggested by Clark and Watson (1991). Interestingly however, although attempts to replicate Joiner et al's (1996) findings using the self-report data from the present study did produce a three-factor solution, children's symptoms of physiological anxiety did not emerge as a separate factor.

This suggests a second intriguing possibility. In contrast to both adults and adolescents it may be that physiological symptoms are relatively unimportant in the presentation of anxiety for young children. Certainly the physiological indicators of

anxiety in children have received relatively little attention (Beidel, 1988), though it is not clear whether this reflects their lack of salience for young children or a lack of appropriate measures. If however it were to emerge that young children rarely report symptoms of hyperarousal even when given the opportunity to, then a two, rather than three-factor model of anxiety and depression may well provide the more useful conceptualisation. However as children grow older, and their physiological symptoms of anxiety become more salient, the tripartite theory may become increasingly relevant. Interestingly to date, a three-factor model of depression and anxiety has only received empirical support from studies involving adolescent populations (Jolly & Dykman, 1994; Joiner et al, 1996). Thus although Lonigan et al (1994) reported factors from the RCMAS and CDI which were both common and unique to depression and anxiety for a child inpatient population, physiological items did not distinguish between the two disorders.

Finally it is not clear why children's reports of oppositional behaviour and difficulties at school appeared to be relatively independent of their feelings of distress. A number of studies have suggested a link between disruptive behaviour amongst children and the symptoms of both anxiety and depression (Shoemaker, Erickson & Finch, 1986). However it is possible that a sub-group of children exists for whom their oppositional behaviour is not associated with distress.

iv) Relevance of the tripartite theory to childhood distress:

Taken as a whole, the results of the present study appear to suggest at least initial support for the relevance of Clark and Watson's (1991) tripartite model to childhood anxiety and depression. Thus not only were robust associations demonstrated between

the three self-report measures as a whole, suggesting a shared underlying structure, but the specific pattern of inter-relations derived from factor analysis appear highly consistent with the definitions suggested by Watson & Tellegan (1985) for the dimensions of positive and negative affectivity. It is clear however that the present study would have benefited considerably from the inclusion of explicit measures of positive and negative affectivity (e.g. PANAS-child; Laurent, Potter & Catanzaro, 1994), without which their relation to the factors described above must remain largely conjecture. Similarly, the methodological limitations of the present study have meant that the status of the hyperarousal component of the tripartite theory remains uncertain. However there is at least initial evidence to suggest that a two, rather than three-factor model may provide a better understanding of young children's symptoms. Further research examining both the physiological aspects of childhood anxiety, and how these change with time will be needed before this matter can be resolved.

That the tripartite theory was at least partially supported for young children is an important finding for several reasons. Differential diagnosis amongst young children has proved to be particularly difficult, not only because they frequently appear less capable of reporting subjective distress (Kovacs, 1986), but also because many childhood disorders are phenomenologically similar to one another. A greater focus on those symptoms associated with low levels of positive affectivity, and hence specific to depression, might allow a greater degree of differentiation between the two states.

In addition the conceptualisation of childhood anxiety and depression in terms of the tripartite theory has considerable implications for empirical research. It has been relatively common practise within both child and adult depression research to assume

the specificity of a theoretical model to depression on the basis its relationship to measures of that construct. Yet the present study, together with the extensive literature concerning the co-morbidity of anxiety and depression, suggest that the two states share a common basis of general distress symptoms. Without controlling for this overlap, it is impossible to say with any degree of certainty whether a particular theoretical model is specific to depression (e.g. associated with low PA) or common to both depression and anxiety (e.g. associated with NA).

Amongst such models are the reformulated learned helplessness (Abramson et al, 1978) and hopelessness (Abramson et al, 1989) theories of depression. Although adult research has suggested that a pessimistic attributional style may not be specific to depression (Heimberg et al, 1989; Johnson et al, 1990), until the present study there had been no real attempt to explore this possibility with a child population. The following sections describe our findings, together with possible explanations from the existing adult attributional literature.

The specificity of attributional style

i) Pessimistic attributional style and anxiety

The present study demonstrated a robust relationship between children's self-reported depression and pessimistic attributional style for both positive and negative events ($r = .31$ and $-.26$, respectively). Thus depressive symptoms were associated with a tendency for children to provide relatively internal, global and stable explanations for negative events, whilst suggesting relatively external, unstable and specific explanations for positive events. As such, our findings were consistent with the large body of research outlining the relationship between self-reported depression and children's attributional style (Gladstone & Kaslow, 1995).

In marked contrast however to previous research examining the relationship between attributional style and other forms of childhood distress (e.g. Rodriguez & Routh, 1989; Curry & Craighead, 1990), the present study also indicated a significant relationship between children's attributional style and both social and general anxiety symptoms. Thus there appeared to be a strong link between both general and social anxiety and a tendency to attribute events to relatively pessimistic causes.

