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## **ABSTRACT**

### **Introduction**

Behavioural and externalising disorders are estimated to affect around seven per cent of those aged 9 to 15, and may account for one third to a half of all clinical referrals. Without intervention, the projected outcomes for these children are likely to be poor. This study aimed to explore whether there is a relationship between child and parent emotion regulation strategies. The study also investigated the relationship between children's emotion regulation and conduct difficulties.

### **Method**

A cross sectional design was used to determine the relationship between emotion regulation strategies used by children and their parents, in a non-clinical population. Children were recruited through primary schools and were between the ages of 9 to 11. Children completed two questionnaires: one measuring emotion regulation strategies (external-functional, external-dysfunctional, internal-functional, internal-dysfunctional), and a second measuring their general well-being. Parents also completed two questionnaires: one measuring emotion regulation strategies and a second measuring their child's behaviour and emotional well-being.

### **Results**

The analysis indicated that there were some correlations between parent-child emotion regulation strategies; children and mothers external-dysfunctional strategies were correlated, as were children and mothers internal-functional strategies. The analysis also indicated that there was a correlation between children's external-dysfunctional strategies and conduct difficulties.

## **Discussion**

The results are discussed in relation to the relevant research and theory. The clinical implications are also considered.

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## **CHAPTER 1 - INTRODUCTION**

Over the past decade research has increasingly focused on the development of conduct problems in early childhood (Burke, Loeber & Birmaher, 2003). These conduct problems are typically reflected in oppositional, defiant and antisocial behaviours and can have detrimental effects on both the child's immediate family system and the wider community.

Behavioural and externalising disorders are estimated to affect around seven per cent of those aged 9-15 (Costello *et al.*, 1996; Ford *et al.*, 2003) and may account for one third to a half of all clinical referrals (Burke *et al.*, 2002; Kazdin, 1995; Loeber *et al.*, 2000).

Research exploring the long term implications of such behaviours suggests that there is a clear relationship between early conduct difficulties and a wide range of adverse outcomes that include: substance abuse (Bardone *et al.*, 1996); crime (Caspi, 2000; Fergusson *et al.*, 1998); school difficulties (Brook & Newcomb, 1995); and unemployment (Caspi *et al.*, 1998).

Given these adverse outcomes, the efficacy of interventions that aim to address conduct difficulties is clearly paramount. This study will explore whether there is a relationship between child and parent emotion regulation strategies. The study will also investigate the relationship between children's emotion regulation and conduct difficulties.

The following section will provide an overview of diagnostic criteria, epidemiology, risk factors and treatment for conduct problems. It will also explore the concept of emotion regulation and the evidence linking difficulties with emotion regulation and conduct problems. Finally, the following section will explore the development of emotion regulatory processes and the theoretical concepts linking child and parent emotion regulatory processes.

## **1.1. Conduct Problems**

### *1.1.1 Diagnostic criteria*

The term ‘conduct problems’ is often used as an “umbrella” term to describe aggressive and disruptive behaviour and it also makes reference to two diagnostic classifications: oppositional defiant disorder (ODD) and conduct disorder (CD). The International Classification of Diseases (ICD-10) (World Health Organisation, 1992) states that the essential features of ODD is a pattern of continuously negativistic, hostile, defiant and provocative behaviour which does not fit within the normal range of behaviour for a child of any given age (see appendix 1). CD is characterised by a repetitive and persistent pattern of aggressive, dissocial or defiant conduct, which at times can lead to major violations of age appropriate social expectations (see appendix 2).

The ICD-10 and the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) differ slightly in their classification

systems. The DSM-IV specifies that a number of behaviours should be present, while the ICD-10 provides a more general characterisation of CD (Angold & Costello, 2001).

### *1.1.2 Epidemiology*

Reports of general prevalence rates for conduct disorders and oppositional defiant disorders vary from 4 per cent to 14 per cent depending on a number of factors: the population studied; the measurement instruments; and whether impairment was included as part of the diagnostic criteria (Lahey *et al.*, 1999). One study estimates that the prevalence rate for conduct disorder in the UK is 5.3 per cent of 5-15 year olds (Meltzer *et al.*, 2000).

Gender differences are consistently reported. Conduct Disorder is more common in boys than girls (Angold & Costello, 2001). However rates of non aggressive Conduct Disorder are found to be similar among boys and girls (Zoccolillo, 1993), and gender differences may be related to the expression of aggression rather than Conduct Disorder per se (Angold & Costello, 2001).

Differences in the diagnostic criteria between the DSM-IV and ICD-10 make it extremely difficult to quantify age differences in CD and ODD. The DSM-IV clearly separates antisocial behaviour committed by older children out into DSM CD, while the antisocial behaviour that is characteristic of younger children is labelled under DSM ODD (Farrington *et al.*, 1990; Loeber *et al.*, 1991). Therefore under the DSM-IV it is far more likely that children in their adolescence will be diagnosed with CD,

while younger children may be classified as having ODD. In contrast the ICD-10 does not separate antisocial behaviour into the same age brackets, and the age distributions for CD and ODD are likely to be quite different.

### *1.1.3 Risk Factors*

Research into the contextual psychosocial risk factors associated with conduct problems has focused on the family, peer relationships, and the community (Earls, 1994; Loeber & Strouthamer-Loeber, 1986). This study is particularly interested in the risk factors associated with the family, specifically the role of parents.

A wide range of family factors have been identified, including harsh parenting, marital conflict, parental psychopathology, family poverty and negative parent-child relationships (this list is not exhaustive) (McCord, 1979; Rutter *et al.*, 1970). Repeated studies have demonstrated a strong correlation between these factors and conduct problems (Coie & Dodge, 1998; Loeber & Stouthamer-Loeber, 1986; Rutter *et al.*, 1998).

Investigation into parental risk factors has focused on the parent-child relationship. Three main constructs have emerged as significant risk factors for the development of conduct problems in children:

- hostile and critical parent-child relationships
- inconsistent parental management, characterised by poor limit setting, monitoring and supervision

- harsh, coercive parenting, characterised by use of physical punishment and strict boundaries

Research suggests that toddlers who experience positive parental interactions through sufficient warmth, limit setting and the use of reasoning and problem solving are shown to demonstrate greater compliance and internalised control (Bornstein, 1995; Maccoby & Martin, 1983). In contrast parenting which is inconsistent, harsh and hostile has been associated with increased rates of non-compliance in preschool children (Maughan, 2001).

There is also evidence that children's own behaviour can influence the regulation of their interactions with parents and significant others (Gianino & Tronick, 1988). Lytton (1990) suggests that such 'child effects' create bidirectional processes whereby hostility elicited from the child often fuels and facilitates the development of negative coercive relationships with parents and peers. For example, biological factors in the child such as a difficult temperament are believed to interact with care-giving environments, and produce less adaptive outcomes regarding pro social behaviour (Maughan, 2001).

Clearly both biological and environmental factors can be identified, and the interplay between the two is especially important. Evidence suggests that children most at risk of developing conduct problems may be those with anti-social parents, where there is a strong correlation between parental and child antisocial behaviour (Cohen *et al.*, 1990). This finding may reflect the parenting style of these parents and is suggestive

that harsh parenting and marital conflict is especially high in these families (Bank *et al.*, 1993).

Marital discord and family breakdown have long been highlighted as significant risk factors for conduct problems (Rutter *et al.*, 1970) and children from divorced families are twice as likely to present with externalising behaviour problems (Maughan, 2001). Research suggests that it is not the loss of a parental figure, but rather the conflict and discord often present before marital separation and during the separation process that presents the risk (Cherlin *et al.*, 1991).

Community contexts have also received considerable investigation. Research has found that rates of conduct problems are almost doubled in inner city areas (Rutter *et al.*, 1975), and crime rates and social cohesion have been identified as predictive factors of disruptive behaviours in boys (Majumder *et al.*, 1998). The specific factors mediating community risk are believed to be associated with poor social integration, poverty, and residential instability (for review see Sampson & Lauristen, 1994).

Peer relationships are thought to be another risk factor in the development and maintenance of conduct problems. Peer behaviour is believed to influence conduct difficulties in a number of ways. Peers may reinforce conduct difficulties through failing to challenge these behaviours (Coie & Miller-Johnson, 2001), or by rejecting individuals with conduct problems (Coie & Dodge, 1998). In addition, individuals may feel pressured by peers to align with a particular social role, and an aspect of

this may be engaging in antisocial behaviour (Coie & Miller-Johnson, 2001).

#### 1.1.4 Problems with classification

There are differing ideas about the relationship between the CD and ODD with some researchers suggesting a progressive and hierarchical relationship from ODD through to CD (Lahey *et al.*, 1997), while others view the two disorders as distinct (Cohen & Flory, 1998; Fergusson *et al.*, 1994; Loeber *et al.*, 1991).

Classification of CD and ODD into distinct categories brings a number of disadvantages. Hill (2002) argues that unless there is good evidence that conduct problems function in a categorical manner, then the cut-off points used are relatively meaningless. Further, it is argued that a categorical approach enforces rigidity, with little scope to assess individual differences such as severity of difficulties (Hinshaw *et al.*, 1993).

There is evidence to suggest that dimensional measures of ODD and CD provide better predictive validity than categorical measures. Fergusson and Horwood (1995) assessed a birth cohort of 935 New Zealand children at age 15 years on measures based on DSM-IV criteria for oppositional defiant disorder, conduct disorder, and attention deficit hyperactivity disorder. The authors measured the symptoms in two ways: (1) as cases or non-cases using the DSM-IV diagnostic criteria and (2) as dimensional variables, reporting the severity of disturbance as ranging from none to severe. The authors found evidence of continuous and generally linear dose-response functions between symptom severity and risk of juvenile offending and

school drop-out. Further, they reported that dimensionally scored variables were considerably better predictors of outcomes than measures based on a diagnostic classification.

Given this evidence, the variability of conduct problems may be considered within a dimensional model (Fergusson & Horwood, 1995; Fergusson et al., 2005). Evidence suggests that variability in conduct problems occurs along a number of axes. Conduct problems can vary in severity, chronicity, pervasiveness (Kazdin, 1995; Loeber *et al.*, 2002), age of onset and presence or absence of other psychopathology (Angold & Costello, 2001; Burke *et al.*, 2002; Hill, 2002).

Further, research suggests that contextual factors such as peer influences, family structure, and parental mental health difficulties all influence the development and maintenance of conduct difficulties (for review see Hill, 2002).

#### *1.1.5 Outcomes*

Conduct problems are known to cause severe functional impairment in childhood and adolescence (Fergusson *et al.*, 2005; Lambert *et al.*, 2003); and have consistently been linked with a number of poor outcomes in adulthood, such as criminality, mental health difficulties and relationship difficulties (Burke *et al.*, 2002; Colman *et al.*, 2009; Satterfield *et al.*, 2007).

These negative outcomes are not only detrimental to the individual, but they also

create a significant burden to society. Scott and colleagues (2001) conducted a longitudinal study of 142 ten year olds and found that by the age of 28 years those with a diagnosis of conduct disorder had cost the government on average 10 times more than those without conduct disorder. Costs across the sample ranged from between £0 to £379,292, with crime being reported to incur the greatest cost, followed by extra educational provisions, foster and residential care, and financial benefits.

Conduct problems in adolescence are associated with poor academic attainment including leaving school earlier than age equivalent peers and achieving fewer academic qualifications (Fergusson *et al.*, 1998; Fergusson *et al.*, 2005). For example, Colman and colleagues (2009) found that adolescents with either mild or severe externalising behaviour were more likely to leave school with no qualifications compared to other adolescents.

#### ***1.1.6 Treatment***

Research indicates that early intervention yields the best treatment outcomes when working with children with CD. Without intervention, childhood-onset CD is associated with extremely poor outcomes (Searight *et al.*, 2001). As children go into adolescence, conduct disorder becomes increasingly harder to treat and costs spiral as interventions require a multi-faceted approach (Olchowski *et al.*, 2006; Foster, 2006).

## Parent Management Training (PMT)

Parent management training (PMT) strategies have been demonstrated to be an effective treatment for conduct disorder (e.g. Brestan & Eyberg, 1998; Kazdin, 1997; Webster-Stratton, 1997). Parent training is based on the assumption that conduct problems are maintained in the home by maladaptive parent-child interactions (Kazdin, 2001). A number of aspects of the parent-child interaction have been identified as exacerbating aggressive and anti-social behaviour. These include patterns that directly reinforce deviant behaviour, harsh punishment, and failing to reinforce appropriate behaviour (Patterson, 1982; Patterson *et al*, 1992). Therefore PMT seeks to improve the parent-child relationship through teaching parenting skills that promote pro-social behaviour and decrease deviant behaviour. Parents are helped to identify, define, and observe problem behaviours in new ways. The treatment sessions provide concrete examples of how parents can implement new techniques to help manage problematic behaviour (using role-play).

Some research suggests that therapeutic change is not necessarily dependent on two parents attending the training (Horton, 1984). However this research is somewhat limited and does not specify whether positive change is achieved over a long term basis. Given that mothers rather than fathers attend the training, there is a risk that management strategies will not address the dysfunctional relationships between fathers and children (most frequently boys). Initially positive changes may be evident; however it is suggested that the sustainability of these changes could be dependent on the support given by spouses and the wider family support systems.

Finally, Green and Doyle (1999) highlight that although there are significant improvements from PMT; children still usually meet diagnostic criteria for CD and ODD. The authors suggest that this may be linked to failure to consider the transactional nature of conduct problems between the parent and child.

### Child Interventions

Individual child interventions address multiple areas: cognitive problem-solving, anger control, assertiveness training, and moral development. A number of studies have found that cognitive problem-solving (Kazdin, 1996), and moral development interventions (Arbuthnot, 1992) are effective in reducing externalising behaviours and increasing prosocial skills. While research suggests that individual treatments can be efficacious, these approaches may be most effective when they compliment broader treatment programs (Burke *et al.*, 2002).

### Multi Systemic Therapy (MST)

Research suggests that successful interventions address multiple risk factors and work with both the child and the broader systems within which they operate; working with parents, families and schools (Catalano *et al.*, 1998;; Foster *et al.*, 2006; Olchowski *et al.*, 2006; Wasserman & Seracini, 2001).

MST is a family-systems based approach, and suggests that children's difficulties

commonly emerge within the context of the family (Henggeler & Borduin, 1990). The family is viewed as one 'system' and the child's behaviour is thought to be embedded in a number of systems, including the family, peers, school and the wider community (Borduin, 1999). Therefore, in order to facilitate change, MST proposes that treatments must address factors within and between multiple systems.

MST combines a number of treatment techniques and these are used on an 'as needed' basis, depending on which 'system' requires intervention. The treatment may be directed towards one or more of the systems at any one time. Within the family system a number of strategies are used to alter how family members interact: identifying problems, increasing communication, and building cohesion. MST attempts to address any marital conflict which is impeding parents' ability to function as caregivers, and seeks to reduce negative interactions between the adolescent and parent (Kazdin, 2001). While reducing negative interactions, MST also fosters the development of warmth and cohesion within the family.

The interrelatedness of each system is the crucial factor in MST; unlike other approaches, MST will cover a wide range of domains. For example, an intervention may address parental unemployment as this has implications for parental stress, marital conflict and increased substance abuse (Kazdin, 2001).

MST is predominantly used with adolescents with offending behaviours. The evidence base for this population is extremely promising, and shows that MST is successful in reducing delinquency and emotional and behaviour problems (Borduin,

1999; Borduin *et al.*, 1995; Henggeler *et al.*, 1998). Outcome studies also report improvements in family functioning and suggest that these changes are maintained up to 5 years later (Henggler, 1994). Interestingly, despite the multiple treatment approach, MST has been demonstrated to be extremely cost effective (Aos *et al.*, 2001).

### *1.1.7 Co-morbidity*

Co-morbid anxiety and mood disorders often occur in children and adolescents who present with conduct disorder (for review see Angold *et al.*, 1999). This is evident in the ICD-10 which has created a distinct sub-type of depressive conduct disorder for conduct disorder with co-morbid depression.

An ever-expanding body of research indicates that conduct disorder is associated with increased risk for other disorders during childhood and adolescents (for review see Angold *et al.*, 1999). Research from New Zealand reported that at a four year follow-up, children with conduct disorder were almost three times more likely to have other psychiatric disorders than children with no diagnosis of conduct disorder (Offord *et al.*, 1992).

Angold *et al.* (1999) conducted a meta-analysis of the associations between childhood psychiatric disorders. They included 21 general population studies in their meta-analysis and found significant variance in the findings. The rates of Attention Deficit Hyperactivity Disorder (ADHD) present in children with a diagnosis of CD

was said to range from 3.1 per cent (Angold *et al.*, 1998) to 41 per cent (Costello *et al.*, 1988). The rates of CD with depression were reported to range from 2.2 per cent (Costello *et al.*, 1988) to 45.9 per cent (Freehan *et al.*, 1994). Finally, the co morbidity between CD and anxiety was reported to range from 4.8 per cent (Kashani *et al.*, 1987) to 55.3 per cent (Bird *et al.*, 1993). The large differences in the reported findings may be accounted for by a number of factors, including differences in diagnostic criteria, measures used, and the populations studied.