Although these findings are important in so much as they suggest that children experiencing various forms of distress tend to perceive events in similar ways, in and of themselves they present little threat to conceptualisation of attributional style as specific to depression (Abramson et al, 1978; Abramson et al., 1989). Taking into account the extensive overlap between children's symptoms of anxiety and depression

($r = .37$ and $.51$ for general and social anxiety respectively), together with the latter's demonstrated association with pessimistic attributional style, it was entirely possible that the relationship between anxiety and attributional style was simply a consequence of children's associated depressive symptoms.

In fact although controlling for children's depressive symptoms did reduce the number of statistically significant correlations, the measure of general anxiety continued to show a significant relationship with pessimistic attributional style for negative events ($r = .30$). It appears that the experience of general anxiety is associated with a tendency to attribute negative events to relatively internal, stable and global causes. In contrast, only the relationship between children's symptoms of social anxiety and attributional style for *positive* events remained significant after controlling for depression ($r = -.25$). Thus it seems that children experiencing social anxiety symptoms tend to explain positive, rather than negative events in terms of relatively pessimistic causes.

Consistent with the adult literature, but in direct contradiction to existing attributional models, it appears that pessimistic attributional style is not specifically associated with depressive symptomatology in children, but also associated with other related forms of distress. The following sections examine these findings in greater detail.

ii) *The relationship of individual dimensions to childhood distress*

The findings outlined above relate to the composite measures of the CASQ, which represent the sum of children's "pessimistic" and "optimistic" responses to negative and positive events respectively. The majority of child attributional research has exclusively considered the relationship between distress and these composites rather

than individual attributional dimensions, because of the latter's demonstrated low internal consistency. Yet although methodologically sound, this strategy has been criticised on theoretical grounds, not least because very little is currently known about the relative importance of the internality, globality and stability of children's causal explanations to the development and maintenance of distress. In particular the present study questioned whether the demonstrated relationship between the CASQ composites and all three symptom measures, might serve to mask a more complex pattern of associations at the level of individual attributional dimensions.

In fact, a very similar pattern of associations with individual attributional dimensions emerged for the symptoms of depression, general and social anxiety. Thus, for negative events, internality appeared the most important dimension, showing significant relations with all three forms of distress ($r = .26, .31$ and $.30$ for depression, general anxiety and social anxiety respectively). Of the remaining two dimensions, only globality reached significance in association with general anxiety ($r=.22$). Similarly all three forms of distress were associated with a tendency to provide more global and stable attributions for positive events (r ranging from $-.18$ to $-.31$), whilst internality was only significantly related to children's symptoms of social anxiety ($r=-.20$).

It appears that, at least for young children, the importance of various attributional dimensions may depend more upon the *valence* of the event than the form of distress experienced. In that respect the similar pattern of associations demonstrated for all three measures appears to provide further support for conceptualisation of children's

anxiety and depressive symptoms in terms of a single construct of general distress (Watson & Clark, 1984).

Certainly the nature of associations demonstrated between specific attributional dimensions and children's symptoms of distress appears to make intuitive sense. Thus for example, it is difficult to envisage an internal explanation for a negative event which would not be associated with some level of distress, although the latter might well vary from mild worry to feelings of hopelessness dependent both upon the importance of the event itself, and the actual content of the attribution. Certainly a large body of research exists outlining the association between children's reversal of the self-serving bias and several diverse forms of distress (Wigfield, 1988), suggesting that individual's judgements of locus may well be of central importance in determining the impact of negative events. In contrast, perceiving such events as result of long-lasting or stable causes, may not necessarily be associated with the experience of distress, should the individual not believe they are personally responsible for those events. Similarly attributing a positive event to others seems unlikely to result in distress for an individual, whereas believing that such events are both unlikely to occur again in the future or in other domains of one's life, might well do.

Unfortunately little empirical context exists in which to place these findings, and hence any attempt to hypothesise about their implications, however plausible, must remain largely conjecture. What is of interest however, is that both the reformulated attributional theory (Abramson et al, 1978) and hopelessness theory (Abramson et al, 1989) have suggested that adult's attributions of *globality* and *stability* for negative events are critical in determining the development of depression. As a consequence,

the trend within recent child research has been to examine the dimensions of globality and stability in connection with negative events, to the detriment both of positive events and participant's judgements of internality. Yet, the findings of the present study warn against the employment of such a strategy. Had we chosen to examine only children's global and stable explanations for negative events, then we would not only have failed to demonstrate a significant relationship between pessimistic attributional style and both general and social anxiety, but also with depression. Similarly, such a strategy would have failed to detect the robust association between individual's explanations for positive events and both depression and social anxiety.