Hill (2002) is dubious about whether it is possible to separate ODD and CD from other disorders, as suggested by the common over-lap in symptom 'behaviours' and the wide variation in attributions made regarding these behaviours. For example, if a child gets up from his or her seat in the classroom and ignores the instructions of his teacher, he or she could be identified as being oppositional and defiant (ODD symptoms) or impulsive and inattentive (ADHD symptoms). Using behaviours as a means of classification is an approach open to ambiguity, and suggests that the extent of co morbidity across individual disorders further reduces their distinctiveness as categorical entities (Hill, 2002). In addition, the issue of co morbidity further complicates matters when attempting to understand the developmental pathways to ODD and CD. In line with behavioural theories of psychopathology a number of researchers have begun to explore the function of problem behaviours, rather than separating and analysing symptoms (e.g. Hayes *et al.*, 1996). Specifically, it has been suggested that emotion regulation may be a unifying function of a number of symptom presentations and maladaptive behaviours (Gross & Munz, 1995).

## **1.2 Conduct Problems and Emotion Regulation**

Children presenting with psychiatric difficulties commonly display a tendency to either over-regulate or under-regulate and have difficulty regulating emotions in an adaptive way (Zeman *et al.*, 2006). Both have implications for their behaviour; those who over-regulate may dampen down emotions and present as passive and withdrawn, while those who under-regulate may present as verbally and physically aggressive.

Over the past decade there has been increasing evidence to suggest that children with conduct problems have difficulty regulating their emotions (Eisenberg *et al.*, 2000; Eisenberg *et al.*, 2004; Krueger *et al.*, 1996; Olson *et al.*, 1999).

Negative emotions such as irritability, frustration, and anger are commonly displayed in children with conduct problems (Eisenberg *et al.*, 1994; Eisenberg *et al.*, 1997). However it may not be the presence of these emotions that cause the difficulties, but rather the modulation and expression of these emotions.

In their research Eisenberg *et al.* (1996) explored temperamental emotionality and emotion regulation in children with conduct problems. Emotionality is used to describe children's experience of emotions; high emotionality relates to a high sensitivity to emotional experience, while low emotionality reflects a reduced sensitivity.

Eisenberg *et al.* (1996) found that children with high emotionality combined with

poor regulation skills are more likely to exhibit conduct difficulties, in contrast to those with high emotionality and good regulatory skills. Therefore it would appear that emotional sensitivity is not a risk factor for the expression of conduct problems, but rather that deficits in children's regulatory skills interfere with the modulation of their arousal.

## **1.3 Emotion Regulation**

Emotion regulation is a complex concept and the following section explores the concept of emotions; why one needs to regulate them; and the mechanisms by which they are regulated.

### *1.3.1 What are emotions?*

At their most functional level emotions are biologically based reactions. (Buck, 1994). They mediate behaviour and help an individual to achieve their desired goals (Tooby & Cosmides, 1990). Emotions arise when a situation is deemed to require action (Gross & Munoz, 1995); and can lead to approach or avoidance behaviours, depending on the appraisal of the situation (Gerhardt, 2004; Power & Dalgleish, 2008). Negative emotions such as disgust, anxiety, and fear are generally associated with actions designed to avoid, suppress, or escape an unsettling situation. Positive emotions like joy and happiness are more likely to trigger actions which help an individual approach or persist with situations which support their development (Thompson, 1994).

While it is recognised that discrete emotions can be distinguished, the emotional behaviour of an individual is influenced by a number of factors, such as the “intensity, modulation, persistence, onset and rise time, and lability of and recovery from emotional responses” (Thompson, 1994, p25). These factors are sometimes referred to as the ‘quality’ of the emotion (Thompson, 1994).

### *1.3.2. Why regulate emotions?*

Emotions can be overwhelming and powerful experiences. At a functional level, emotions must be regulated to allow an individual to adapt to the on-going changes in the environment (Frijda, 1986), as an inability to adequately match may lead to an increase in arousal and a sense of feeling overwhelmed or that one is ‘not coping’.

Regulating emotions not only helps an individual to deal with immediate demands, it also helps to facilitate problem-solving and work towards the accomplishment of future goals. For example, when considering concepts such as ‘willpower’ and ‘foresightedness’ it is evident that emotion regulation is necessary to inhibit the desire for immediate gratification, by facilitating the application of cognitive functions in tasks requiring delay and inhibition (Mischel, 1996).

Emotion regulation is not only concerned with goal attainment, it is also a significant component of emotional development. Through adaptive emotion regulatory processes the individual develops emotional competence (Saarni, 1989) and is able to function and respond appropriately to cultural expectations. Therefore, emotion regulation is relevant within the wider societal context and enables an individual to interact effectively with their family, peers and wider community (Rubin & Rose-Krasnor, 1986). Difficulties in interacting with family and peers are common in children with conduct problems. It is argued that these children may have difficulty with meeting the immediate demands in the environment; as reflected in their aggressive behaviour.

### 1.3.3. Defining Emotion Regulation

Emotion regulation is a flexible, multi-dimensional process which allows an individual to recognise, monitor, evaluate and modify emotional responses (Thompson, 1994). The process of emotion regulation rests on a continuum from conscious, effortful, and controlled regulation to unconscious, effortless and automatic regulation (Gross, 1998). Whether conscious or unconscious, adaptive emotion regulation allows an individual to maintain flexibility and respond dynamically to the on-going demands of internal and external experiences. Within this context emotion regulation helps an individual to manage experiences which are both positively and negatively arousing (Cole *et al.*,1994)

Further, *goal attainment* is a core feature of emotion regulation (Thompson, 1994). From a functional perspective it evident that emotion regulation can be modified to facilitate the regulator's motivation and goals. Depending on the desired goal, emotional regulation can require the maintenance, enhancement, or inhibition of emotional arousal (Masters; 1991), and this is achieved by altering the dimensions of the emotion (e.g. the intensity or persistence) (Thompson, 1994; Thompson & Calkins, 1996).

Thompson (1994) asks:

‘Is emotion regulation primarily concerned with the management of expressions of emotions, or the underlying arousal processes leading to those expressions – or both?’ (p.27)

It may be helpful to view Thompson's question as a distinction between the 'what' and the 'how'. What is regulated and how is it regulated?

When considering *what* is regulated; this refers to the regulation of an individual's emotional responses; including changes in an individual's physiological, cognitive and behavioural responses (Gross & Levenson, 1993; Lang, Rice, & Sternbach, 1972). In order to regulate emotional responses a number of strategies may be implemented. The following section will discuss current theoretical conceptualisations of emotional responses (emotion regulation strategies).

## **1.4. Regulating Emotional Responses**

### *1.4.1. Emotion Regulation Strategies*

The modulation of emotional responses allows an individual to have some control over which emotions they experience and how they are expressed. Research exploring the modulation of emotional responses predominantly focuses on the measurement of functional/adaptive and dysfunctional/maladaptive strategies (Garnefski, Kraaji & Spinhoven, 2001; Gratz & Roemer, 2004; Gross & John, 2003; Phillips & Power, 2007). These strategies seek to regulate one or more of the components of an emotional response – behavioural, cognitive or physiological (Gross & Levenson, 1993).

Functional strategies are believed to facilitate emotional processing, while dysfunctional strategies may hinder this process (Phillips & Power, 2007); and may also be indicative of less flexibility and adaptability within the individual.

Phillips and Power (2007) make a further distinction and suggest that individuals draw on both internal (internalised or intra personal) and external (actual attachment or interpersonal) resources to regulate emotions.

### *1.4.2 Emotion Regulation Strategies used by Children*

Adaptive emotion regulation is no easy task and children are required to simultaneously evaluate, integrate and respond to emotional information, not only to

meet immediate demands, but also to achieve interpersonal and intra personal goals (Zeman *et al*, 2006).

Fields and Prinz (1997) suggest that:

“Children may be limited in their coping repertoire by cognitive, affective, expressive, or social facets of development and by lack of experience.” (p.937)

Young children's coping responses are constrained by the under-development of a number of internal processes, but they are also limited by a number of factors in their external environment. Most notably, children's environments are generally quite restricted by their caregivers; who place limitations on their children, regarding their freedom to make choices and have control over circumstances.

Individual variation in coping will obviously occur, however it is assumed that a child's internal and external repertoire of strategies generally develops as a function of increasing age (Band & Weisz, 1988; Brodzinsky *et al.*, 1992). With a growing sense of autonomy and internal locus of control, children are increasing able to draw on internal and external resources (Fields & Prinz, 1997).

Coping strategies are viewed by many authors as being an 'effortful' response, rather than an automatic and uncontrolled reaction (Lazarus & Folkman, 1984; Murphy & Moriarity, 1976). There are a number of models which explore the process of coping and some of these have been applied to children. This study is particularly interested in the problem-focused / emotion-focused coping model which is based on Lazarus' (1974) cognitive appraisal model.

The model assumes that coping strategies can be divided into two broad categories; problem-focused coping, which aims to directly change the stressor (e.g. by modifying the external environment), and emotion-focused coping, which attempts to regulate the emotional arousal which accompanies the stressor (e.g. physically releasing the emotion by crying) (Folkman & Lazarus, 1980).

Research suggests that generally school aged children (ages 8 to 12) use a variety of problem-focused and emotion-focused strategies (Band & Weisz., 1988; Brodzinsky *et al.*, 1992; Brown *et al.*, 1985; Spirito *et al.*, 1991). In addition, the evidence suggests that different coping strategies will be employed in different scenarios. For example, in relation to social stressors, school aged children are more likely to use problem-focused strategies, such as direct problem solving, rather than emotion-focused strategies, such as cognitive restructuring (Band & Weisz, 1985; Gamble, 1994). In contrast, in situations where children are unable to directly change the stressor (medical stressors) they were more likely to employ emotion-focused strategies, such as cognitive avoidance (Altshuler & Ruble, 1989).

Of particular significance is the finding that as children mature their repertoire and sophistication of coping strategies increases (Curry & Russ, 1985; Kliwer, 1991; Ryan, 1989). Cognitive and socio- emotional development appear to be interlinked as the maturation of cognitive systems allows children to understand the causes and consequences of socio emotional functioning (Zeman *et al.*, 2006).

When applying Phillips & Powers (2007) model of coping (internal / external & functional / dysfunctional) to children, it could be argued that the implementation of

more sophisticated internal (functional / dysfunctional) strategies will increase as a function of age.

### *1.4.3 Emotion Regulation Strategies used by Children with Conduct Problems*

In line with other findings, Phillips and Power (2007) report a strong relationship between external-dysfunctional strategies and conduct problems. This is of particular interest in the present study. It could be argued that external strategies are very 'immediate', and they not rely on the more sophisticated executive functions which have previously been discussed, such as attention, impulse control, and problem solving functions.

External strategies generally attempt to change either the physical environment (hitting objects, throwing objects) or the social environment (projecting feelings on to others). Children who use external strategies may have less capacity to internally self-regulate, and this will be discussed further in later sections in the context of development.

Whether problem-focused or emotion-focused, it could be argued that each approach to coping is unified by the functional goal to reduce or increase arousal. Within this context, external /dysfunctional strategies may be adaptive in certain situations.

## **1.5 Emotion Regulation: The Underlying Arousal Processes**

Consideration of *how* emotional responses are regulated involves an understanding of the executive functions which mediate the control of thought, affect and action (Zelazo & Mueller, 2002). This section will explore the different executive functions which facilitate emotion regulation processes.

Executive functions comprise a number of psychological processes involved in monitoring, appraising, engaging, disengaging and inhibiting impulses (Posner & Rothbart, 2000; Stuss, 2002).

### ***1.5.1. Attention***

Some authors argue that attentional control is a crucial mechanism of consequent emotional control (Bell & Deater-Deckard, 2007; Kopp, 1989), and a necessary component of conflict resolution (Botvinick *et al.*, 1999; Posner & Rothbart, 2000). Attention processes allow other cognitive processes to function simultaneously, by helping to focus, redirect and integrate information (Zeman *et al.*, 2007).

At a functional level, attention processes help an individual to manage and separate emotionally arousing information, and shift one's focus both internally and externally (e.g. from an unpleasant thought to a pleasant thought). Research suggests that in conflict situations, children who are able to shift their attention away from anger inducing stimuli are less likely to exhibit aggressive behaviour (Eisenberg *et al.*, 1997; Eisenberg *et al.*, 1994).

In contrast, children who have less sophisticated attentional processes may be unable to re-direct their attention, and their inability to employ functional attention processes may force the child to remain engaged in distressing situations; exacerbating their level of negative arousal and resulting in aggressive behaviour. Research supports this argument as higher levels of aggression are found in children who are less able to direct their attention and inhibit their impulses (Rothbart, Ahadi, & Hershey, 1994).

Within this context, aggression may be used as an immediate strategy to reduce arousal and it could be argued that while this may be viewed as a dysfunctional strategy, it may become quite functional for the child.

### *1.5.2. Inhibitory control*

Inhibitory control is another core component of emotion regulation and relates to the capacity for active, voluntary inhibition or modulation of response. Inhibitory control is necessary for the immediate inhibition of action and facilitates the allocation of attention processes (Davis *et al.*, 2001). Within this context, inhibitory control may work alongside attention processes to facilitate problem solving and decision making.

More generally, inhibitory control enables goal attainment (e.g. avoid conflict with peers), facilitates a child's understanding of the link between actions and consequences (Derryberry & Reed, 1996), and develops social competence

(Eisenberg *et al.*, 1996; Kochanska *et al.*, 1996). Inhibitory control is believed to contribute to the development of conscience in young children (Kochanska, Murray, & Coy, 1997), and this self-control also fosters a sense of responsibility for one's actions (Derryberry & Reed, 1996). Inhibitory control is therefore an important aspect of emotion regulation as it allows for self-reflection through the processes of monitoring and evaluating. Research suggests that behavioural impulsivity is strongly associated with antisocial behaviour (White *et al.*, 1994).

### *1.5.3. The role of language and information processing*

Lane *et al.* (1997) suggest that language is a necessary component in the identification, evaluation and modification of emotions. Cognitive appraisal (Power & Dalgleish, 2008) is a key element in the process of identifying emotions and will influence how an individual interprets emotionally arousing situations. It is argued that the level of an individual's language skills will have some bearing on their capacity to cognitively appraise their emotional arousal.

Language is not only needed to identify emotions it also has a role in emotional responding including positive self-talk and cognitive re-framing. These are both functional internal emotion regulation strategies, and an individual's ability to effectively implement these will be dependent on the sophistication of their language skills.

Children with CD and other behavioural problems have been shown to have deficits

in expressive and receptive language skills (Eccles & Gootman, 2002; Karniski *et al.*, 1982); and the ability to form internal dialogue and engage in self-directed speech (Attwood, 2005). These children commonly have difficulties with reading and this may indicate problems with language processing (Hinshaw, 1992; Speltz *et al.*, 1999). A study of an adolescent population found that between 52 per cent and 61 per cent of young offenders were reading disabled (Chitsabesan *et al.*, 2006).

In summary, emotion regulation is goal driven and will require variations in the sophistication and complexity of the underlying arousal processes. It could be argued that long term goal attainment will require the activation of more sophisticated processes, such as impulse inhibition, problem solving, and planning and sequencing.

It is proposed that when aggression is viewed as an external / dysfunctional coping strategy it may reflect an inability for long-term goal attainment; the individual has a reduced capacity to integrate and modulate those processes necessary for long-term conflict resolution. The following section will discuss this in further detail, and highlight the evidence suggesting that specific brain mechanisms are linked to the expression of aggressive behaviour.

## **1.6 Emotion Dysregulation: Deficits in The Underlying Arousal Processes?**

Emotion regulation may be considered an extension of a more fundamental capacity for executive or “effortful” control (Posner & Rothbart, 1998; 2000), and deficits in this regulatory capacity have consistently been implicated in aggressive behaviour problems at various ages (Séguin & Zelazo, 2005; Toupin *et al.*, 2000).

It is argued that aggressive behaviour may be viewed as an expression of an under-regulated emotional system. With the recent advances in non-invasive neuroimaging techniques such as dense-array EEG, functional magnetic resonance imaging (fMRI), and magneto encephalography, it is now possible to explore the brain mechanisms that may be involved in the under-regulation of emotional systems.

### ***Neuroanatomy***

Stieben *et al.* (2007) used dense-array EEG techniques to investigate neurophysiological variables that might separate subtypes of externalizing children, paying particular attention to the cognitive processes recruited for emotion regulation. They suggested that differences in emotion regulation mechanisms could be inferred from distinct patterns of brain activity. The authors believe that these patterns relate to cortical regions associated with self-regulation and cognitive–emotional processes.

Indeed, there is emerging evidence beginning to link the prefrontal cortex (PFC) to

aggression and antisocial behaviour (Dahl, 2001). Clinical studies suggest that frontal lobe damage is associated with impairment in a number of functions: attention, planning, self-monitoring and responsiveness to reward or punishment (Damasio, 1994; Tranel & Eslinger, 2000). These deficits appear to have a number of implications for how an individual is able to manage their behaviour; and difficulties with monitoring and evaluating emotional responses are likely to occur (Grafman *et al.*, 1996; Volkow & Tancredi, 1987).

Research has demonstrated that damage to the prefrontal cortex appears to limit an individual's ability to make effective decisions (Damasio, 1994) and reduces the inhibitory influence on the expression of aggressive behaviour (Grafman *et al.*, 1996; Herbert & Martunez, 2001; Miller, 1994; Volkow & Tancredi, 1987); again adding support to the concept that evaluating and integrating emotional information while also managing one's behaviour are all both crucial in adaptive emotion regulation (Zeman *et al.*, 2006).

Another closely related structure which may play a role in the regulation of aggression is the orbital frontal cortex (OFC) (Blair (2001). The orbital frontal cortex is thought to be responsible for a number of functions: the appraisal of emotional information, assessing reinforcement contingencies, and inhibiting impulsive behaviour (Rolls, 1999; Schore, 1994). Research has found that patients with lesions in the orbital frontal cortex area display increased impulsivity, irritability, and a reduced ability to plan and consider the consequences of their actions (Luria, 1980). It could be argued that children who present with conduct

problems may have deficits in orbito-frontal functioning. This is reflected in their emotion processing biases (Dodge, 1990) and difficulties with impulsivity and inhibiting aggressive behaviours (Rolls, 1999).

The anterior cingulate cortex (ACC) has also been implicated in the management of aggression. The anterior cingulate cortex is believed to be composed of at least two functionally distinct areas: the ventral region and the dorsal region (Bush *et al.*, 2000). The ventral region of the anterior cingulate cortex is thought to play an essential role in a number of functions: the processing of negative emotions (Marinkovic *et al.*, 2000), initiation, motivation, and goal directed behaviour (Casey *et al.*, 1997). The dorsal region is believed to be associated with self-monitoring, working memory and the ability to focus attention and direct attention (Botvinick *et al.*, 1999; Bush *et al.*, 2000; Posner & Rothbart, 1998; 2000).

Davis *et al.* (2002) found that poor performance in tasks tapping attentional processes in the anterior cingulate cortex were related to increased rates of externalizing problems in young children. Further, Sterzer *et al.* (2005) found that many adolescents with conduct disorder showed deactivation of the dorsal anterior cingulate cortex while viewing negative (as opposed to neutral) emotion-eliciting pictures. The authors concluded that the lack of activity in this area may result in a deficit in emotional control and could account for “an impaired capability to constrain outbursts of emotional behaviour, leading to an increased propensity for impulsive aggression” (p. 12).

Clearly the research suggests that the neuro-anatomy and neural pathways of children

who present with conduct problems may actually be functioning quite differently to 'neuro-typical' children. Further, the sophistication and quality of the interconnectedness of neuro-anatomical structures and neural pathways appears to have far reaching implications for a child's capability (or lack of) for effective emotion regulation.

Of particular significance is the finding that functional differences in brain activity can change in response to treatment (Mayberg *et al.*, 1999), and suggests that brain functioning can be influenced by experience. This has implications for our understanding of the developmental pathways to conduct difficulties, and may highlight the need for the integration of medical and psychological models.

## **1.7. The Development of Emotion Regulation: Individual Differences**

The previous section outlined the atypical differences in neuroanatomical structures and systems which appear to influence emotion dysregulation and aggressive behaviour. The following sections will explore how biological, psychological and sociological factors contribute to the development of typical and atypical emotion regulatory processes; specifically looking at theories of attachment, social information processing and social learning.

### ***1.7.1 Biological***

#### ***Temperament***

Research suggests that in early infancy a bidirectional process occurs where the infant is not a passive recipient of reinforcers but, rather, is born with a unique set of biological characteristics which influence how they respond to and interact with their environment (Sameroff, 2000). Each individual is born with a defined temperament, and genes and biology determine much of this temperamental make-up. Temperament refers to the 'nature' of a person and influences their level of arousal and reactivity in response to their environment (Rothbart *et al.*, 2004).

Research indicates that temperamental differences may play a significant role in the development of emotion regulation (Derryberry & Rothbart, 1997), as individuals have different thresholds for positive and negative emotions (Davidson, 1992). At birth, some infants are said to have a greater capacity to self-regulate than others;

they are quicker to comfort, self-soothe and demonstrate less negative affect (Rothbart & Derryberry, 1981). Some research indicates that a difficult temperament (characterised by inflexibility, negative emotionality and reactive responding) is predictive of externalising behaviour problems later in childhood (Goldberg *et al.*, 1990; Van den Boom & Hoeksma, 1994).

### *Neuro-biology*

At birth, neuro-anatomical structures and neural pathways which facilitate emotion regulatory processes are still extremely immature (Dawson *et al.*, 1992). The progressive development of these structures and pathways is dependent on the complex interaction between the infant's biological predisposition (i.e. temperament) and experiential processes (Hill, 2001).

Despite the immaturity of neural structures and pathways, various studies have demonstrated that rudimentary emotion regulation strategies are present at 3 months, such as non-nutritive sucking (Gunnar, 1986; Gunnar *et al.*, 1984) and gaze aversion (Braungart & Stifter, 1991; Field, 1977; Stifter & Moyer, 1991).

These findings are supported by research which suggests that there is a correlation between structural changes in the prefrontal cortex and the emergence of simple emotion regulation strategies over the progression of first and second year of an infant's life (Dawson *et al.*, 1992). Studies into the development of brain functioning have consistently pointed to 'critical periods' in the acceleration of development (Anders & Zeanah, 1984; Erzurumlu & Killackey, 1982; Greenough, Black &

Wallace, 1987).

One of the first critical periods of brain development occurs immediately following birth and continues to around 18-24 months (Dobbing & Smart, 1974). This acceleration of growth is not only evidenced by the emergence of rudimentary functions (Dawson *et al.*, 1992); it is also reflected in the rapid increase in brain weight from 400g at birth to 1000g at 12 months (Lecours, 1982).

The 'critical period' concept presumes that neurobiological structures and systems develop at different periods and suggests that "specific critical conditions and stimuli are necessary for development and can influence development only during that period" (Erzurumlu & Killackey, 1982, p.207). Further, if the infant is subject to environmental conditions which are deemed to be out-with the normative range, this will negatively impact on the infant's neurobiological development, and hence, their regulatory skills (Shore, 1999).

### *1.7.2 Psychological*

The newborn's environment predominantly consists of their relationship with the caregiver, and emotion regulation develops through repeated interactions with the caregiver (Bowlby, 1969). Concepts from attachment theory provide a framework of how parent-infant interactions shape the development of emotion regulatory processes: "attunement" (Stern, 1985), "containment" (Bion, 1962), "mirroring" (Winnicott, 1971) and "mentalisation" (Fonagy et al., 2002) all capture the dyadic interaction necessary for infant development.

## *Attachment Systems*

Bowlby's early attachment theory (1969) provides a model of how the parent-infant relationship may facilitate or impede the development of emotion regulatory processes.

Bowlby's (1969) attachment theory assumes that infants are born with a set of innate behaviours that are designed to maximise their survival. The dyadic interactions between infant and caregiver form the "attachment system", and this is activated during times of need and distress. The attachment system is therefore designed to increase proximity between the infant and the caregiver.

At a very basic level the attachment system provides a framework for the infant to develop self-regulatory skills; the infant's goal (and motivation for regulation) is to increase proximity with the caregiver (Bowlby, 1969). The role of the caregiver is to help the infant understand and modulate their emotional arousal. As Fonagy *et al.* (2002) states:

"None of us is born with the capacity to regulate our own emotional reactions. A dyadic regulatory system evolves where the infant's signals of moment-to-moment changes in his state are understood and responded to by the caregiver, thereby achieving regulation". (p.37)

Although an infant is not born with the capacity to regulate their emotions, their temperamental disposition will have an impact on the degree to which they experience distress. Temperament predicts an infant's reactivity to distress, and within this context the 'dyadic regulatory system' is influenced by both the infant's

own temperament and the subsequent response of the caregiver. An infant with a 'difficult' temperament, characterised by high irritability may elicit less maternal sensitivity in the caregiver, and this will have implications for the attachment system.

Optimum development is likely to occur in the presence of a secure attachment, and this develops in response to parenting that is sufficiently sensitive, loving, consistent, attuned, and accepting. The parent is consistently available and is able to understand their infant and respond appropriately (Bowlby, 1969).

*Maternal (caregiver) sensitivity* is crucial in supporting the development of self-regulatory processes in the infant. Maternal sensitivity is achieved through positive vocalisation, constant gaze, warm affect and reciprocity (Feldman *et al.*, 2004). A number of studies have demonstrated a link between maternal sensitivity, and infants cognitive functioning (Ostfeld *et al.*, 2000; Stams *et al.*, 2002) and self-regulation (Feldman *et al.*, 2004). Infants who have received sensitive caregiving are less likely to demonstrate negative affect (Cassidy, 1994).

In a longitudinal study, Feldman *et al.* (2004) explored the relationship between maternal sensitivity and infant development. The authors compared groups of triplets, twins and singletons at 3, 6 and 12 months, and found that low maternal sensitivity was associated with poorer cognitive and self-regulatory skills at 1 year. The authors suggest that a triplet birth may present an independent risk factor for infant development:

“A triplet birth creates a rearing ecology marked by high parenting stress and

difficulties in providing exclusive parenting to each child, resulting in low maternal sensitivity across infancy” (p1785).

Being a triplet is therefore not necessarily a risk factor in itself; rather it is the availability and degree of sensitivity of the caregiver that is relevant. Thompson (1994) suggests that it is predominantly in the parent-child relationship that the infant learns about emotion regulation and therefore it is crucial that the caregiver responds sensitivity to both negative and positive affective signals from the infant; fostering a range of adaptive emotion regulation responses.

*Affect attunement* (Stern, 1985) is also important, and is achieved when the caregiver successfully mirrors the infant’s emotional experience. Stern (1985) suggests that caregivers’ ability to match with their infant’s behavioural and/or physiological states also reflects of an ability to match with the inner state of the infant. Through this process the infant's emotions are contained, reflected back, and processed in a manner which is acceptable to the infant.

Affect attunement is essential in the development of emotion regulation as the infant learns that they are able to tolerate increasing levels of distress. Over time, strategies used by the caregiver become internalised and the infant develops a flexible approach to emotion regulation (Cassidy, 1994).

### *Deficits in the Attachment System?*

There is a wealth of evidence linking the quality of attachment in infancy to adaptive functioning later in childhood and adolescence (Benoit & Parker, 1992; Buist *et al.*,

2004; van Ijzendoorn, 1995; Raja *et al.*, 1992). The quality of the parent-infant relationship may be compromised when infants develop an insecure attachment to their caregiver. Ainsworth (1978) describes two types of insecure attachment patterns: avoidant and ambivalent.

### *Avoidant attachment*

An avoidant attachment develops when the caregiver is unwilling to meet the child's needs, and these children learn that in order to increase parental proximity they must minimise their distress and conduct themselves in a manner that is acceptable to the caregiver. A child with an avoidant attachment is characterised by emotional independence, self-sufficiency, self-containment and compliance (Main & Solomon 1986).

### *The impact on Emotion Regulation*

Caregivers of avoidant infants are likely to demonstrate low maternal sensitivity and may even be quite hostile towards their infants. Therefore, in order to increase proximity with the caregiver, these infants learn to 'de-activate' their arousal. Emotions are suppressed and as these infants mature they may develop very limited and rigid emotional responses (DeKlyen & Speltz, 2001).

### *Ambivalent Attachment*

An ambivalent attachment develops when the caregiver is unable to meet the child's

needs (Ainsworth, 1978) and the caregiving is experienced as *inconsistent*. These carers are usually preoccupied with their own needs, and the uncertainty about whether anyone can meet these needs. These caregivers fear emotional abandonment and this fear often extends to their own children. This preoccupation reduces their ability to monitor and mirror their child's emotional states; creating inconsistencies in the caregiving role (Bowlby, 1969).

Children with this attachment style often attempt to control other people's unpredictability through coercion and use strong displays of emotions, including anger and threat (Crittenden, 1995). Caregivers may respond to these negative displays of emotion by withdrawing and becoming angry and frustrated themselves, and these children remain unregulated. A preoccupation develops around other people's emotional availability, and this negative cycle affects both parent and child, and further exacerbates the anxiety in the relationship.

### *The impact on Emotion Regulation*

When the ambivalent child experiences distress they learn that they must increase their externalising behaviour in order to engage their caregiver; usually by means of provocative, attention seeking behaviour. Further, the caregiver is often unable to provide any reassurance and can become increasingly anxious themselves. This relationship is marked by a lack of mirroring (Winnicott, 1971) and containment (Bion, 1962) and subsequently this impedes the development of adaptive regulatory processes. Children with an insecure-ambivalent attachment often present as under-regulated as demonstrated by their extreme displays of emotion.

### *Disorganised Attachment*

A small number of infants do not meet the criteria for secure, avoidant or ambivalent attachments; in such cases they are placed in a fourth category: disorganised /disoriented attachment (Main & Solomon, 1986). During the Strange Situation experiment these infants show a number of unusual behaviours on return to their mothers, sometimes appearing distressed and confused, while also apprehensive. A disorganised attachment pattern often combines elements of avoidance and resistance (Main & Solomon, 1986).

### *The Impact on Emotion Regulation*

As the name suggests a disorganised attachment is unlikely to lead to any consistent mode of regulating. It has been suggested that disorganisation is a response to caregiving which is fear-inspiring or a caregiver who is fearful. The infant's experience of caregiving is that of a paradox of safety and fear; and therefore any strategy which increases proximity with the caregiver is unlikely to consistently provide a feeling of safety (Main & Hesse, 1990). These infants are likely to both over-regulate and under-regulate their arousal with no consistent pattern. Main & Hesse (1990) found that disorganised infants were quite controlling, and attempted to control the parent-child relationship in order to reduce negative arousal. While this may increase consistency in the parent-child relationship (Wahler & Dumas, 1986), there is also the risk that this may develop into a coercive relationship. As discussed earlier in relation to infants with an ambivalent attachment, one characteristic of the emotion regulation style is coercive behaviour which seeks to control that of others

in order to increase predictability. This is particularly interesting, as the DSM-IV criteria for CD suggests behaviour which is coercive in nature.

### *Internal Working Models*

As infants mature, the attachment system develops to incorporate cognitive-affective working models of attachment relationships that are believed to influence information processing and behavioural responses. Infants develop an increasing capacity to modulate and integrate the systems required for self-regulation; a crucial aspect of this maturation is the development of the self.

Howe (2005) suggests that despite the absence of language, the young infant is gradually building internal working models of how the self, others and relationships work; giving birth to the psychological self. Internal working models are thought to serve two inextricably linked functions: (1) to provide a working model of the self which reflects beliefs about one's sense of worth and lovability; and (2) to provide a working model of others which reflects one's beliefs in others trustworthiness and dependability (Lopez & Brennan, 2000).

An infant who has a healthy attachment to their caregiver is likely to build positive mental representations of the self, believing that they are lovable and competent; likewise, they will experience others as being kind and trustworthy (Howe, 2005). A securely attached child will be confident that the caregiver will respond to their emotion signals in a consistent way (Cassidy, 1994). A securely attached child is

more likely to be open and express a range of emotional responses; these will have been developed through their experience with the caregiver (Bretherton, 1985). In contrast an insecure attachment is likely to lead to internal working models which assume that others are untrustworthy and unreliable (Lopez & Brennan, 2000).

### *1.7.3. Social*

#### **Social Cognition**

Internal working models are also known as “social knowledge structures” (Dodge, 1990) and facilitate and govern how social information is processed. As children mature and their cognitive and social functioning develops they begin to make links between causality, the intentions of others, and how to respond accordingly.

Crick and Dodge (1994) suggest that there are six sequential steps in social information processing, and deficits in any of these steps are thought to lead to aggressive behaviour. The first step involves encoding social cues, by selectively attending to information in the environment. The second step involves the interpretation of the encoded information; helping the individual to define the problem. After the problem has been defined, the third step is the clarification of goals. The fourth step in the process requires the individual to generate appropriate responses to the given problem, leading to the fifth step, where the individual selects a response. Finally, the chosen response is transformed into an action.

Children's early attachment relationships and internal working models will have a significant bearing on how they encode and interpret social encounters. Children who believe that others are untrustworthy and unreliable are more likely to attribute hostile and negative intentions in others (Dodge *et al.*, 1990). Further, research suggests that children who are physically aggressive are more likely to focus on aggressive, rather than non aggressive cues (Gouze, 1987). It could be argued that these children are more hypervigilant to aggressive cues. Deficits in encoding and interpretation are not the only difficulties, a number of studies have found that boys with conduct problems compared with control groups are more likely to select aggressive responses to problems (Matthys *et al.*, 1999) and evaluate aggressive responses more positively (Crick & Ladd, 1990). It would appear that children with conduct difficulties make processing errors at multiple stages, and these errors or deficits may be influenced by an individual's early attachment experiences and internal working models. However, attachment theory alone is not sufficient to explain these processing errors. The repertoire of responses available to an individual will also be influenced by the observations they have made in the environment. Children are thought to learn through processes such as modelling; this will be discussed in the following section within the context of social learning theory (Bandura, 1969).