Clearly greater empirical evidence about the relative importance of the attributional dimensions and positive and negative events will be needed before researchers can make informed decisions about their relation to childhood distress. Such research will in turn depend crucially upon the development of a more reliable measure of attributional style, the necessary properties of which are outlined within the methodological section of this discussion.

iii) Social anxiety and the interpretation of social events

On the basis of the diathesis-stress component of attributional models, several researchers have suggested that individuals may only interpret those negative events of personal importance (e.g. loss for depression, social situations for social phobia, etc.) in a relatively pessimistic way, and continue to demonstrate a relatively optimistic attributional style for events outside this domain (Mineka et al, 1995).

In fact the present study did not indicate a specific relationship between high levels of social anxiety and children's pessimistic explanations for negative social situations, a failure which may be attributed to a number of factors. It is certainly possible that the concept of a diathesis-stress component to attributional style is not appropriate, and that children experiencing high levels of distress provide more pessimistic attributions for a diverse range of situations. However, before we discard this construct altogether, it is important to acknowledge the methodological limitations imposed by the measure of attributional style used within the current study.

Unlike its adult counterpart, the Children's Attributional Style Questionnaire is not explicitly separated into achievement and affiliative events. Although Turner & Cole (1994) attempted to derive social and academic scales from the CASQ, close examination of their items suggests that many of the former are not clearly social in nature (e.g. "You break a glass"). As a consequence it is perhaps not surprising that these events failed to elicit more negative causal explanations from children experiencing high levels of social anxiety. Even those items within the social scale of the CASQ which do appear relevant to children experiencing high levels of social anxiety, are not always associated with explanations which tap into these children's concerns. (e.g. "You have a fight with a friend" - I/My friend was in a bad mood that day). The latter difficulty reflects a more basic problem with the ecological validity of the CASQ as a whole, which will be discussed in greater detail later.

Thus although the present study did not demonstrate evidence for the hypothesised specificity of attributional style to events of personal importance, it is entirely possible that this is a reflection of the inadequacy of the attributional measure rather than of the

theoretical concept itself. Clearly, further research with a more sensitive attributional measure will be needed, before the status of this component can be stated with any degree of certainty.

iv) Summary

A number of general conclusions can be drawn on the basis of the present study's findings. Firstly it is clear that pessimistic attributions for negative events are not uniquely associated with children's symptoms of depression, but are also related to other states, such as general anxiety. More specifically, the attribution of negative events to internal causes appears to be common to all three forms of distress examined within the present study. In contrast it appears that the tendency to explain positive events in terms of specific and unstable causes is particular to self-reported depression and social anxiety, and hence might well be of unique importance in further understanding these disorders. The following sections attempt to explain these findings in terms of existing attributional theory.

XVI

Attributional models of depression and anxiety

i) Helplessness-hopelessness theory of anxiety and depression

In common with the majority of existing models of depression, neither the reformulated learned helplessness model (Abramson et al, 1978) nor the hopelessness theory (Abramson et al, 1989) made any attempt to address the syndrome's extensive co-morbidity with anxiety states. As a consequence until relatively recently it had remained unclear how, if at all, anxiety might fit into such an attributional model.

The helplessness-hopelessness theory (Alloy, Kelly, Mineka & Clements, 1990) attempted to bridge this conceptual gap, outlining a specific relationship between individual's expectations about future events, and the experience of anxiety and (hopelessness) depression. These expectations were themselves thought to be critically influenced by the individual's attributions of causality for negative events. Thus should an individual believe that a negative event was uncontrollable, then they would be more likely to expect to be unable to control similar events in the future (helplessness expectancy). Similarly, should the negative event be attributed to relatively stable and global causes, then the individual would be more likely to expect that event to re-occur in the future (negative outcome expectancy).

Alloy et al (1990) suggested that the experience of anxiety was the product of individual's expectation of potential helplessness. Thus, should an individual anticipate that some negative, uncontrollable event might occur, their resulting sense of helplessness would provoke feelings of anxiety, characterised by increased arousal and

scanning of the environment for threat related cues. The transition from anxiety to depression was conceptualised as a shift in the individual's expectations about future events from helplessness to hopelessness. Thus, should an individual become convinced, for whatever reason, that the feared uncontrollable event was inevitable (e.g. negative outcome expectancy) then they would experience hopelessness, characterised by despair, loss of interest and suicidality. Alloy et al (1990) hypothesised that this transition could be rapid or relatively gradual, dependant both upon the nature of life events encountered and the causes to which they were attributed.

On the basis of this model and the differential co-morbidity of depression and various anxiety disorders Alloy et al (1990) made a number of specific predictions about the relationship between attributional style and anxiety. Most relevant of these, at least to the present study, was that although expectations of helplessness were thought to be common to the experience of both depression and anxiety, the expectation that negative events were certain to occur was conceptualised as relatively specific to depression.

ii) Relevance of the helplessness-hopelessness theory to the current study.

It is perhaps worth noting at this point that, although individual's expectations about events are central to both the reformulated learned helplessness model and the hopelessness model of depression, to date only a handful of studies have sought to examine these constructs directly (e.g. Hull and Mendolia, 1991; Ahrens and Haaga, 1993). Instead, the majority of both child and adult research (the current study included) has concerned either individual's attributions for events or the more distal

construct of attributional style. Such studies therefore rely critically upon the as yet relatively untested assumption that individual's expectations about events stem directly from particular patterns of causal attributions.

If one assumes, (as Alloy et al, 1990 themselves do) that attributions of uncontrollability for the event itself, and relatively global and stable attributions for the cause of that event are associated with expectations of helplessness and negative outcome respectively, then one can make a number of predictions about the relation of attributional style to childhood anxiety and depression. Thus given that negative outcome expectancy was thought to be specific to the experience of depression, the tendency to attribute negative events to global and stable causes should be associated with depressive but not anxious symptomatology.

In fact, the specificity of "hopeless" (e.g. global and stable) attributions for negative events to depression proposed by Alloy et al (1990) does not appear to be supported by the current study. Thus although, as predicted, depressive symptoms were associated with a tendency to attribute negative events to more pessimistic causes, suggesting a negative outcome expectancy, the same pattern was also seen for children's symptoms of general anxiety. These findings were based upon the negative composite of the CASQ, yet interestingly when the dimensions of globality and stability were considered separately, the present study failed to find a significant relationship with either the measure of general anxiety or depression. Thus it appears that, contrary to the helplessness-hopelessness theory, "hopeless" attributions for negative events are not only non-specific to depression, but may be relatively unimportant in the mediation of childhood distress.

Interestingly, there did appear to be a strong relationship between childhood distress and the dimensions of stability and globality for *positive* events. However, the helplessness-hopelessness theory does not explicitly address the role of individual's attributions for positive events, other than in mentioning the importance of the absence or loss of such events. As a consequence, it is difficult to conceptualise on the basis of Alloy et al's (1990) theory, how such attributions might be important in the development or maintenance of either anxiety or depression.

The general disregard of individual's explanations for positive events within the attributional literature is perhaps particularly surprising when one considers that a significant relationship with depressive symptoms has consistently been demonstrated for both adults and children (Sweeney et al, 1986; Gladstone & Kaslow, 1995). Individual's attributions for positive events have commonly been regarded as less "mindful" (Peterson, 1991) than those for negative events, and as a consequence, less likely to provide meaningful information about their underlying beliefs. Yet the results of the present study suggest that children's explanations for positive events may well be of unique importance in understanding their experiences of general anxiety and depression.

iii) Summary of the relevance of the helplessness-hopelessness theory of anxiety and depression:

In summary, the helplessness-hopelessness theory does not appear to provide a satisfactory explanation of the demonstrated relationship between childhood anxiety and pessimistic attributional style. Thus contrary to Alloy et al's (1990) predictions,

the tendency to explain negative events in relatively pessimistic terms does not appear to be specific to depression, but also associated with symptoms of general anxiety. In addition the failure of the helplessness-hopelessness theory to acknowledge the role of individual's attributions for positive events in the mediation of distress, means it can provide no explanation of the specific association demonstrated between pessimistic attributional style for positive events and children's symptoms of social anxiety and depression. The following sections therefore attempt to provide a coherent explanation of the present study's findings in terms of an extension of the tripartite theory of anxiety and depression.

It should be pointed out that the findings of the present study do not necessarily imply that the helplessness-hopelessness theory is obsolete as a conceptualisation of childhood anxiety and depression. Our failure to explicitly examine children's expectations about events, means that the present study does not constitute a particularly good test of the model. Thus it is entirely possible that although children's "hopeless" explanations for negative events are not specific to the experience of depression, their *expectations* about likely outcomes are. Clearly there needs to be greater understanding of the role of both adults and children's expectations about events in mediating the evolution of distress, and more specifically their relationship to attributions.

XVII

The relationship between children's attributional style and the tripartite theory - a new synthesis

i) The tripartite theory and attributional style:

As the tripartite theory of anxiety and depression has gained in popularity, so researchers have become increasingly interested in determining how personality variables previously thought to be specific to one or other of the disorders, might relate to the dimensions of negative and positive affectivity. Although the attributional models themselves make no reference to these constructs, a number of researchers have suggested that pessimistic attributional style may be related to negative affectivity, and hence not specific to depression (Clark et al, 1994; Mineka et al, 1995). To date however only two studies have explicitly tested this hypothesis.