## Social Learning Theory

Social learning theory was developed (although not exclusively) by Albert Bandura (1969) and outlines a set of learning principles that can be used to understand human

social development. The theory was initially influenced by behaviourism, and later by theories of information-processing.

Social learning is the process by which individuals learn behaviour by observing their external environment. Bandura's (1969) theory suggests that children and adults abstract and integrate information from their social environment to form cognitive representations of their experiences. These cognitive representations influence their behaviour, perceptions of self-efficacy and expectations about how one reacts and responds to the environment.

Observational learning is thought to have four main components, each of which plays a role in either the acquisition of information, or how the acquired information will be used to inform behaviour (Bandura, 1969; 1977). The first component involves *attention*; one must attend to the events that are being modelled and abstract the relevant information. Secondly one must *retain* the abstracted information; thirdly, the symbolic representation of the retained information must be transformed into an *action* which replicates that which was initially modelled. The final component relates to one's *motivation*; there must be a certain degree of incentive to motivate one to repeat the action observed.

Social modeling is an important aspect of child development, and self-regulatory processes can be taught through a number of strategies: cognitive modelling, overt external guidance and covert self-instruction. As children mature, they are able to observe more sophisticated strategies and implement both behavioural and cognitive strategies.

Bandura (1991) suggests that:

“Through the exercise of forethought, people motivate themselves and guide their actions in an anticipatory proactive way.....people possess self-reflective and self-reactive capabilities that enable them to exercise some control over their thoughts, feelings, motivation, and actions.” (p.248)

One limitation of this model is that it appears to assume that each individual has the same capacity to be 'self-reflective' and 'self-reactive', however numerous studies indicate that children with conduct difficulties often have deficits in attention, inhibition and linguistic processes (White *et al.*, 1994; Maguin *et al.*, 1993), and these deficits are likely to influence their ability to be self-reflective and exercise self-control.

In order to fully understand the individual differences in emotion regulatory processes, it is argued that it is necessary to integrate concepts from attachment theory, social cognition and social learning theory. An individual's attachment relationships, internal working models and their sociological environment may all contribute to the development and maintenance of both functional and dysfunctional emotion regulation strategies.

One common factor in these interrelated concepts is the role of parents. They are inextricably involved in the attachment relationships a child develops, and the subsequent development of their internal working models. Further, parents' behaviour is the model from which their children observe, and is internalised by the child, providing a guide for future behavioural responses. It is suggested that children's emotion regulatory processes are significantly influenced by parents own

emotion regulatory processes. The following section will explore the intergenerational transmission of emotion regulatory processes.

## **1.8. The relationship between parent-child emotion regulation strategies**

Individual differences in emotion regulation strategies are likely to occur along multiple dimensions. One area yet to be explored (to the author's knowledge) is the relationship between child and parental emotion regulation strategies. Although to date, there is no research in this area, it is suggested that there may be similarities in the way that parents and children regulate their emotions. There are a number of theoretical constructs which point to this assumption, specifically attachment theory, family systems theory and social learning theory.

Attachment theory provides a framework for conceptualising the intergenerational transmission of emotion regulatory processes. Firstly, it is suggested that parents own attachment histories influence their capacity to support the development of emotion regulatory processes in their infants

In order for parents to be able to identify, hold, and feedback their infants emotional states, it is assumed that they must first have the capacity to regulate their own emotions.

Howe (2005) suggests that '...adults with secure attachments are able to behave flexibly.....they provide the other with fresh psychological information about their own mental states (what they are feeling and thinking) without too much distortion, defence or censorship.' p.31.

Research exploring adult attachments commonly uses the Adult Attachment

Interview (AAI) (George *et al.*, 1985). The AAI is a semi structured interview and classifies adult attachment using the following information (a) adults description and evaluation of their attachment experiences, (b) the form and content of these descriptions, and (c) the consistency of these attachment experiences (George *et al.*, 1985).

The AAI has three separate classifications: *secure*, *dismissing*, and *preoccupied*. Adults classified as *secure-autonomous* recollect a consistent and coherent relationship with their parents. These adults' responses are clear and relevant, and reflect both positive and negative experiences in childhood. Those classified as *insecure-dismissing* either devalue the importance of the attachment relationship or over idealize the relationship with little evidence to support this. These adults' responses are characterised by clear contradictions in the recollection of the attachment relationship. Adults classified as *insecure-preoccupied* are likely to recall a very entangled relationship with parents, with close ties, directly influenced by feelings of guilt or the need to please. Finally an additional category termed *unresolved*, is available for individuals who have experienced the loss of an attachment figure.

Research suggests that there are clear associations between parent attachment classifications and parent-infant relationships. Specifically, mother's who are classified as having a *secure* attachment are warmer and more responsive to their infants (Haft & Slade, 1989; IJendoorn, 1995). In turn, these infants use the mother as a safe base to explore their environment and are encouraged to freely express a

range of emotions. Although the expression of negative affect is somewhat reduced in securely attached infants, when it is experienced, the infant will convey this to the caregiver in an open and direct way (Cassidy, 1994). Within this relationship the parent is able to contain their own emotions, while also accepting both positive and negative emotions in the infant.

It is suggested that parents and children who are both 'securely' attached are likely to have an increased capacity to regulate emotions and employ functional emotion regulation strategies.

A *dismissive* parental attachment is characterised by rejection or suppression of feelings and memories about the attachment relationship. It is likely that as children, parents with a *dismissive* attachment were required to suppress and deny their emotions in order to increase proximity with their caregiver. Within the parent-infant relationship, the parent's own *dismissive* attachment reduces their ability to tolerate both negative and positive emotions, and as such they may be unable to tolerate negative affect in their infant, and therefore reject the infant during times of distress. Studies suggest that mothers of *avoidant* infants appear to be more restricted in their expression of emotions, (as characterised by a *dismissive* attachment) than mothers of *secure* infants (Main *et al.*, 1979; Malatesta *et al.*, 1989).

Parents with a *preoccupied* attachment are more likely to have children with externalising behaviour problems (Cassidy, 1994). Parents own ambivalent attachment style appears to lead to a preoccupation about their own needs; and their own fear of abandonment may make them unavailable and inconsistent in their

parenting.

These children learn that they must hyper-activate their arousal in order to increase proximity with the caregiver and externalising behaviour can be viewed as a manifestation of this process . Parents own 'insecure' attachment may impede their ability to support the development of rudimentary emotion regulatory processes in their infants. As such, insecurely attached parents and infants may be more limited in their capacity to functionally regulate emotions than securely attached parents and infants.

Parental attachment history not only influences parental capacity to self-regulate it also has implications for the emotion regulatory responses that will be modelled to their child. It is argued that insecurely attached adults may have a reduced capacity to self-regulate and dysfunctional emotion regulation strategies may be more commonly used. These dysfunctional emotion regulation strategies are likely to be modelled (Bandura, 1969) and internalised by the child.

Evidence suggests that toddlers who experience positive parental interactions through sufficient warmth, limit setting and the use of reasoning and problem solving are shown to demonstrate greater compliance and internalised control (Bornstein, 1995; Maccoby & Martin, 1983). Researchers have also demonstrated that positive maternal control strategies, such as reasoning and negotiation may help children to take responsibility for their actions and facilitate their understanding of social rules (Dunn, 1988; Crockenberg & Litman, 1990). It is argued that parents who model functional emotion regulatory processes, such as cognitive re-framing and problem

solving are more likely to have children who express greater internal control and employ similar functional emotion regulation strategies.

In contrast, parenting which is inconsistent and characterised by poor limit setting, monitoring and supervision is associated with poor emotional control and externalising behaviour problems in children (Stattin & Kerr, 2000). Evidence suggests that children with poor emotional control and those most at risk of developing external-dysfunctional emotion regulation strategies, are those with anti-social parents, where there is a strong correlation between parental and child antisocial behaviour (Cohen *et al.*, 1990).

Family processes including marital discord and family breakdown are strong predictors of anti-social behaviour in children (Rutter *et al.*, 1970), and children from divorced families are twice as likely to present with externalising behaviour problems (Maughan, 2001). Research suggests that these children are often exposed to conflict and discord before marital separation and during the separation process (Cherlin *et al.*, 1991). As children are increasingly exposed to aggression in the family environment, they may learn that this is a normal function of family relationships, and a valid means of achieving one's goals (Osofsky, 1995). When aggressive behaviour is normalised in this way, the families 'beliefs' about the use of aggression become internalised by the child, and subsequently, reinforce the modeled parental behaviour. Within this context it is possible to view how emotional responses are modeled within the family ecology and transmitted through the generations.

A common family process which reinforces dysfunctional emotion regulation strategies and externalising behaviour problems is the coercive parent-child relationship (Bank *et al.*, 1993; Rutter *et al.*, 1998). This type of interaction commonly occurs when parenting is inconsistent and parents have difficulty setting limits and boundaries (Patterson, 1992).

Within a coercive parent-child relationship, children learn to use aggression as a means of achieving their goals, such as increasing parental proximity or gaining control over the parent's behaviour. A coercive interaction may be triggered when a child elicits mild oppositional behaviour, which is quickly prohibited by the parent. The child then responds by escalating their behaviour, and again, this is challenged by the parent. An important aspect of a coercive interaction is that parents often fail to instruct their child towards more pro-social behaviour. Rather, the parent engages with the child's oppositional behaviour, and the mutual escalation continues until the parent eventually gives in. The child's behaviour is then negatively reinforced and the child learns that by continuing to become aggressive and escalating their behaviour, they will eventually obtain control over the situation.

It is suggested that a coercive parent-child relationship is characterised by the use of external-dysfunctional emotion regulation strategies; as both parent and child seek to gain control of the situation. Verbal and physical aggression is used as the coercive interaction escalates. Within this coercive interaction, parents fail to model more functional emotion regulation strategies to their children, as they themselves may have a limited coping repertoire.

As children, these parents may have also learnt to hyper-activate their arousal in order to gain control over their environment. This may be indicative of a *preoccupied* parental attachment. Research indicates that parents with this attachment style have difficulties setting limits on their children's behaviour (Solomon *et al.*, 1987) and poor limit setting is a parenting style that is associated with coercive families (Baumrind, 1973),

It is acknowledged that the nature of a coercive interaction is bidirectional and parental attachment style will not always influence the coercive interaction. A dyadic system exists, where 'child effects' also influence parental behaviour, and there is evidence to suggest that children's externalising behaviour may evoke parental negativity (Ge *et al.*, 1996; O'Connor *et al.*, 1998).

It is extremely difficult to tease out parent and child factors, however the attachment relationship may remain a unifying function, as it influences both parental and child internal working models, cognitive attributions and subsequent modelled behavioural responses.

## **1.9. Rationale for the Study**

Over the past decade research has increasingly focused on the development of conduct problems in early childhood (e.g. Burke *et al.*, 2002; Dodge & Pettit, 2003), and given the substantial rates of clinical referrals for conduct problems, it is evident that there is a need for effective interventions for these children.

Individual child programs predominantly work with pre-school and younger children (aged 4 to 8) (Webster-Stratton, 2000), and although there is evidence to suggest improvements in children's social skills (Serketich & Dumas, 1996; Webster-Stratton & Reid, 2003) there is little evidence to suggest that they reduce conduct problems *per se* (Denham & Almeida, 1987).

Further, child programs have a number of limitations, specifically the skills developed by children are not always transferable to the home environment, and positive outcomes are not always maintained (Webster-Stratton & Hammond, 1997).

Interventions working with parents: Triple P (Sanders *et al.*, 2003) and the Incredible Years Parent Training Program (Webster-Stratton, 2000) predominantly focus on developing parents' knowledge, skills and confidence in interacting with their children. The effectiveness of these training programs has been demonstrated with younger children (ages 4 to 8) (Webster-Stratton, 1993; Webster-Stratton & Hammond, 1997), however these programs are generally preventative and aim to reduce anti-social behaviour in later childhood and adolescence, rather than

addressing more entrenched conduct difficulties in older children (Losel & Beelmann, 2006).

Further, research suggests that improvements only account for two thirds of the treated children (Webster-Stratton, 1985), and raises the question: why might this approach work for some, but not others? One explanation is that some parents have difficulty maintaining and implementing the skills and strategies they have acquired. There may be a number of reasons for this and their own 'internal resources' may be a significant factor.

Although parenting programs place an emphasis on the parent-child relationship, they do not explore factors concerning parents' own early experiences and the implications these may have for their parenting style, responsiveness to their children, and their own capacity to regulate emotions.

MST (Henggeler et al., 2009) has a good evidence base and attempts to address the transactional interactions between parent and child, particularly focusing on reducing coercive interactions. The emphasis on changing both parental and child behaviour may be a fundamental element of the effectiveness of this program.

It is argued that parents are inextricably linked to the development and maintenance of conduct difficulties in children, and any intervention must address both child behaviour and parental behaviour. This study is based on rationale that parents' own capacity to self-regulate will influence the emotion regulation strategies that they

use, and will also influence the strategies that are modelled to their children.

To date, no known research has explored the relationship between parent and child emotion regulation strategies. The primary aim of this research is to explore whether there is a relationship between parental and child emotion regulation strategies in the general population. The research also aims to explore the relationship between children's emotion regulation strategies, externalising behaviour problems and general functioning.

In order to investigate the aims outlined above six hypotheses will be tested. These hypotheses can be seen below:

#### Hypothesis 1.

There will be a significant positive correlation between parent and child external-functional emotion regulation strategies

#### Hypothesis 2.

There will be a significant positive correlation between parent and child external-dysfunctional emotion regulation strategies.

#### Hypothesis 3.

There will be a significant positive correlation between parent and child internal-

functional emotion regulation strategies

Hypothesis 4.

There will be a significant positive correlation between parent and child internal-dysfunctional emotion regulation strategies.

Hypothesis 5.

There will be a significant positive correlation between children's external-dysfunctional emotion regulation strategies and children's externalising behaviour problems.

Hypothesis 6.

There will be a significant relationship between children's external-dysfunctional emotion regulation strategies and children's general well-being.

## **CHAPTER 2 - METHOD**

### ***2.1 Design***

A cross sectional design was used to determine the relationship between emotion regulation strategies used by children and their parents, in a non-clinical population. The relationship between children's emotion regulation strategies and externalising behaviour problems was also explored within the same non-clinical child population.

Children completed two questionnaires: the first measuring their emotion regulation strategies and a second measuring their general well-being. Parents also completed two questionnaires: the first measuring their emotion regulation strategies and a second measuring their child's behaviour. A correlation design was used to determine the relationship between parent-child emotion regulation strategies, and children's emotion regulation strategies and their behaviour.

### ***2.2 Statistical Power***

No research to date has explored the relationship between parent and child emotion regulation strategies. The necessary sample size calculation was based on Clark-Carter (2004) recommendations for detecting a correlation in a one-tailed sample. In order to achieve a medium effect size ( $r=0.4$ , power = 0.78-0.83) between 35-40 sets of data are required (Clark-Carter, 2004).

## **2.3 Ethical Approval**

Ethical approval for this research project was granted by the Edinburgh Clinical Psychology Department in February 2009 (see Appendix 3). However as the study required the participation of school aged children it was also necessary to obtain ethical approval from the local Council authority. The Council were initially contacted by telephone and details of the study were provided. Ethical approval was granted on the basis that the researcher provided the Council with a proposal of the study, and a copy of all proposed measures, information sheets and participant consent forms.

Ethical approval was also granted on the condition that the author obtained an enhanced disclosure check and consult with the Head of Educational Psychology Services regarding participant recruitment. All conditions were met and the study was subsequently granted full ethical approval (see appendix 3).

## **2.4 Participants**

### **2.4.1 Recruitment**

Both the local Council and Head of Educational Psychology Services were consulted in the recruitment of participants. Both parties were consulted about the suitability of various primary schools in the local area, as to ensure that participants were included from a broad range of demographic areas. Initially, children were identified through this process and parents/caregivers were identified as those residing with the identified children.

The first wave of recruitment was carried out in April 2009 and participants were recruited from three primary schools in the local area. Each primary school was identified as having approximately 80 participants who met the inclusion criteria. In total 240 consent forms and information sheets were distributed. All three primary schools yielded a low response rate and consent forms were collected from only 20 participants. In response to this, a number of strategies were put in place to maximise participation. For example, one head teacher placed an article in the primary school magazine promoting the study, and another head teacher spoke directly to parents in order to promote further participation. A further 6 consent forms were collected. The numbers of questionnaires (child / mother /father) returned are detailed in Table 1.