In a recent study Luten and Mineka (1994) found that undergraduates' attributional style was highly correlated not only with self-reported symptoms of depression, but also a measure specifically assessing NA. In contrast the correlations between attributional style and positive affectivity were not significantly different from zero. Given that a number of states share a high loading on the dimension of NA these results suggest that pessimistic attributional style was unlikely to be specific to depression. However, Luten and Mineka (1994) only assessed participants attributions for negative events (using the EASQ) and as a consequence it remained possible that more pessimistic explanations for positive events might be uniquely associated with PA, and hence specific to depression.

In fact earlier research examining the relationship between attributional style and positive and negative affectivity had produced strong support for this hypothesis (Ahrens & Haaga, 1993). Ahrens and Haaga (1993) demonstrated a specific pattern of associations between the dimensions of positive and negative affectivity and undergraduates' attributional style. Thus, positive affectivity was found to be significantly related to attributional style for positive but not negative events, whilst negative affectivity was associated uniquely with individual's attributions for negative events.

That attributional style appears to be differentially related to the constructs of positive and negative affectivity has implications not only for the present study, but the attributional literature as a whole. On the basis of these studies one can make a number of predictions about the relationship between pessimistic attributional style and not only anxiety, but the numerous other forms of psychological distress which have been subsumed within the "meta-construct" of negative affectivity. Thus one might expect a diverse range of constructs, including both depression and anxiety, to be associated with a tendency to provide more pessimistic explanations for negative events. In contrast, given that low levels of positive affectivity are thought to be relatively unique to depression, one might predict a relatively specific association between the latter and pessimistic attributional style.

Unfortunately, without an explicit measure of children's PA and NA, no firm conclusions can be drawn from the present study about the relationship of children's attributional style to these dimensions. However, the underlying structure of children's symptoms, together with their specific pattern of explanations for events, strongly

suggest that the conceptualisation of attributional style outlined above is a useful one. Thus children's symptoms of general anxiety and depression, which both the factor analysis carried out within the present study and previous research suggest share a high loading on the dimension of NA, were primarily associated with pessimistic attributional style for negative events (r ranging from .18 to .34). In contrast those symptoms of social anxiety and depression which appeared consistent with low levels of positive affectivity, were robustly correlated with a more pessimistic attributional style for positive events (r ranging from -.25 to -.37).

In terms of existing adult research, there does appear to be at least some evidence to support the predictions of the attributional extension of the tripartite theory. Consistent with the present study Ahrens and Haaga (1993) found that, although pessimistic attributions for negative events shared variance with both depression and anxiety, specific unstable attributions for positive events were uniquely associated with depression. More generally, in a recent review of attributional literature, Mineka et al (1995) commented that it was much more common for attributional style for negative events to be similar in depression and anxiety, than that for positive events. Finally, consistent with the hypothesised association between pessimistic attributional style for negative events and negative affectivity, research has shown an association between the former and a diverse variety of outcomes from binge eating to compulsive gambling (Peterson, 1991).

ii) *The direction of causality, vulnerability factor or symptom?*

Unlike previous attributional models of distress, the extension of the tripartite theory outlined above makes no attempt to speculate about the direction of the relationship

between attributional style and positive and negative affectivity. Thus, on the basis of this theory, it would be equally plausible to suggest that the provision of pessimistic explanations for negative events is simply a symptom of high levels of general distress, as a vulnerability factor.

There are several reasons for this. Clearly as correlational studies, neither the present study, nor previous research examining the relationship between attributional style and the dimensions of positive and negative affectivity, can reliably provide any information about the direction of their relationship. More importantly perhaps, the outlined theory is in the very earliest stages of conception, and as a consequence the evidence for its validity as a whole is still largely circumstantial. It therefore seems somewhat precipitous to make any strong predictions about the development of psychological distress before the basic premises of the model have themselves been confirmed.

On a more theoretical level the vulnerability factor/symptoms of distress dichotomy may well prove to be a misleading one. In common with a number of other constructs, attempts to provide evidence for the status of attributional style as a diatheses for psychological distress, have generally proved unsuccessful (Williams, 1992). As a consequence, a number of researchers have suggested that that the tendency to attribute events to more pessimistic causes constitutes a symptom of distress, rather than a causal factor in its development. Although this may well be the case, it is also possible that our current methods of understanding psychological distress are far too simplistic, and fail to take into account the potential for reciprocal interactions between factors.