A second phase of recruitment was required and three more primary schools were identified. In total, 200 participants were identified as meeting the inclusion criteria and information sheets and consent forms were distributed accordingly. Of these, 17 consent forms were returned. See Table 1 for all questionnaires (child / mother /father) returned.

The first two phases of recruitment failed to obtain enough participants to achieve statistical power. Consequently, a third phase of recruitment was required. Again, the Head of Educational Psychology was consulted to identify two further primary schools. Altogether, 140 participants were identified as meeting the inclusion criteria and information sheets and consent forms were distributed to those identified. Of the 140 consent forms distributed, 21 consent forms were returned.

Following the third and final stage of recruitment, enough child-mother paired data sets were collected to achieve statistical power. Only 23 paired data sets were collected between children and fathers, and therefore this data was not included in the statistical analyses.

### *Return rate of questionnaire measures*

The return rate of consent forms and questionnaire measures is represented in the table below:

**Table 1. Return Rate**

Paired Data (Mother & Child)	Consent Forms Distributed	Consent Forms Returned	Child Questionnaire s Returned	Mother Questionnaire s Returned	Father Questionnaire s Returned
1 <sup>st</sup> Phase	240	26	15	15	9
2 <sup>nd</sup> Phase	200	17	11	9	8
3 <sup>rd</sup> Phase	140	21	13	13	6
Total	580	64	39	37	23

### *2.4.2. Demographics*

The number of male and female participants is reported in the table below:

**Table 2. Children's Sex**

SEX	MALE	FEMALE	TOTAL
NUMBER	23	16	39

The number of participants across the three age groups is reported below:

**Table 3. Children's Age**

AGE	NINE	TEN	ELEVEN
NUMBER	8	17	14

The sex and relationship status of parents is reported below:

**Table 4. Parents**

		SINGLE PARENT	WITH PARTNER
MOTHERS	37	16 (43%)	21(57%)
FATHERS	23	2 (9%)	21(91%)

The descriptive statistics show that almost half of all mothers (43%) were from single parent families.

### *2.4.3 Inclusion criteria*

*Children:* Children were included in this study based on the following criteria: (a) the child was between the ages 9 and 11 years old; (b) the child had no known reading impairment.

*Parent / carers.* Parents / carers were identified as those living at home with the identified child. Parents / carers were also asked to give general information about their relationship to the child (for example, whether they were the sole carer of the child).

### **2.5 Procedure**

### *2.5.1 Phase 1.*

The parents/carers of all children meeting the inclusion criteria were sent out two information letters: one for the parent/carer and a second for their child. They were also sent a consent form, and their signature was required to allow their child to take part in the study. The parent's/carer's signature was also used as confirmation that their child was happy to take part in the study. If parents/carers wished to participate in the study they were required to send the consent form back to the researcher in a stamped addressed envelope within four weeks of receipt of the information and consent form.

### *2.5.2 Phase 2.*

Participating children and parents/carers were identified as those who had returned the consent forms. After the four week return period, a date was allocated with the head teacher from each

individual primary school for the researcher to visit, distribute and collect questionnaires from the children.

### *2.5.3 Phase 3.*

All primary schools were visited at an appropriate time and an appropriate room was identified within the school where the children could complete the questionnaires in a quiet environment. The researcher and head teacher of each primary school were present while the children completed the questionnaires. The children were informed that their head teacher would be available to provide clarification about any of the

items contained in the adapted Regulation of Emotions Questionnaire. Once the participating children had completed the questionnaires, they were then given an envelope, containing the relevant questionnaires to take home to their parents/carers.

#### *2.5.4 Phase 4.*

Parents/carers completed their set of questionnaires and sent them back to the researcher in a stamped addressed envelope.

All questionnaires were number coded to ensure anonymity.

## **2.6 Measures & Scoring**

Children and parents both completed two questionnaires. Children completed one questionnaire measuring their emotion regulation strategies: the Regulation of Emotion Questionnaire (REQ) (adapted child version), and a second measuring their general well-being: the KIDSCREEN-10. Parents also completed a questionnaire measuring their emotion regulation strategies: the Regulation of Emotion Questionnaire (REQ), and a second questionnaire measuring their child's behaviour, attention and emotional difficulties: the Strengths and Difficulties Questionnaire (SDQ).

### *KIDSCREEN-10*

The KIDSCREEN-10 is a self-report measure used to assess a child's subjective health and well-being. The KIDSCREEN-10 was used in the study to measure each child's general well-being. Research suggests that the KIDSCREEN-10 is a reliable and valid measure among children and adolescents. Ravens-Sieberer *et al.* (2005) conducted a survey with 22,296 children and adolescents to assess the reliability and validity of the KIDSCREEN-10. The findings suggested that the measure demonstrates good reliability, with Cronbach's  $\alpha$  coefficients of 0.7 or above for all dimensions of the measure.

The KIDSCREEN-10 index results are combined into one global score, and higher scores indicate a higher health related quality of life (HRQoL).

### *Strengths and Difficulties Questionnaire (SDQ)*

The Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) was used to

assess each child's behaviour. The SDQ is a brief behavioural screening questionnaire for assessing children and youths (Goodman, 2001). It is usually completed by the parents of 3-16 year old children. The SDQ asks about 25 attributes, some positive and some negative. There are five sub-scales, generating scores for conduct problems, hyperactivity, emotional symptoms, peers problems and pro-social behaviour. The questionnaire asks respondents to rate attributes on a three-point Likert scale, so as to give an indication of how relevant each attribute is to the child.

The scores are grouped into four bands so that in the general population roughly 80% of children score 'close to average'; with a numerical value of 1, 10% score 'slightly raised'; with a numerical value of 2, 5% score 'high'; with a numerical value of 3, and 5% score 'very high'; with a numerical value of 4. The exception is the scale for pro-social behaviour, with roughly 80% 'close to average' (1), 10% 'slightly low' (2), 5% 'low' (3) and 5% 'very low' (4).

Research suggests that the SDQ has good reliability and validity (Goodman, 1998; Goodman *et al.*, 2001) and is a useful short measure of the psychopathology of children. For example, the measure taps inattention, hyperactivity and impulsivity; which comprise the three symptom domains for a DSM-IV diagnosis of attention-deficit/hyperactivity disorder (ADHD) (American Psychiatric Association, 1994). This study was primarily concerned with scores on the *conduct problems* sub-scale, however given the substantial comorbidity of conduct problems with other psychopathology, the SDQ was also used to identify problems in other areas of functioning, such as emotional and relationship difficulties.

### *Regulation of Emotion Questionnaire (REQ)*

The REQ (Phillips & Power, 2007) was used to assess an individual's use of emotion regulation strategies across four separate styles: internal-functional, internal-dysfunctional, external-functional, external-dysfunctional. The REQ contains 21 items in total and these include a number of cognitive and behavioural strategies. Items include, 'I review my thoughts or beliefs' (*positive re-appraisal: internal-functional*), 'I harm or punish myself in some way' (*self-harm: internal-dysfunctional*), 'I bully other people' (*bullying: external-dysfunctional*) and 'I talk to someone about how I feel' (*expression of feelings: external-functional*).

The 21 items contained in the REQ cover four separate regulation styles: internal-functional, internal-dysfunctional, external-functional, external-dysfunctional. Responses are given on a 5 point scale, ranging from 'never', 'sometimes', 'often', 'very often' and 'always'. The REQ responses were scored as follows: 'never' = 1, 'sometimes' = 2, 'often' = 3, 'very often' = 4, 'always' = 5. A single score was obtained for each emotion regulation style; this was achieved by combining the scores of items in each emotion regulation category. For example, five items are combined to give an overall mean score for the external-functional strategy.

Research has found the REQ to be a reliable and valid measure among adolescents (aged 12 upwards) and adults (Phillips & Power, 2007). The REQ was used in this study to measure parental/caregiver emotion regulation strategies.

### *Regulation of Emotion Questionnaire (REQ) (adapted child version)*

While the REQ has shown good reliability and validity within adolescent and adult populations (Phillips & Power, 2007), there is currently no evidence of its reliability and validity within a child population. For the purposes of the present study it was necessary to review the established research concerning child coping, and where necessary modify the measure in order to ensure that the measure was developmentally sensitive.

### Process of Adapting the REQ

The REQ is primarily a measure of emotion-focused coping strategies, that is, it considers the strategies that one would use to reduce/increase emotional arousal. When considering the suitability of using the REQ as a measure of emotion regulation with children, the main concern was that children would be able to comprehend the full range of strategies detailed in the REQ.

While adapting the REQ it was acknowledged that any changes in the measure should be developmentally sensitive (Fields & Prinz, 1997). In order to assess and monitor this, a primary school teacher was consulted and any linguistic complexities thought to be inappropriate for the age group concerned were highlighted, changed or omitted. Initially, a number of linguistic adaptations were made to ensure that the literacy rate was within the appropriate age range (9-11 years) (see Appendix 4).

In order to test the reliability and validity of the linguistically adapted REQ with school aged children (aged 9 to 11 years) a number of small focus groups were carried out. The focus groups were each made up of four children; each comprised of children of the same chronological age. Each child individually completed the

ERQ and then a discussion followed in the focus groups to assess the children's comprehension of each item. In order to assess accurately the children's understanding of each item, the children were asked to provide examples, either from personal experience or hypothetically.

In line with other research, the children identified that they would use different emotion regulation strategies in different circumstances (Band & Weisz., 1988; Brodzinsky *et al.*, 1992; Brown *et al.*, 1985; Spirito *et al.*, 1991): after an argument with friends, to help them manage conflict at home (e.g. parents arguing), to help them cope when someone dies, and to help them when they are worried.

Children in the 10-11 age groups were able to give a variety of valid examples for all of the items except item 11: '**I ask someone if things are as important as I think they are**' (adapted from the adult ERQ 'I put the situation into perspective'). Further discussion continued to explore the meaning of this item, by re-phrasing the item and exploring concrete examples. However even after further discussion, some of the children still seemed unsure as to how this item could be used as a strategy to increase/decrease emotional arousal. As such, to maintain reliability and validity the item was completely removed from the adapted child REQ and the corresponding item was also removed from the adult REQ.

Children aged 9 years had some difficulties understanding a number of the items (11, 15 & 19). Children in this age group had similar difficulties with item 11 (as above). One or two of the children had difficulty with the comprehension of item 15: '**I keep the feeling locked up inside**'.

A small number of children in the aged 9 focus group were unsure of the meaning of this item. The researcher explored this with the children and used other children's examples as a way to facilitate understanding. For example, some children commented that they thought the item meant 'I keep things to myself', or 'I don't tell others how I am feeling'. Other children used hand gestures to communicate their understanding, for example, placing their hand over their stomach to indicate that that's 'where' they keep feelings/thoughts.

It was felt that this item should remain in the questionnaire, however it was acknowledged that some children may require the assistance of the head teacher to clarify this item when they were completing the questionnaire.

The final item which this age group needed clarifying was item 19: **'things feel strange'** (adapted from REQ item 'things feel unreal'). Again, some children had a good understanding of this item, and shared this with the rest of the group, for example, some said they might 'stare into space'. The children reported that further discussion had helped their understanding. However they also reported that this was not a strategy that they were likely to use. This item remained in the questionnaire, however it was acknowledged that this item may require further clarification from the head teacher during completion. A final version of the adapted child REQ can be found in Appendix 5.

The adapted child REQ was presented to the same primary school teacher who had

been consulted regarding the initial linguistic changes. The teacher suggested that some of the parents participating in study may also have quite low literacy levels, and in order to account for this, the same changes could be made to the parent version of the REQ. The researcher agreed, and felt that this would also maintain reliability and validity across the items.

## **2.7 Data Analysis**

The Statistical Package for the Social Sciences (SPSS inc) version 10 was used to perform all of the statistical analyses used in this study. In order to test the six hypotheses a number of non parametric analyses were completed. Spearman correlations analyses were completed to explore the relationship between children's emotion regulation strategies and mother's emotion regulation strategies; the relationship between children's emotion regulation strategies and children's externalizing behaviour; and the relationship between children's use of external-dysfunctional strategies and their general well-being.

### **CHAPTER 3 - RESULTS**

### 3.1 Exploratory Data Analysis

Exploratory analysis of the data set was completed to check the quality of the data set. The minimum and maximum scores of all variables were observed to screen for any data entry errors. Additionally, each of the subscales of the questionnaire measures were observed and no significant outliers were identified. Consequently no data were excluded from the analysis.

#### 3.1.1 Descriptive Statistics - Child Emotion Regulation Styles (REQ)

**Table 5 – Summary Descriptive Statistics for all Children's Scores on the REQ**

SCALE	N	MIN	MAX	MEAN	SD
External-functional ER	39	2	5	3.2	0.7
External-dysfunctional ER	39	1	4	1.7	0.6
Internal-functional ER	39	1	5	2.9	0.8
Internal-dysfunctional ER	39	1	4	2.2	0.7

ER = emotion regulation

Group means indicate that children are more likely to use functional strategies than dysfunctional strategies. Specifically, they are most likely to use external-functional (EF) strategies, followed by internal-functional (IF), internal-dysfunctional (ID) and external-dysfunctional (ED), respectively.

#### 3.1.2 Distribution of Data

In order to check the distribution of the data set the Kolmogorov-Smirnov test was utilised. The results of this analysis can be seen in Table 6.

**Table 6 – Kolmogorov-Smirnov Test of Normal Distribution for Children and Mothers Scores on the REQ**

Group	Scale	Kolmogorov-Smirnov		
		Statistic	Df	Sig
<b>CHILD</b>	EF	0.12	39	0.20
	ED	0.22	39	0.00
	IF	0.14	39	0.06
	ID	0.18	39	0.00
<b>MOTHER</b>	EF	0.14	37	0.20
	ED	1.17	37	0.13
	IF	0.21	37	0.01
	ID	0.18	37	0.06

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional

The above table demonstrates that the data were not normally distributed across all regulation styles. Children’s use of external-dysfunctional strategies deviate significantly from normal ( $p < 0.01$ ), as do children’s use of internal-dysfunctional strategies ( $p < 0.01$ ). Furthermore, mother’s use of internal-functional strategies deviates significantly from normal ( $p < 0.05$ ). In total, three of the eight scores were not normally distributed. In order to analyze the data using parametric tests a number of assumptions must be met (Coolican, 1994). These assumptions state that the data is at least interval level, the data are normally distributed and there is a homogeneity of variance. Almost half of the data in the sample did not meet the assumption of normality and therefore non parametric analyses were employed.

### **3.2 Child Emotion Regulation Styles –Analyses**

In order to establish whether there was a significant difference between the mean scores on this measure a Friedman's Test was completed. The results of the analysis indicated that there were significant differences in usage across the four emotion regulation styles (Chi-square = 52.34; df = 3;  $p < 0.001$ ).

A number of planned post-hoc comparisons were made to determine which styles differed significantly. A Wilcoxon signed rank test was employed. In order to prevent making a Type 1 error it was necessary to use a corrected alpha value. This was achieved by dividing  $\alpha$  by the number of comparisons ( $0.05/6$ ) which results in a corrected  $\alpha$  of 0.008. Taking into account the corrected alpha value, the results of the analysis indicated that there were significant differences across all four emotion regulation styles (see Table 7). External-functional (EF) strategies were used most commonly followed by internal-functional (IF), internal-dysfunctional (ID) and external-dysfunctional (ED), respectively.

**Table 7 – Wilcoxon Signed Rank Test of Comparisons of Children's Use of Emotion Regulation Strategies**

		N	Mean Rank	Sum of Ranks	Z	Asymp. Sig.
ED- EF	—Negative Ranks	36	21.21	763.5	-5.21	0.00
		3	5.5	16.5		
		0				
		39				
ID- IF	Negative Ranks	30	20.71	621.5	-3.64	0.00
		8	14.97	119.5		
		1				
		39				
IF-EF	—Negative Ranks	24	21.81	523.5	-2.9	0.03
		12	11.88	142.5		
		3				
		39				
ED-IF	Negative Ranks	33	21.95	7.24	-4.67	0.00
		6	9.25	55.5		
		0				
		30				
ID-EF	Negative Ranks	31	21.16	656	-4.59	0.00
		6	7.83	47		
		0				
		39				
ED-ID	Negative Ranks	28	21.14	592	-3.64	0.00
		9	12.83	111		
		2				
		39				

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional

### 3.2.1. Child Emotion Regulation Styles – Sex & Age Differences

The descriptive statistics show some mean variation in sex and age (see Table 8 & 10).

**Table 8 - Mean Scores for Boys and Girls Emotion Regulation Styles (REQ)**

	MALE	FEMALE
External-functional (EF)	3.1	3.3
External-dysfunct (ED)	1.7	1.8
Internal-functional (IF)	2.8	3.1
Internal-dysfunct (ID)	2.1	2.3

Table 8 demonstrates that there were slight mean differences across the four regulation styles, and there was a general trend indicating that boys and girls both used functional strategies more than dysfunctional strategies. In order to determine whether there were any significant differences between the sexes a Mann-Whitney test was employed. The results of the analysis revealed that there were no significant differences between the sexes across any of the four emotion regulation styles (see Table 9).

**Table 9 Mann-Whitney Test of Comparisons of Emotion Regulation Strategies (REQ) Between Boys and Girls**

Strategy	Group	N	Mean Rank.	Sum of Ranks	Mann-Whitney U	Z	Asymp. Sig
EF	Boys	23	18.37	422.5	146.5	-1.08	Ns
	Girls	16	22.34	357.5			
ED	Boys	23	19.83	456	180	-0.12	Ns
	Girls	16	20.25	324			
IF	Boys	23	18.70	430	154	-0.86	Ns
	Girls	16	21.88	350			
ID	Boys	23	19.11	439.5	163	-.59	Ns
	Girls	16	21.28	340.5			

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional  
 ns = non-significant

Table 10 below indicates some variation in the mean scores across the three age

groups

**Table 10 - Mean Scores for Emotion Regulation Styles (REQ) Between Age Group**

AGE (Years)	NINE	TEN	ELEVEN
External-functional (EF)	3.2	3.4	3.1
External-dysfunct (ED)	1.6	1.7	1.8
Internal-functional (IF)	3.2	2.9	2.9
Internal-dysfunct (ID)	2	2.3	2.2

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional

Further analysis using the Kruskal-Wallis test indicated that there were no significant differences between the three age groups (see Table 11).

**Table 11 Kruskal-Wallis Test of Comparisons of Emotion Regulation Strategies (REQ) Between Nine, Ten and Eleven Year olds**

Strategy	Group	N	Mean Rank.	Chi-Square	Df	Asymp. Sig
EF	Nine	8	19.25	1.46	2	ns
	Ten	17	22.29			
	Eleven	14	17.36			
ED	Nine	8	14.56	2.56	2	ns
	Ten	17	20.91			
	Eleven	14	22.43			
IF	Nine	8	23.56	1.98	2	ns
	Ten	17	20.91			
	Eleven	14	16.86			
ID	Nine	8	16.31	2.30	2	ns
	Ten	17	23.00			
	Eleven	14	18.46			

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional  
 ns = non-significant

### 3.3. Mothers Emotion Regulation Styles

Table 12 indicates that mothers were most likely to use external-functional strategies followed by internal-functional, internal-dysfunctional and external-dysfunctional strategies, respectively.

**Table 12 – Summary Descriptive Statistics for Mother’s REQ Scores**

SCALE	N	MIN	MAX	MEAN	SD
External-functional (EF)	37	2	5	3.1	0.7
External-dysfunctional (ED)	37	1	3	1.6	0.5
Internal-functional (ID)	37	1	5	2.9	0.6
Internal-dysfunctional (IF)	37	1	3	1.9	0.7

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional

In order to determine whether there were significant differences in mothers use of emotion regulation styles a Friedman’s Test was completed. The results of this analysis indicate that the rankings differ significantly across the four emotion regulation styles (Chi-square = 60.65; df = 3;  $p < 0.001$ ).

A number of planned post-hoc comparisons were made to determine which styles differed significantly. A Wilcoxon signed rank test was employed. Again, in order to prevent making a Type 1 error it was necessary to use a corrected alpha value. This was achieved by dividing  $\alpha$  by the number of comparisons ( $0.05/6$ ) which results in a corrected  $\alpha$  of 0.008. The results of the analysis indicated that there were significant differences between all four emotion regulation styles, except internal-dysfunctional

and internal-functional strategies (see Table 13). The results indicate that EF strategies are used more commonly, followed by IF, ID and ED strategies, respectively.

**Table 13 - Wilcoxon Signed Rank Test of Comparisons of Mother's Use of Emotion Regulation Strategies**

	N	Mean Rank	Sum of Ranks	Z	Asymp. Sig.	
EF- ED Ranks	—Negative	36	19.44	700	-5.26	0.00
		1	3.00	3		
	Positive Ranks	0				
	Ties	37				
	Totals					
ID- IF	Negative Ranks	24	17.48	419.5	-1.72	0.086
	Positive Ranks	11	19.14	210.5		
	Ties	2				
	Totals	37				
IF-EF Ranks	—Negative	31	21.4	663.5	-4.71	0.00
		6	6.58	39.5		
	Positive Ranks	0				
	Ties	37				
	Totals					
ED-IF	Negative Ranks	3	5.67	17	-5.05	0.00
	Positive Ranks	34	20.18	686		
	Ties	0				
	Totals	37				
ID-EF	Negative Ranks	9	12.89	116	-3.13	0.002
	Positive Ranks	25	19.16	479		
	Ties	3				
	Totals	37				
ED-ID	Negative Ranks	30	22.23	667	-4.76	0.00
	Positive Ranks	7	5.14	36		
	Ties	0				
	Totals	37				

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional

Table 14 below indicates that there were slight mean differences between single mothers and coupled mothers use of emotion regulation strategies.

**Table 14 – Summary Descriptive Statistics for Single Mothers and Coupled Mothers REQ Scores**

Strategy	Group	N	Mean	SD
EF	Single mothers	16	3.09	0.81
	Coupled mothers	21	3.04	0.61
ED	Single mothers	16	1.46	0.56
	Coupled mothers	21	1.60	0.40
IF	Single mothers	16	2.92	0.49
	Coupled mothers	21	2.92	0.59
ID	Single mothers	16	1.96	0.75
	Coupled mothers	21	1.81	0.51

Further analysis using a Mann Whitney Test indicated that there were no significant differences between single mother’s use of emotion regulation strategies and coupled mother’s use (see Table 15).

**Table 15 - Mann-Whitney Test of Comparisons of Emotion Regulation Strategies (REQ) Between Single Mothers and Coupled Mothers**

Strategy	Group	N	Mean Rank.	Sum of Ranks	Mann-Whitney U	Z	Asymp. Sig
EF	Single	16	19.34	309.5	162.5	-0.17	Ns
	Coupled	21	18.74	393.5			
ED	Single	16	15.75	252	116	-1.63	Ns
	Coupled	21	21.48	451			
IF	Single	16	18.66	298.5	162.5	-0.17	Ns
	Coupled	21	19.26	404.5			
ID	Single	16	19.38	310	162	0.19	Ns
	Coupled	21	18.71	393			

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional  
 ns = non-significant

### **3.4 - Hypotheses**

The primary aim of this research was to determine whether there is a significant relationship between the emotion regulation strategies used by children and their parents. Due to insufficient father data, the following hypotheses specifically test the relationship between children and mothers use of emotion regulation strategies:

*Hypothesis 1 – There will be a significant positive correlation between child and mother external-functional strategies.*

*Hypothesis 2 – There will be a significant positive correlation between child and mother external-dysfunctional strategies.*

*Hypothesis 3 – There will be a significant positive correlation between child and mother internal-functional strategies.*

*Hypothesis 4 – There will be a significant positive correlation between child and mother internal-dysfunctional strategies.*

Spearman's correlations were completed to examine the associations between children's and mother's use of the four emotion regulation styles from the REQ.

**Table 16 – Correlations Between Children’s and Mother’s Emotion Regulation Styles (REQ)**

	Mother EF	Mother ED	Mother IF	Mother ID
Child EF Spearman correlation	0.18	0.05	0.04	0.02
Sig	0.32	0.75	0.82	0.87
N	37	37	37	37
Child ED Spearman correlation	-0.4*	0.4*	-0.31	0.19
Sig	0.01	0.01	0.06	0.25
N	37	37	37	37
Child IF Spearman correlation	0.38*	-0.03	0.38*	0.12
Sig	0.02	0.84	0.02	0.5
N	37	37	37	37
Child ID Spearman correlation	0.01	0.14	-0.13	0.16
Sig	0.97	0.4	0.44	0.34
N	37	37	37	37

EF = External-functional, ED = External-dysfunctional, IF = Internal-functional, ID = Internal-dysfunctional

\* Correlation is significant at the 0.05 level

*Hypothesis 1*

Table 16 indicates that there were no significant correlations between children’s use of external-functional strategies and mother’s use of external-functional strategies.

### *Hypothesis 2*

Table 16 shows that there were significant correlations between children's use of external-dysfunctional strategies and mother's use of external-dysfunctional strategies ( $r=0.4$ ,  $p<0.05$ ). As children's use of this strategy increases so does mother's use of the strategy.

### *Hypothesis 3*

Table 16 demonstrates that children's and mother's internal-functional scores were significantly correlated ( $r=0.39$ ,  $p<0.05$ ) and evidence is provided to support the third hypothesis.

### *Hypothesis 4*

The results from Table 16 indicate that there were no significant correlations between children's use of internal-dysfunctional strategies and mother's use of these strategies. The results therefore do not support the fourth hypothesis.

A further aim of this research was to establish whether there was a significant relationship between children's emotional and behavioural problems and the use of external-dysfunctional emotion regulation strategies. In order to explore this, the following hypotheses were tested:

*Hypothesis 5* – There will be a significant positive correlation between children's

scores on the external-dysfunctional emotion regulation scale (REQ) and scores on the conduct problems scale (SDQ).

*Hypothesis 6* – There will be a significant correlation between children’s scores on the external-dysfunctional emotion regulation scale (REQ) and scores of general well-being (SDQ & KIDSCREEN-10).

In order to test these hypotheses Spearman correlation analyses were completed between children’s scores on the REQ, SDQ and KIDSCREEN-10 (See Table 19).

**Table 17 – Correlations between Children’s scores on the REQ and SDQ & KIDSREEN-10**

	External-functional ER	External- dysfunctional ER	Internal-functional ER	Internal-dys-functional ER
SDQ:emotional symptoms	-0.0	0.5**	0.0	0.2
SDQ:conduct problems	0.1	0.6**	0.1	0.3
SDQ:hyperactivity	0.2	0.0	0.1	0.8
SDQ:peer problems	-0.0	0.5**	0.0	0.1
SDQ:pro-social behaviour	-0.1	0.5**	-0.1	0.3*
KIDSCREEN-10:child wellbeing	0.2	-0.1	0.0	-0.3

ER = Emotion Regulation

\*\* Correlation is significant at the 0.01 level

\* Correlation is significant at the 0.05 level

The results show that children's external-dysfunctional emotion regulation strategies were significantly correlated with conduct problems ( $r = 0.6, p < 0.01$ ). The positive correlations indicated that as children's use of external-dysfunctional emotion regulation strategies increases, so did their conduct problems. As a result hypothesis five can be supported.

The results also indicated that children's use of external-dysfunctional strategies were significantly associated with emotional symptoms ( $p < 0.01$ ), peer problems ( $p < 0.01$ ) and pro-social behaviour ( $p < 0.01$ ). As children's use of external-dysfunctional strategies increases their emotional symptoms and peer problems also increase. Conversely, as external-dysfunctional strategies increase, pro-social behaviour decreases.

**Finally, the research was also interested in whether there was an association between children's use of external-dysfunctional strategies and their general well-being. Children's well-being was measured in two ways: parental report (*emotional symptoms* dimension on the SDQ) and child report (KIDSCREEN-10).**

The results indicated that children's use of external-dysfunctional strategies were significantly correlated with parental report of child well-being ( $r = 0.5, p < 0.01$ ). A positive correlations coefficient indicates that as children's use of external-dysfunctional strategies increases, their emotional distress also increases. Children's self- report of well-being was not found to be significantly

correlated with the use of external-dysfunctional strategies ( $r = -0.1, p > 0.05$ ). The results indicate that hypothesis six can be partially supported, as parental report suggests that there is a relationship between children's external-dysfunctional strategies and increased emotional distress.

## **CHAPTER 4 - DISCUSSION**

This research set out to explore if there is a relationship between how children and parents regulate their emotions. The researcher was particularly interested in children and parents use of external-dysfunctional strategies however both functional and dysfunctional strategies were investigated. Unfortunately, insufficient data was collected for fathers, and the following discussion only pertains to the relationship between children and mothers emotion regulation strategies. .

The results varied, indicating that certain emotion regulation strategies were correlated between children and mothers, while others were not. The results of each experimental hypothesis will be discussed in turn.

### ***4.1. General findings***

In line with other studies (Band & Weisz., 1988; Brodzinsky., 1992; Brown., 1985;

Spirito *et al.*, 1991; Phillips & Power, 2007) the results suggest that children use a variety of emotion regulation strategies. Children commonly use external-functional strategies, followed by internal-functional, internal-dysfunctional and external-dysfunctional strategies, respectively. These results support previous research (Phillips & Power, 2007) which reported similar findings with adolescents. Given that participants were recruited from a relatively healthy non-clinical population; one would expect that functional strategies would be used more frequently than dysfunctional strategies.

As other research suggests (Brown *et al.*, 1986; Band & Wiesz, 1988), the results did not show any gender differences across the four emotion regulation styles. However, the results were obtained from a non-clinical population, and sex differences in emotion regulation styles may be more evident in a clinical population (Loeber & Hay, 1997). Differences in emotion regulation styles across the three age groups were minimal and non-significant. One explanation may be that the children in this study were between the ages of 9 to 11 and therefore at a similar developmental level, both cognitively (Piaget, 1952) and emotionally (Erikson, 1977). Differences in emotion regulation styles are likely to be more evident in younger children (6-8 years) and adolescents (Band & Weisz, 1988; Brown *et al.*, 1986).

Mothers also use a variety of emotion regulation styles; with functional strategies being used more commonly than dysfunctional strategies. Specifically, the results indicate that mothers generally employ external-functional strategies, followed by internal-functional, internal-dysfunctional and external-dysfunctional strategies, respectively.

## **4.2. Hypotheses**

A number of hypotheses were tested to explore the relationship between children and mothers emotion regulation strategies. The results of each hypothesis will be discussed below.

### **4.2.1. Hypothesis 1**

The first hypothesis set out to investigate if there is a relationship between children and mothers use of external-functional emotion regulation strategies. The results did not support this hypothesis and no significant correlation was found between the two. Although not significant, the results did indicate that there was a positive correlation between children and mothers use. The results show that overall the mean score and standard deviation are very similar for both children and mothers, and this suggests that there may be differences in the rank order of the data.

Although the results suggest that this is the most commonly used strategy amongst children and mothers, there is an explanation as to why they are not significantly correlated. It is argued that children's use of this strategy is more likely to be correlated with peers, rather than mothers. External-functional emotion regulation strategies often require that the person do something active (e.g. go out and play), and a child's opportunity to engage in these kinds of strategies may depend on their peer relations. For example, it is suggested that a child who regularly plays sports with their peers (e.g. football) is likely to engage in this activity as a means of self-regulating. Children between 9-11 years of age are moving towards the stage where peer relationships begin to have a greater influence on their behaviour, than mothers (Erikson, 1977). Children begin to copy the behaviour of their peers in an attempt to be included and accepted.

#### *4.2.2. Hypothesis 2*

The second hypothesis explored if there is a relationship between children and mothers use of external-dysfunctional emotion regulation strategies. External-dysfunctional strategies commonly involve the expression of overt aggressive behaviour, such as physically hitting others or physically damaging objects in the environment. The results from the study show a significant positive correlation between children and mothers, suggesting that as children's use of this strategy increases so do mothers' use.

Although external-dysfunction strategies are the least commonly used strategy by

children and mothers in a non-clinical population, it is anticipated that the mean scores would be much higher within a clinical population of children with conduct disorder.

Unfortunately the small numbers in this study prevented further analyses to explore whether there was a relationship between single mothers and children, and coupled mothers and children.

Given the high number of single mothers in this study, it is suggested that there are a number of explanations as to why the use of this strategy is positively correlated. External-dysfunctional emotion regulation strategies are the expression of overtly aggressive behaviours, and research suggests that family breakdown and marital discord have long been highlighted as significant risk factors for externalizing behaviour problems (Rutter *et al.*, 1970). Further, children from divorced families are estimated to be twice as likely to present with conduct problems (Maughan, 2001). Interestingly, Cummings *et al.* (1994) found similarities in children's and mothers' perceptions of marital discord, and suggested that children's characterized behaviour may be linked to their perceptions of the threat elicited in relation to marital discord.

In line with the Crick & Dodge (1994) theory of information processing, children and mothers' perceptions of threat may be a common factor in their use of external-dysfunctional emotion regulation strategies. That is, children and mothers who have experienced marital discord may be hypersensitive to threat and experience a

negative bias when processing information. It is acknowledged that this is a tentative statement given the lack of further analyses to support this claim.

It could also be argued that these children may have been exposed to aggression prior to, or during the family separation. Within this context, children's increasing use of external-dysfunctional strategies may be a reflection of the aggression which has been modeled by parental behaviour (Bandura, 1992).

Given the significant correlation between children and mothers external-dysfunctional emotion regulation strategies, it is argued that the intergenerational transmission of emotion regulatory processes may be more commonly transferred through the relationship with the mother. There may be a number of theoretical explanations for the relationship.

Firstly, mothers are usually the primary caregiver and foster the development of the attachment relationship. They support the child to develop the neurobiological foundation which will provide them with the capacity to regulate emotions (Bowlby, 1969; Cassidy, 1994). The mother's ability and availability to contain and effectively attune to their infant's emotional state are crucial in this process. It is argued that mothers who utilize dysfunctional emotion regulation strategies may themselves have a reduced capacity to perform these subtle functions. As such, infants of these mothers may receive less support to foster to the development of these crucial neurobiological pathways which facilitate effective emotion regulation.