A considerable amount of effort has been spent within empirical research exploring potential vulnerability factors in the hope of developing a greater understanding of the emergence of psychological distress. Although justifiable, this strategy has clearly been to the detriment of our understanding of such variables roles as maintaining factors. Yet such understanding is likely to be critical in determining therapeutic interventions for established clinical disorders. As a consequence, for those variables such as attributional style which have consistently been linked with *current* symptomatology, a greater focus upon their role in maintaining, rather than causing psychological distress, might well prove invaluable.

iii) Summary

It is clear that no existing attributional model of distress can adequately explain either the current study's findings, or the growing body of adult literature suggesting a robust association between anxiety and pessimistic attributional style, independent of concurrent depressive symptoms. As a result we have chosen to explain such research in terms of an extension of Watson and Clarks (1990) tripartite theory. It is recognised however that the evidence for such an application, particularly with children, is somewhat weak, for which reason subsequent sections outline some of the research which would be necessary in order to consolidate these hypotheses.

XVIII

Important questions for further research

The study of attributional style represents a small, though growing area of interest within the field of childhood psychopathology. As a consequence, not only are the issues examined within the present study relatively new (at least to this population), but much of the research essential to placing them within a theoretical context has yet to be carried out. There will therefore need to be extensive replication of the present study's findings with both clinical and general child populations before these hypotheses can be accepted with any degree of certainty. In the event that our findings receive such support, the following sections outline possible areas for future research.

i) The relevance of the tripartite theory to childhood anxiety and depression:

The present study suggests that children's symptoms of depression, general and social anxiety can be modelled by two factors which conform to the definitions of negative and positive affectivity suggested by Clark and Watson (1991). However, research incorporating specific measures of these dimensions is needed to further delineate the relationship of symptoms and clinical diagnoses to positive and negative affectivity.

The present study suggests the possibility that, at least for young children, a two-factor model may be most relevant to the presentation of anxiety and depression. Although the possibility of using item level data in an exploratory analysis has been suggested, more sophisticated methodologies, such as confirmatory factor analysis (CFA) might also prove useful in establishing the validity of the tripartite theory for a child population. Such strategies could be used to compare not only the relevance of two

versus three factor models of childhood anxiety and depression, but also different forms of two-factor model. Thus for example, future research could examine whether a model of anxiety and depression as distinct constructs, or as differential loadings on the dimensions of negative and positive affectivity, provided a better fit to young children's self-report data.

ii) *The specificity of attributional style:*

The present study indicates that pessimistic attributional style is not specific to children's depressive symptoms, however this finding clearly needs replication and extension, not only with different measures of distress, but different age groups. In addition although little was found in the way of evidence for the specificity of pessimistic attributions to important domains further research, using a more reliable measure of attributional style, may well prove useful.

Longitudinal research, rather than correlational methodologies might allow researchers to develop a greater understanding of the direction of the relationship between childhood anxiety and depression, and in particular whether attributional style plays an important mediating role. Thus the attributional style of an "at-risk" population of children with high levels of anxious symptomatology might be measured at regular intervals, to see whether the transition from anxiety to depression is accompanied or preceded by a generalisation of pessimistic attributions from negative events alone, to both negative and positive life events.

iii) *Controllability as an attributional dimension*

In examining children's attributional style, the present study chose to limit its focus to those dimensions outlined by Abramson et al (1978) as being of particular importance in the generation of distress i.e. internality, stability and globality. Yet a number of researchers have suggested that individual's expectations of success, and hence their levels of distress, depend crucially upon the extent to which they see the cause of a negative outcome as potentially controllable or changeable (Anderson & Deuser, 1991; Anderson & Arnoult, 1985).

Although several recent attributional models of depression and anxiety (e.g. Abramson et al, 1989; Alloy et al, 1990) have incorporated individual's expectations of controllability, it has generally been as a feature of events, rather than the *causes* of events. A greater understanding of children's perceptions of controllability, particularly for the cause of negative events, may well prove an important focus of attention in future research.

iv) *The extension of the tripartite theory:*

The extension of the tripartite theory outlined within the present study relies critically upon a small body of research, much of which was carried out not only with different measures, but within an adult, rather than child population (Luten & Mineka, 1994; Ahrens & Haaga, 1993). For this reason research examining the relationship between positive and negative affectivity and children's attributional style must be a necessary first step in consolidating this model.

In addition, the present study suggests a number of specific hypotheses about the relationship between attributional style and those diverse forms of distress which share a high loading of negative affectivity. Thus on the basis of the extension of the tripartite theory one would expect any disorder associated with a high level of negative affectivity to also show evidence of more pessimistic attributional style for negative events. In contrast, pessimistic explanations for positive events should be relatively specific to those states such as depression and social anxiety which are associated with low levels of positive affectivity.

XIX

Methodological considerations

The following sections outline some of the methodological weaknesses within the present study. As will be seen, a number of these, and in particular the use of the CASQ as a measure of attributional style, reflect difficulties within the attributional literature as a whole, and hence will be discussed in terms of their implications for all future research.

i) Sample bias and generalisability of findings

As participants in the present study were all volunteers, and therefore at least to some extent self-selected, the possibility of unknown sample biases and consequent limitations to the generalisability of the findings must be acknowledged.

Partly as a consequence of practical considerations, and in particular the need to generate a relatively large number of participants, the present study chose to examine the symptoms of anxiety and depression within a non-clinical population. Although such a decision is justifiable given both the relative infrequency of diagnosable anxiety and depression amongst young children, and the highly exploratory nature of the present study, it also serves to limit the applicability of the present study's findings to a non-clinical population.

To date it remains unclear to what extent theories suggested on the basis of non-clinical levels of distress can be generalised to clinical populations. Whereas some authors have reviewed evidence suggesting that clinical theories of psychological

distress can be appropriately tested using analogue studies, others have argued that clinical disorders are both conceptually and empirically different from the negative affect reported within the general population. Whilst this issue remains actively debated, it is clear that extreme caution must be exercised when drawing any conclusions about clinical disorders on the basis of non-clinical populations.

ii) *Level of significance and sample size*

As can be seen within the result's section, a significance level of .05 has been used throughout the analysis as indicative of a statistically significant effect. This level was chosen primarily because of the exploratory nature of the study, however, it is recognised that the relatively large number of analyses performed may have produced a number of type one errors.

Hammond (1995) has suggested that, wherever possible, a sample of size of 200 or greater should be used in order to minimise sampling error. Although smaller samples can, and often are, used these are likely to produce less reliable solutions. For this reason, although all of the factor analyses carried out within the present study conformed to Hammond's (1995) suggested minimum limit of four times as many subjects as variables, the reliability of the factor solutions produced may be somewhat questionable. Clearly there is a need to replicate the present study's findings with a larger participant group, before they can be accepted with any degree of confidence.

iii) *The measurement of attributional style*

The use of the CASQ within the present study was based primarily upon its status as the sole standardised measure of children's attributional style. However, it was

recognised that despite its relatively common use, the CASQ has a number of serious shortcomings which serve to limit any conclusions drawn on the basis of its findings. The following sections outline some of these difficulties, together with their implications for the necessary qualities of any new measure of children's attributional style.

Ecological validity of situations: The CASQ presents participants with a series of situations whose ecological validity for a child population are somewhat questionable given that they were chosen exclusively by adult researchers. The relevance of events to a particular age group or culture is likely to be of critical importance in determining both children's motivation and ability to provide causal attributions. Thus faced with a situation which bears little connection to those they encounter in their everyday lives, children may well provide less "mindful" answers.

In an attempt to overcome these difficulties, Goldfried and D'Zurilla (1969) have proposed a systematic method for generating situational taxonomies relevant to particular populations. This strategy consists of asking "experts" (most usefully the children themselves) to generate a large number of critical situations, from which a sub-set can be used to access the particular concept being studied. It appears reasonable to assume that a measure of attributional style including situations generated by such a method would be far more likely to have real meaning for children.

Ecological validity of causes: The CASQ requires children to choose between two possible explanations for each situation which hold constant two attributional dimensions whilst (in theory) varying a third. Although this strategy allowed

researchers to measure the specific impact of each dimension, the limitations imposed by the necessary form of the response mean that a number of the explanations provided do not seem particularly consistent either with those children's themselves might suggest, or indeed the event itself.

It is not clear how much the forced choice format of the CASQ has influenced the measures of children's attributional style derived, either in this, or previous studies. However it is possible that the lack of face validity of some of the explanations provided by the CASQ for events may have encouraged children to choose between them at random, and hence generated a number of spurious associations. In contrast, it appears reasonable to assume that asking children to generate explanations, rather than simply requiring them to choose amongst a limited set, will result in attributions which are more representative of those children would make in everyday situations, and hence of their attributional style.

The use of attributional dimensions: Within the childhood literature the dimensional placement of attributions has typically been determined by asking children to choose from a set of causes for which dimensional placements have already been established on the basis of adult's ratings (e.g. the CASQ). However in doing so researcher's commit what Russell (1982) called the "fundamental attribution error", that is, they assume that the meanings of causes are identical for both children and adults alike.

In fact the way in which children view causes appears to change substantially as a function of age (Earn & Sobol, 1991). Thus it cannot automatically be assumed that a cause which is perceived by adults as internal, stable and global will also be so for

children. However, it is still rare to find a study within the developmental literature in which children have supplied their own meanings for causes. Typically such strategies have been considered too complicated for children to understand, however recent research has suggested that even relatively young children can utilise attributional dimensions (Earn & Sobol, 1991), provided they are given sufficient explanation and help whilst completing the measure.

Summary: The CASQ has a number of methodological difficulties stemming primarily from its design as an easily administered measure of attributional style which could be used with children of all ages and from a variety of backgrounds. Clearly there is a need for researchers to take a more individual approach to children's attributions, tailoring measures to the population studied, rather than relying upon pre-established questionnaires. Any subsequent measure of children's attributional style, should therefore attempt to meet the following criteria (Earn & Sobol, 1991):

1. Provide situations which are ecologically valid for the population being studied
2. Allow participants to provide their own explanations for events
3. Allow participants to place these causes on attributional dimensions

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Clinical implications

The conclusions which can be drawn about therapy and prevention of childhood disorders on the basis of the present study must, by necessity remain extremely tentative. Yet, to the extent that symptoms within a general population may provide an analogue of clinical distress, and attributions about hypothetical situations an analogue for children's explanations of real-life events, the present study's findings suggest that childhood depression, social and general anxiety may well be similarly associated with pessimistic attributional style, and hence benefit from the same therapeutic strategies.

Should future research establish that children's attributional style acts as a cognitive diathesis for distress, this would have considerable implications for service development. Thus children identified as "at risk" from future psychopathology on the basis of their attributional style could be targeted for early intervention. Such interventions might not only attempt to modify children's attributional bias through the use of cognitive-behavioural strategies, but also lessen the stressfulness of events they experience, either at home or at school (Alloy et al, 1989)

In fact whether attributional style proves to be important as a diathesis for clinical disorders may not necessarily have any implications for the effectiveness of strategies derived from the model. Thus several cognitive vulnerability models, but particularly that of Beck (1967, 1976) have been the source of highly effective therapeutic strategies, despite receiving relatively little empirical support for their underlying

constructs. Somewhat surprisingly however given the extent of research concerning the association between pessimistic attributional style and both clinical and sub-clinical levels of depression, relatively few attempts have been made to examine their clinical implications (Forsterling, 1990).

Thus although attributional retraining programmes have been used within laboratory based studies to alleviate children's learned helplessness, there have been few consistent efforts to generalise their findings to a clinical setting. More importantly, those few studies incorporating attributional retraining have typically concerned adults (DeRubeis & Hollon, 1995), and attempts to transfer these strategies to a child population have generally proved unsuccessful (Kendall, 1991).

Although attributional theory itself does not appear to have led to the generation of therapeutic strategies, it is possible that its similarity to other cognitive theories may provide a useful indication of future directions. Thus Seligman (1981) points out the parallels between the tendency to make internal, stable and global attributions for failure postulated by the reformulated learned helplessness theory and Beck's (1967, 1976) cognitive triad. Thus the bias of depressed individuals towards internal attributions for failure is characteristic of their negative view of themselves, the stability of their attributions leads them to perceive the future as hopelessly negative, whilst the globality of their attributions for negative events leads them to perceive a wide range of situations pessimistically.

Many of the therapeutic strategies suggested by Beck and his colleagues (Beck, Rush, Shaw & Emery, 1979) which were subsequently adapted for use with children might

therefore be relevant to children's pessimistic attributional style. In particular, techniques aimed at challenging individual's perceptions of events through the introduction of new or previously unacknowledged information may also impact upon their attributions. Thus for example a therapist might encourage a child to seek out information which challenges their internal, stable attributions for failure through the use of behavioural tests. Given the present study's demonstration of the strong association between children's explanation for positive events and distress, the former may well provide an important focus for intervention. Thus therapeutic strategies aimed at increasing both the frequency and saliency of such events for children, together with encouraging children to view them in a relatively optimistic light may prove particularly effective. Certainly Needles and Abramson (1990) have suggested that those distressed adults who tend to attribute positive events to stable and global causes, appeared more likely to recover on encountering with such events, than those who perceive them in more pessimistic terms.

Children's attributions may also critically determine the form an intervention must take in order to have meaning for them. Sobol and Earn (1985) have suggested that the way in which children perceive or interpret events is likely to effect the efficacy of any behavioural intervention. Thus those children who make more "internal" attributions for success might well respond best to a self-instructional treatment program whereas those who view failure in terms of external and uncontrollable factors might benefit from a program of structured external reinforcement. Given that the present study indicates children experiencing high levels of anxiety and depressive symptoms consistently view failure as being a result of more internal factors, they might well

respond best to some form of cognitive intervention, in which they are encouraged to provide more realistic explanations for important life events.

It is of course possible that children's attributional styles are relatively unimportant within either the development or mediation of children's distress. As Peterson (1991) points out, causal explanations certainly do not exhaust the thoughts that determine any individual's behaviour. However, given the robust associations which have been demonstrated between children's attributional style and their symptoms of depression and now, anxiety, what such research does provide is a useful jumping off point for future studies. As our body of knowledge about children's expands, so increasingly sophisticated models of disorder will emerge, and with them, a clearer understanding of what form therapeutic strategies need to take in order to be most effective.

XXI

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