Further, attachment theory suggests that there may be a relationship between child-parent attachment styles and subsequent regulation of emotional arousal; either showing a tendency to suppress (avoidant and dismissive attachment) emotions, or hyper-activate (ambivalent/anxious and preoccupied attachment) emotional arousal (Cassidy, 1994; Crowell *et al.*, 1991). The results from the study would support this assumption; mothers who show a tendency to hyper-activate emotional arousal may be more likely to have children who demonstrate a similar pattern of dysfunctional emotion regulation.

Main (1990) describes anxiously attached individuals as being in a state of confusion, ambivalence and incoherence when they are faced with threat. Anxious people are unable to utilize more adaptive ways of coping, as they are fixated on the negative aspects of the emotional experience. This fixation and hyper-activation of emotional arousal is designed to increase proximity with a partner or caregiver. At times the increased activation will succeed in getting the partner's / caregivers attention and this will provide some temporary relief and security. Cassidy and Berlin (1994) suggest that this partial reinforcement may explain the link between inconsistent parenting and the development of anxious attachment in early childhood.

Inconsistent parenting is another factor which could contribute to the correlation between child-parent external-dysfunctional emotion regulation strategies. Research suggests that inconsistent parenting (the inability to consistently set clear limits and expectations regarding a child's behaviour) is strongly linked to the development of coercive parent-child interactions (Patterson, 1992). Within a coercive interaction both the parent and the child employ external-dysfunctional emotion regulation

strategies (e.g. being verbally aggressive) in order to achieve one's goal. The parent uses aggression in an attempt to get the child to back down, and similarly, the child uses aggression to get the parent to back down, or give into their demands. The interaction usually ends when the parent gives in, and the child's aggression is negatively reinforced. For the child, this type of interaction becomes a functional expression of aggression, and it also provides a forum for external-dysfunctional behaviour to be modeled and reinforced by the caregiver (Bandura, 1992).

Parents may demonstrate inconsistent parenting for a number of reasons, and within this context it is argued that their inability to functionally and consistently regulate their own emotions is a significant factor. Evidence suggests that mothers of children with conduct problems are eight times more likely to relinquish to their child's demands than their counterparts (Garner, 1989). Mothers with a limited capacity to regulate their own negative emotions may find it harder to be consistent and set the limits and boundaries that are required to avoid coercive parent-child interactions.

The results from this study suggest that there is a positive correlation between children and mothers use of external-dysfunctional regulation strategies. Although these results are taken from a non-clinical population and external-dysfunctional strategies are the least commonly used, the results do suggest that children's use of this strategy will increase in line with parents. As such, caregiver emotion regulation strategies should be given greater consideration when developing interventions to reduce parent-child coercive interactions.

### *4.2.3. Hypothesis 3*

The third hypothesis explored whether there was a relationship between children and mothers use of internal-functional emotion regulation strategies. These strategies draw on internal resources to effectively process and facilitate goal directed behaviour. These strategies are believed to develop with age, in line with increasing cognitive development (Phillips & Power, 2007), and some variation between mothers and children would be expected.

The results from the present study support this hypothesis. There was a significant positive correlation between children's and mothers' use of internal-functional strategies.

Again, as highlighted above, one explanation for the correlation may be linked to the primary role that mothers tend to play in child development (Bandura, 1962; Cassidy, 1994). Internal-functional emotion regulation strategies are introduced at an early age in the form self-soothing dialogue from the parent (e.g. 'you're ok'). Laterally these strategies facilitate a degree of internalized control (Bornstein, 1995; Maccoby & Martin, 1983), as the child develops the capacity to utilize strategies such as positive self talk and positive reframing. Between the ages of 9-11 the mother may still be actively guiding the child's emotion regulation and continuing to prompt the child to employ functional internal strategies (e.g. 'why don't you think about something else'), as such the specific strategies employed by the mother are likely to be directly modeled to the child.

#### 4.2.4. Hypothesis 4

The fourth hypothesis investigated if there was a relationship between children and mothers use of internal-dysfunctional strategies. These strategies are characterised by rumination and suppression of emotional experiences. The results did not show a correlation between children and mothers use of this strategy, and therefore there was no support for this hypothesis. It could be argued that this strategy is less likely to be modeled than the other strategies, and therefore children may not observe and learn this strategy in the same way that others are modeled (Bandura, 1992). Further, internal-dysfunctional strategies often require a degree of analysis (e.g. reflective rumination) and children within this age group may not engage in such strategies until they enter adolescence (Band & Weisz, 1988; Brown *et al.*, 1986).

#### 4.2.5. Hypothesis 5

The fifth hypothesis explored the relationship between children's use of external-dysfunctional emotion regulation strategies and conduct problems (including disinhibited, aggressive and antisocial behaviour). Children with high levels of negative reactivity tend to demonstrate a more pronounced and aversive emotional reaction to environmental stimuli (Frick & Morris, 2004). The behavioural responses linked to these aversive emotional reactions often reflect the behaviours present in children with conduct problems. Indeed, the results of the present study further support the finding that there is a strong association between conduct problems and a reduced

capacity to functionally regulate emotions (Eisenberg *et al.*, 2001; Hubbard *et al.*, 2002; Silk *et al.*, 2003). Conduct problems were found to be significantly associated with external-dysfunctional emotion regulation strategies.

The present study also provides evidence to support the finding that the use of external-dysfunctional strategies predicts poor peer relationships (Eisenberg & Fabes, 1992) and emotional difficulties (Phillips & Power, 2007). Reactive-aggressive children have been shown to attribute negative intentions in others and selectively attend to signs of hostility in their environment (Crick & Dodge, 1996). The high levels of negative reactivity demonstrated in these children are believed to exacerbate and reinforce peer rejection and victimization (Dodge *et al.*, 1997). When conduct problems are associated with reactive aggression it is argued that this reflects an inability to regulate emotions, rather than a means of achieving one's goals as observed with instrumental aggression.

#### ***4.2.6 Hypothesis 6***

The research was also interested in the relationship between children's use of external-dysfunctional emotion regulation strategies and their general wellbeing. Previous research indicates that frequent use of external-dysfunctional strategies is associated with a reduced quality of life (QOL) (Phillips & Power, 2007).

The current study supports this assumption, as children's use of external-dysfunctional emotion regulation strategies was found to be significantly associated with an in-

crease in children's emotional distress (as reported by mothers). However, children's self-report of quality of life was not found to be significantly correlated with the use of external-dysfunctional strategies.

In summary, the results from the study indicate that there are some significant relationships between children and mothers emotion regulation strategies. Given that mothers are often the primary caregiver, it is argued that this adds further support to the importance of the attachment relationship; and the implications this has for children's emotional development and their capacity to functionally regulate emotions.

The study was specifically interested in children's use of external-dysfunctional strategies and their associated behaviour, and the results suggest that children with conduct problems are more likely to engage in the use of external-dysfunctional strategies; such as being verbally and physically aggressive towards others.

### **4.3. Implications for the treatment of conduct difficulties?**

Research suggests that the most effective treatment for children with conduct difficulties addresses individual and systemic factors (Henggler *et al.*, 1998)). In order to achieve sustainable and long term outcomes, interventions must support change at the individual level and also at the systemic level by addressing coercive parent-child interactions.

This study indicates that there is a relationship between mother's and children's use of external-dysfunctional emotion regulation strategies, and suggests that children's conduct problems may be maintained through coercive parent-child interactions. When developing interventions, greater consideration should be given to the family processes which facilitate the development of, and maintenance of conduct difficulties. Further, it is argued that interventions should not only seek to support children to develop more functional emotion regulation strategies, but also help mothers manage their own emotions more effectively. It is argued that mothers must first have the capacity to self-regulate before they can contain the negative emotions

expressed by their children, and thereby model more adaptive ways of coping.

For children of 12 years and younger the NICE Guidelines (NICE, 2006) recommend group based parent-training / education programmes in the management of children with conduct disorders. Whilst Triple P (Sanders *et al.*, 2003) and Webster-Stratton (Webster-Stratton, 2000) do teach parenting skills and support parents cognitive reappraisal of their children's problems, these programmes are not sufficiently individualized to assess and target parents' ability to implement these skills on a consistent basis. Parents who become easily over-whelmed and employ dysfunctional emotion regulation strategies will be less likely to consistently implement such skills. These programmes expect parents to develop skills without supporting them to develop the necessary emotional stability to cultivate these skills. As such, parents own difficulty managing their emotions may continue to be a particularly strong contributing or maintaining factor of extreme behaviour problems in their child.

Group based and individual parent-training / education programmes would be more effective if they established parents' capacity and ability to regulate emotions before work focused on the development of parenting skills. It is argued that parent-training programmes should incorporate the assessment and development of parental emotion regulatory strategies. This would allow parents to implement the skills they have developed in a more consistent manner and ensure that changes to parenting practices were sustainable and maintained. Given the current economic climate it is crucial that treatment programmes are cost efficient and achieve long term outcomes.

Current group based parent-training programmes are estimated to cost around £900 for a 2 hour session every week for 10 weeks (NICE, 2006). Although parent-training programmes may have to be extended to include work on parental emotion regulation, thus increasing the cost, this would remain cost efficient given that children with conduct disorders are estimated to cost the Government up to £70,000 up until the age of 28 years (Scott *et al.*, 2001).

#### **4.8. Limitations of the study**

Firstly, the small sample size in the present study is a significant limitation and has implications for the reliability and validity of the results. The small sample size was primarily due to difficulties in data collection. The strategy employed by the researcher relied too heavily on the motivation of parents to return completed questionnaires. Although the researcher collected all questionnaires completed by children, a number of parents failed to return completed questionnaires, and this resulted in a number of incomplete data sets. Although the results indicated that there were a number of interesting findings, the reliability of these results is reduced due to the small sample size.

Another significant limitation in the design of this study is the use of questionnaires. These are subjective measures and are often liable to social desirability bias (Sudman & Bradburn, 1982). Although children completed the questionnaires in isolation, the researcher noted on a number of occasions that children would look over to peers, and at times some children would attempt to engage their peers to determine the

responses they were giving. This suggests that some children may have been aware of giving the ‘correct’ response and children’s desire to please may have influenced the responses they made. In such cases, children may have reported a greater use of functional strategies than dysfunctional strategies. Both parents and children were made aware that all their responses would remain confidential however research suggests that this does little to limit the effect of social desirability bias (King & Bruner, 2009).

A further limitation was the generic use of the Regulation of Emotions Questionnaire (REQ). The REQ lacks specificity regarding how discrete emotions are regulated, and perhaps the researcher should have instructed participants to complete the REQ based on their regulation of anger.

It was noted that a number of children were confused about which emotion they should be considering when completing the REQ. For example, some children asked ‘should they consider how they regulated their emotions when they were anxious, or when they were angry?’ The researcher re-directed these children to the instructions on the REQ which stated that participants should complete the questionnaire considering a variety of emotions. As such, some children may have completed the REQ on the basis of how they regulate positive emotions, while others may have considered how they regulate negative emotions. Potentially this may lead to a bias in the reported use of functional or dysfunctional strategies. Future research may reduce the dependency on a questionnaire that requires a high degree of verbal comprehension and processing. This could be achieved by devising an interactive

method around a specific set of age appropriate scenarios or set of problems.

A further limitation of the study was that appropriate consent was not obtained for all participants. Consent for children to take part in the focus groups was sought from the Head Teacher at the chosen Primary school, however the researcher did not seek consent from the children's parents. The researcher is aware of the ethical implications of this, being especially mindful that a questionnaire asking about feelings (adapted REQ) may have elicited difficult emotions in the children. This was not given due consideration, and there may have been children completing the questionnaires who were experiencing difficult family circumstances or had additional mental health difficulties, which were unknown. Failing to seek consent meant that the researcher may have placed these children in a vulnerable position.

#### ***4.9. Directions for future research***

The present study was conducted with a non-clinical population, however despite this and the relatively small sample size the results still indicated that there were significant relationships between mother-child emotion regulation strategies. Future research could specifically investigate the relationship between parents and children's use external-dysfunctional emotion regulation strategies within a clinical population of those with conduct disorders. Furthermore, given the application of emotion regulation theory for internalizing problems, it may also be useful to examine the links between parents and children for clinical population children in terms of their emotion regulation strategies, particularly because this study did not find a direct positive correlation between mother and child internal dysfunctional strategies.

Although the participant numbers in this sample were not large enough to explore differences between single parents and coupled parents, this would be another area to explore in more depth. When individuals are under severe stress it is to be expected

that the degree to which they use functional coping strategies may be impaired. As discussed earlier children may observe the use of more external dysfunctional strategies during the period prior to a marital breakdown and this may be one explanation for the higher rates of emotional distress in children who have parents who are separated. Alternatively parents who use dysfunctional emotional regulation strategies may be more likely to experience relationship instability, consequently marital breakdown and emotional distress to their children may both be a consequence of poor emotion regulation.

Further, it is suggested that family factors should be investigated in more detail; specifically focusing on family breakdown, marital discord, and children's exposure to domestic violence. It is argued that these factors may be cyclical in nature; and children's exposure to marital conflict and domestic violence may have significant implications for parental modeling, children's development of internal working models and their subsequent processing of social information.

In conclusion, the area of Emotion Regulation is still in its infancy in terms of our knowledge and understanding. The results of this study suggest that there is a link between mother's and children's external dysfunctional regulation strategies and this has potential implications for the types of parent-based interventions offered for children with conduct problems in middle childhood. We still have some way to go in terms of understanding the mechanism by which children adopt other emotion regulation strategies and we also have to take into account the relative impact of differing caregiver relationships on the development of a child's emotion regulation

strategies.

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## **APPENDIX 1**

### **ICD-10 Classification: Oppositional defiant disorder**

#### **F91.3 Oppositional Defiant Disorder**

This type of conduct disorder is characteristically seen in children below the age of 9 or 10 years. It is defined by the *presence* of markedly defiant, disobedient, provocative behaviour and by the *absence* of more severe dissocial or aggressive acts that violate the law or the rights of others. The disorder requires that the overall criteria for F91 be met: even severely mischievous or naughty behaviour is not in itself sufficient for diagnosis. Many authorities consider that oppositional defiant patterns of behaviour represent a less severe type of conduct disorder, rather than a qualitatively distinct type. Research evidence is lacking on whether the distinction is qualitative or quantitative. However, findings suggest that, in so far as it is distinctive, this is true mainly or only in younger children. Caution should be employed in using this category, especially in the case of older children. Clinically significant conduct disorders in older children are usually accompanied by dissocial or aggressive behaviour that go beyond defiance, disobedience, or disruptiveness, although, not infrequently, they are preceded by oppositional defiant disorders at an earlier age. The category is included to reflect common diagnostic practice and to facilitate the classification of disorders occurring in young children.

#### **Diagnostic Guidelines**

The essential feature of this disorder is a pattern of persistently negativistic, hostile, defiant, provocative, and disruptive behaviour,

which is clearly outside the normal range of behaviour for a child of the same age in the same sociocultural context, and which does not include the more serious violations of the rights of others as reflected in the aggressive and dissocial behaviour specified for categories F91.0 and F91.2. Children with this disorder tend frequently and actively to defy adult requests or rules and deliberately to annoy other people. Usually they tend to be angry, resentful, and easily annoyed by other people whom they blame for their own mistakes or difficulties. They generally have a low frustration tolerance and readily lose their temper. Typically, their defiance has a

provocative quality, so that they initiate confrontations and generally exhibit excessive levels of rudeness, uncooperativeness, and resistance to authority.

Frequently, this behaviour is most evident in interactions with adults or peers whom the child knows well, and signs of the disorder may not be evident during a clinical interview.

The key distinction from other types of conduct disorder is the absence of behaviour that violates the law and the basic rights of others, such as theft, cruelty, bullying, assault, and destructiveness. The definite presence of any of the above would exclude the diagnosis. However, oppositional defiant behaviour, as outlined in the paragraph above, is often found in other types of conduct disorder. If another type (F91.0-F91.2) is present, it should be coded in preference to oppositional defiant disorder.

## **APPENDIX 2**

### **ICD-10 Classification: Conduct Disorder.**

#### **F91 Conduct Disorders**

Conduct disorders are characterized by a repetitive and persistent pattern of dissocial, aggressive, or defiant conduct. Such behaviour, when at its most extreme for the individual, should amount to major violations of age-appropriate social expectations, and is therefore more severe than ordinary childish mischief or adolescent rebelliousness. Isolated dissocial or criminal acts are not in themselves grounds for the diagnosis, which implies an enduring pattern of behaviour.

Features of conduct disorder can also be symptomatic of other psychiatric conditions, in which case the underlying diagnosis should be coded.

Disorders of conduct may in some cases proceed to dissocial personality disorder (F60.2). Conduct disorder is frequently associated with adverse psychosocial environments, including unsatisfactory family relationships and failure at school, and is more commonly noted in boys. Its distinction from emotional disorder is well validated; its separation from hyperactivity is less clear and there is often overlap.

#### **Diagnostic Guidelines**

Judgements concerning the presence of conduct disorder should take into account the child's developmental level. Temper tantrums, for example, are a normal part of a 3-year-old's development and their mere presence would not be grounds for diagnosis. Equally, the violation of other people's civic rights (as by violent crime) is not within the capacity of most 7-year-olds and so is not a necessary diagnostic criterion for that age group.

Examples of the behaviours on which the diagnosis is based include the following: excessive levels of fighting or bullying; cruelty to animals or other people; severe destructiveness to property; firesetting; stealing; repeated lying; truancy from school

and running away from home; unusually frequent and severe temper tantrums; defiant provocative behaviour; and persistent severe disobedience. Any one of these categories, if marked, is sufficient for the diagnosis, but isolated dissocial acts are not.

Exclusion criteria include uncommon but serious underlying conditions such as schizophrenia, mania, pervasive developmental disorder, hyperkinetic disorder, and depression.

This diagnosis is not recommended unless the duration of the behaviour described above has been 6 months or longer.

**Differential diagnosis.** Conduct disorder overlaps with other conditions. The coexistence of emotional disorders of childhood (F93.-) should lead to a diagnosis of mixed disorder of conduct and emotions (F92.-). If a case also meets the criteria for hyperkinetic disorder (F90.-), that condition should be diagnosed instead. However, milder or more situation-specific levels of overactivity and inattentiveness are common in children with conduct disorder, as are low self-esteem and minor emotional upsets; neither excludes the diagnosis.

### **F91.0 Conduct Disorder Confined To The Family Context**

This category comprises conduct disorders involving dissocial or aggressive behaviour (and not merely oppositional, defiant, disruptive behaviour) in which the abnormal behaviour is entirely, or almost entirely, confined to the home and/or to interactions with members of the nuclear family or immediate household. The disorder requires that the overall criteria for F91 be met; even severely disturbed parent - child relationships are not of themselves sufficient for diagnosis. There may be stealing from the home, often specifically focused on the money or possessions of one or two particular individuals. This may be accompanied by deliberately destructive behaviour, again often focused on specific family members—such as breaking of toys or ornaments, tearing of clothes, carving on furniture, or destruction of prized possessions. Violence against family members (but not others) and deliberate fire-setting confined to the home are also grounds for the diagnosis.

### **Diagnostic Guidelines**

Diagnosis requires that there be no significant conduct disturbance outside the family setting and that the child's social relationships outside the family be within the normal range.

In most cases these family-specific conduct disorders will have arisen in the context of some form of marked disturbance in the child's relationship with one or more members of the nuclear family. In some cases, for example, the disorder may have arisen in relation to conflict with a newly arrived step-parent. The nosological validity of this category remains uncertain, but it is possible that these highly situation-specific conduct disorders do not carry the generally poor prognosis associated with pervasive conduct disturbances.

#### **F91.1 Unsocialized Conduct Disorder**

This type of conduct disorder is characterized by the combination of persistent dissocial or aggressive behaviour (meeting the overall criteria for F91 and not merely comprising oppositional, defiant, disruptive behaviour), with a significant pervasive abnormality in the individual's relationships with other children.

### **Diagnostic Guidelines**

The lack of effective integration into a peer group constitutes the key distinction from "socialized" conduct disorders and this has precedence over all other differentiations. Disturbed peer relationships are evidenced chiefly by isolation from and/or rejection by or unpopularity with other children, and by a lack of close friends or of lasting empathic, reciprocal relationships with others in the same age group. Relationships with adults tend to be marked by discord, hostility, and resentment. Good relationships with adults can occur (although usually they lack a close, confiding quality) and, if present, do not rule out the diagnosis. Frequently, but not always, there is some associated emotional disturbance (but, if this is of a degree sufficient to meet the criteria of a mixed disorder, the code F92.- should be used).

Offending is characteristically (but not necessarily) solitary. Typical behaviours

comprise: bullying, excessive fighting, and (in older children) extortion or violent assault; excessive levels of disobedience, rudeness, uncooperativeness, and resistance to authority; severe temper tantrums and uncontrolled rages; destructiveness to property, fire-setting, and cruelty to animals and other children. Some isolated children, however, become involved in group offending. The nature of the offence is therefore less important in making the diagnosis than the quality of personal relationships.

The disorder is usually pervasive across situations but it may be most evident at school; specificity to situations other than the home is compatible with the diagnosis.

### **F91.2 Socialized Conduct Disorder**

This category applies to conduct disorders involving persistent dissocial or aggressive behaviour (meeting the overall criteria for F91 and not merely comprising oppositional, defiant, disruptive behaviour) occurring in individuals who are generally well integrated into their peer group.

#### **Diagnostic Guidelines**

The key differentiating feature is the presence of adequate, lasting friendships with others of roughly the same age. Often, but not always, the peer group will consist of other youngsters involved in delinquent or dissocial activities (in which case the child's socially unacceptable conduct may well be approved by the peer group and regulated by the subculture to which it belongs). However, this is not a necessary requirement for the diagnosis: the child may form part of a nondelinquent peer group with his or her dissocial behaviour taking place outside this context. If the dissocial behaviour involves bullying in particular, there may be disturbed relationships with victims or some other children. Again, this does not invalidate the diagnosis provided that the child has some peer group to which he or she is loyal and which involves lasting friendships.

Relationships with adults in authority tend to be poor but there may be good

relationships with others. Emotional disturbances are usually minimal. The conduct disturbance may or may not include the family setting but if it is confined to the home the diagnosis is excluded. Often the disorder is most evident outside the family context and specificity to the school (or other extrafamilial setting) is compatible with the diagnosis.

## **APPENDIX 3**

### **Ethical Approval**

#### **Correspondence from the University of Edinburgh**

Re: Thesis Proposal  
Ethel Quayle [Ethel.Quayle@ed.ac.uk]

You replied on 10/07/2009 12:37.

Sent: 20 January 2009 12:09

To: [alicewalker \[alicewalker@nhs.net\]](mailto:alicewalker@nhs.net)

Cc: [Eleanor.Sutton \[Eleanor.Sutton@ed.ac.uk\]](mailto:Eleanor.Sutton@ed.ac.uk)

Attachments:

Dear Alice,

Thank you for resubmitting your ethics proposal. I have looked at the changes made and am happy that you followed through on the recommendations made by the panel.

Best wishes,

Ethel

Dr. Ethel Quayle, COPINE Research,  
Clinical & Health Psychology  
School of Health in Social Science  
University of Edinburgh  
Teviot Place  
Edinburgh  
EH8 9AG

Tel: +44 (0)131 651 3980

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Email: Ethel.Quayle@ed.ac.uk: [quayleethel@gmail.com](mailto:quayleethel@gmail.com)

## APPENDIX 4

### Original Regulation of Emotion Questionnaire (REQ)

#### Regulation of Emotion Questionnaire

We all experience lots of different feelings or emotions. For example, different things in our lives make us feel happy, sad, angry and so on...

The following questions ask you to think about **how often** you do certain things **in response to your emotions**. You do not have to think about specific emotions but just how often you **generally** do the things listed below.

Please tick the box corresponding to the answer that fits best. We all respond to our emotions in different ways so there are no right or wrong answers.

In <b>GENERAL</b> how do you respond to your emotions?					
	N	S	C	V	A
2. I talk to someone about how I feel	<input type="radio"/>				
3. I take my feelings out on others verbally (e.g. shouting, arguing)	<input type="radio"/>				
4. I seek physical contact from friends or family (e.g. a hug, hold hands)	<input type="radio"/>				
5. I review (rethink) my thoughts or beliefs	<input type="radio"/>				
6. I harm or punish myself in some way	<input type="radio"/>				
7. I do something energetic (e.g. play sport, go for a walk)	<input type="radio"/>				

8. I dwell on my thoughts and feelings (e.g. It goes round and round in my head and I can't stop it)	○	○	○	○	○
---	---	---	---	---	---

In **GENERAL** how do you respond to your emotions?

	N	S	O	V	A
9. I ask others for advice	<input type="radio"/>				
10. I review (rethink) my goals or plans	<input type="radio"/>				
11. I take my feelings out on others physically (e.g. fighting, lashing out)	<input type="radio"/>				
12. I put the situation into perspective	<input type="radio"/>				
13. I concentrate on a pleasant activity	<input type="radio"/>				
14. I try to make others feel bad (e.g. being rude, ignoring them)	<input type="radio"/>				
15. I think about people better off and make myself feel worse	<input type="radio"/>				
16. I keep the feeling locked up inside	<input type="radio"/>				
17. I plan what I could do better next time	<input type="radio"/>				
18. I bully other people (e.g. saying nasty things to them, hitting them)	<input type="radio"/>				
19. I take my feelings out on objects around me (e.g. I damage objects or break things)	<input type="radio"/>				
20. Things feel unreal (e.g. I feel strange, things around me feel strange, I daydream)	<input type="radio"/>				

21. I telephone friends or family	<input type="radio"/>				
22. I go out and do something nice (e.g. cinema, shopping, go for a meal, meet people)	<input type="radio"/>				

**APPENDIX 5**

**Child REQ - 1<sup>st</sup> Adaptation**

Age \_\_\_\_\_

Please Circle:

Boy

Girl

We all experience lots of different feelings or emotions. For example, different things in our lives make us feel happy, sad, angry and so on...



Happy



Nervous



Sad



Angry

The following questions ask you to think about **how often** you do certain things **in response to your emotions**. You do not have to think about specific emotions but just how often you **generally** do the things listed below.

Please tick the box that fits you best best. We all respond to our emotions in different ways so there are no right or wrong answers.

In GENERAL how do you respond to your emotions?					
	N	N	C	V	A
1. I talk to someone about how I feel	<input type="radio"/>				
2. I shout or argue with other people	<input type="radio"/>				
3. I get a hug or hold hands with a friend or someone in my family	<input type="radio"/>				
4. I talk to myself to make myself feel better	<input type="radio"/>				

5. I hurt myself in some way	<input type="radio"/>				
6. I do something active like play a sport or go for a walk	<input type="radio"/>				
7. I keep thinking over and over things in my head, and I can't stop	<input type="radio"/>				

**In GENERAL how do you respond to your emotions?**

	N	S	C	V	A
8. I ask others for help	<input type="radio"/>				
9. I remind myself what my goals or plans are	<input type="radio"/>				
10. I take my feelings out on people – I fight with other people	<input type="radio"/>				
11. I ask someone (like my parents) if things are as important as I think they are	<input type="radio"/>				
12. I think about nice things	<input type="radio"/>				
13. I try to make other people feel bad (like being rude, ignoring them)	<input type="radio"/>				
14. I think about people better off and make myself feel worse	<input type="radio"/>				
15. I keep the feeling locked up inside	<input type="radio"/>				
16. I think about what I could do better next time	<input type="radio"/>				
17. I bully other people (e.g. saying nasty things to them, hitting them)	<input type="radio"/>				
18. I take my feelings out on things around me (like breaking something, school or outdoor things))	<input type="radio"/>				
19. Things feel strange or I daydream (e.g. I feel strange, things around me feel strange, I daydream)	<input type="radio"/>				

20. I telephone friends or family	<input type="radio"/>				
21. I go out and do something nice (like play with my friends)	<input type="radio"/>				

Thank you for your help.

**APPENDIX 6**

**Child REQ – 2<sup>nd</sup> Adaptation**

Age \_\_\_\_\_

Please Circle:

Boy

Girl

We all experience lots of different feelings or emotions. For example, different things in our lives make us feel happy, sad, angry and so on...



Happy



Nervous



Sad



Angry

The following questions ask you to think about **how often** you do certain things **in response to your emotions**. You do not have to think about specific emotions but just how often you **generally** do the things listed below.

Please tick the box that fits you best best. We all respond to our emotions in different ways so there are no right or wrong answers.

In GENERAL how do you respond to your emotions?					
	N	N	C	V	A
6. I talk to someone about how I feel	<input type="radio"/>				
7. I shout or argue with other people	<input type="radio"/>				
8. I get a hug or hold hands with a friend or someone in my family	<input type="radio"/>				

9. I talk to myself to make myself feel better	<input type="radio"/>				
10. I hurt myself in some way	<input type="radio"/>				
6. I do something active like play a sport or go for a walk	<input type="radio"/>				
7. I keep thinking over and over things in my head, and I can't stop	<input type="radio"/>				

**In GENERAL how do you respond to your emotions?**

	N	S	C	V	A
8. I ask others for help	<input type="radio"/>				
9. I remind myself what my goals or plans are	<input type="radio"/>				
10. I take my feelings out on people – I fight with other people	<input type="radio"/>				
12. I think about nice things	<input type="radio"/>				
13. I try to make other people feel bad (like being rude, ignoring them)	<input type="radio"/>				
14. I think about people better off and make myself feel worse	<input type="radio"/>				
15. I keep the feeling locked up inside	<input type="radio"/>				
16. I think about what I could do better next time	<input type="radio"/>				
17. I bully other people (e.g. saying nasty things to them, hitting them)	<input type="radio"/>				
18. I take my feelings out on things around me (like breaking something, school or outdoor things)	<input type="radio"/>				
19. Things feel strange or I daydream (e.g. I feel strange, things around me feel	<input type="radio"/>				

20. I telephone friends or family	<input type="radio"/>				
21. I go out and do something nice (like play with my friends)	<input type="radio"/>				

## **APPENDIX 7**

### **Parent Information Sheet**

#### **PARENT INFORMATION SHEET**

#### **Research: How do we cope with our feelings?**

We would like to invite you to take part in a research study. Before you decide we would like you to know:

- why the research is being done
- what you would need to do

Please take time to read the following information carefully.

#### **Purpose of the study**

This study is to help us understand:

- 23. how children cope with different feelings
- 24. how parents cope with different feelings
- 25. if parents and children cope with feelings in the same ways
- 26. if there is a relationship between how children cope with their feelings and their behaviour?

It is hoped that this research may help us to develop better ways of working with children who have difficulty managing strong feelings.

You and your child (children) have been chosen, as your child (children) fall(s) within the age range that we are interested in.

Taking part in the study is completely voluntary - it is up to you to decide.

If you would like take part, we will now:

- 2. describe what we would like you to do
- 3. ask you to sign the consent form included (to show that you and your child have agreed to take part)

You are free to stop taking part in the study at any time - without giving a reason.

## **What will you need to do to take part in the study?**

If you and your child would like to take part in this study you will need to:

- **sign** and send back the **consent form** to your child's school (you can give it to your child to take back)
- show the 'Child Information Sheet' to your child.

## **What will happen next?**

- We will arrange a date with your child's school
- We will visit your child's school and give your child two questionnaires to fill in
- One questionnaire will ask about how they cope with different feelings, and a second will ask about your child's general well-being
- Your child will then be given questionnaires (two per parent) to take home for you to fill in

## **Your Questionnaires.....**

- One questionnaire will ask you about how you cope with different kinds of feelings
- The second questionnaire will ask you about your child's behaviour
- It should take about 10-15 minutes to fill in both questionnaires
- It should be noted that we won't be able to identify parents or children from the questionnaires. So, if filling in the questionnaires raises any concerns about your child, please contact your GP.

We will assume that there may be more than one parent at home. Therefore, two sets of questionnaires will be given to each family. Please ignore the second set if you are the only carer for your child.

You will be given a stamped addressed envelope to return the questionnaires in.

All the questionnaires will be anonymous to make sure everything is confidential.

***All parents and children wishing to take part in the study will be entered into a prize draw with the chance of winning £50 voucher for Toys R Us.***

If you have any questions, please do not hesitate to contact Alice Walker (Trainee Clinical Psychologist) on 01224 553268.

Thank you taking the time to read this information sheet.

## APPENDIX 8

### Child Information Sheet

#### Child Information Sheet

**Study:** How do we cope with our feelings?

Research is a way that we can try to find out the answers to things.

**What would we like to know?**

We would like to know what children do when they have different feelings, like

when they are happy  or when they are sad .

**You might like to some things too, like.....**

Why have I been asked to take part in this study?

**Answer:**

You have been asked to take part because we would like to know what children do when they have different feelings. Also, we would like to know about children who are between 9-11 years old.

What will happen if I take part in the study?

**Answer:**

The study will take place at your school. You and all the other children who would like to take part in the study will be asked about your feelings. You will write these down on a piece of paper. The piece of paper will not have your name on it - this way no-one else will know which ones are your answers.



We will also give you an envelope to take home to your parents so that they can tell us about their feelings.

If you decide that you don't want to do the research anymore, just tell your parents.

Thank you 😊

**APPENDIX 9**

**CONSENT FORM**

**Title of Project:** How do we cope with our feelings?

**Name of Researcher:** Alice Walker

Please Tick

I confirm that I have read and understand the information sheet for the above study.

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.

I agree to take part in the above study

\_\_\_\_\_  
Name of Parent

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Name of Child

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature



