

Examining the influence of parental emotion socialisation and parent emotion  
regulation on child emotion regulation

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## **UCL Doctorate in Clinical Psychology**

### **Thesis declaration form**

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Signature:

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## Overview

The development of emotion regulation has been the focus of much research due to its long-term impact on an individual's wellbeing and mental health. Parents often play a crucial role in fostering the development of emotion regulation in their children. This thesis seeks to understand the influence of two parent factors: emotion socialisation and emotion regulation on children's emotion regulatory abilities in three parts.

Part One of the thesis is a systematic review of the existing literature that examines the relationship between parental emotion socialisation practices and child emotion regulation. The studies suggest that supportive emotion socialisation is associated with better child emotion regulation, and unsupportive emotion socialisation is associated with poorer child emotion regulation, indicating the importance of parents' emotion socialisation practices in the development of their children's regulatory abilities.

Part Two of the thesis is an empirical paper examining the relationship between parent and child emotion regulation. Children were observed across three time-points on two emotion regulatory tasks (fear and anger episodes, Lab-TAB). The raw data for the fear episode was jointly managed with Nikki Lim-Ashworth, another trainee. Parent emotion regulation strategies that worsen others' emotions predicted reduced child emotion reactivity in the fear episode and an increased use of redirected action strategies in the anger episode. Parent emotion regulation was also found to have a significant relationship with their emotion socialisation practices.

The final part of the thesis is a critical appraisal discussing the research rationale. It explores the process of undertaking this project and raises additional clinical and research implications of the findings.

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## **Part 1: Systematic Literature Review**

**A review of studies examining the relationship between parental emotion socialisation  
and child emotion regulation**

## **Abstract**

The development of emotion regulation has been the focus of much research due to its long-term impact on an individual's wellbeing and mental health. The influence of parents and their socialisation practices have been studied within the context of child socio-emotion regulatory abilities. Despite the expanding body of research examining the association between a parent's emotion socialisation practices and the development of emotion regulation in children, there is a lack of reviews summarising what has been found in the recent years.

**Aims:** This review evaluates research addressing the association between parental emotion socialisation and children's emotion regulatory abilities.

**Method:** Studies that focused on parental emotion socialisation and child emotion regulation were identified through computerised searches of the databases PsychINFO and Medline. Only studies published in English and peer-reviewed journals were included.

**Results:** 15 studies examining the two variables were identified. These studies examined supportive and unsupportive parental emotion socialisation variables separately in relation to child emotion regulation. There was a general finding of a significant positive relationship between supportive emotion socialisation and child emotion regulation, and a significant negative relationship between unsupportive emotion socialisation and child emotion regulation.

**Conclusion:** Findings from this review indicate that supportive socialisation responses are associated with better child emotion regulation, whilst unsupportive socialisation responses are associated with poorer child emotion regulation. The results suggest that parents could aim to nurture their children's regulatory abilities through the use of supportive emotion socialisation and reducing the use of unsupportive emotion socialisation in response to their child's display of emotions.

**Keywords:** Child, Parent, Emotion Regulation and Emotion Socialisation

## Introduction

According to Carson (1988), the parenting task of teaching knowledge is only half as essential as teaching about feelings. She elaborated, “if facts are the seeds that later produce knowledge and wisdom, then emotions and the impressions of the senses are the fertile soil in which the seeds must grow.” One step beyond learning what feelings are is the learning of how to manage, or regulate, them. Parents play a crucial part in this, taking on the role as a child’s first teachers of emotion regulation.

Emotion regulation can be broadly conceptualised as the ability to manage emotional reactions, and in turn, enable adaptive responses in an emotion-eliciting situation (Halligan et al., 2013). Emotion regulatory abilities emerge in infancy and develop rapidly in an individual’s early years. As children internalise the beliefs and standards presented to them in their immediate environment, they develop emotion understanding and regulatory skills through observing, modelling and experimenting with adaptive and maladaptive ways of emotion coping. A range of studies suggests that the development of emotion regulatory skills is an important part of growing up, with implications for a myriad of outcomes (Contreras, Kerns, Weimer, Gentzler & Tomich, 2000; Feng et al., 2009; Halligan et al., 2013; Graziano, Reavis, Keane & Calkins, 2007; Richards, Butler & Gross, 2003; Suveg & Zeman, 2004).

For example, in early childhood, emotion regulation abilities have been found to have an impact on academic achievement (Graziano et al., 2007) and externalising behaviours (Halligan et al., 2013). In middle childhood, emotion regulatory abilities were found to affect peer relationships (Contreras et al., 2000) and psychopathology (Feng et al., 2009; Suveg & Zeman, 2004). In young adulthood, emotion regulatory abilities have been found to influence the quality of romantic relationships (Richards et al., 2003). Considering the impact of emotion regulation on a person’s life experience, it is imperative to understand the possible factors that influence the development of emotion regulation.

A wide range of factors is thought to influence the development of emotion regulation. Within the individual, a person’s neurophysiology, temperament and cognitive

abilities are purported to influence the development of emotion regulation (Eisenberg & Morris, 2002; Goldsmith & Davidson, 2004). External factors also come into play in emotion regulation development. According to Zeman, Cassano and Adrian (2013), it is essential to also consider the child's broader sociocultural context and recognise the impact of familial interactions on the child's developing emotion regulatory abilities. The interest of this review is the influence of parents on the development of emotion regulation.

### **Parental Influence on Child Emotion Regulation**

Children learn how to regulate their emotional responses through interactions with their most immediate social environment – usually their parents (Thompson, 1994; Spinrad, Stifter, Donelan-McCall & Turner, 2004). Caregivers' approaches and responses to children's emotions often shape the intensity and duration of the child's emotional experience (Thompson & Meyer, 2007). As children build on their understanding of emotions and its regulation, they go on to develop their own emotion regulatory abilities as they internalise their parents' responses, appraisals and management of their emotions, underscoring the central role of parental responses in the development of emotion regulation.

Different parental factors come into play when shaping the development of their children's emotion regulatory abilities. Lundell, Grusec, McShane and Davidov (2008) reported that mothers who could both understand their child's behaviour and anticipate their reactions in emotion situations were found to be better at considering different explanations for their child's behaviour. This in turn, allows the parent to provide more appropriate support to their child's regulation of emotion during challenging situations. Morris, Silk, Steinberg, Myers and Robinson (2007) added that during such situations, parents primarily play the part of a role model – to display appropriate ways to manage emotions – and the part of a teacher – through the provision of direct and indirect feedback to their children. In particular, parents' choice of responses to their child's behaviour has been purported to be crucial in the development of their children's emotion regulation capacities (Belsky, Fearon & Bell, 2007; Kopp, 1989). In other words, parents have an active role to play in the cultivation

of their children's understanding and management of emotions. These parental factors have been discussed within the umbrella term of parental emotion socialisation.

### **Parental Emotion Socialisation**

Parental factors that come together to influence and nurture a child's emotion regulation abilities have been discussed within the literature on parental emotion socialisation (Thompson & Meyer, 2007). Emotion socialisation was first conceptualised in a review by Eisenberg, Cumberland and Spinrad (1998) and the construct included the following parental factors: parents' emotion expression, parents' responses to child's emotional experiences and the coaching of appropriate emotional responses. According to Thompson and Meyer (2007), parental emotion socialisation practices could be split into two broad categories: implicit and explicit socialisation practices in response to children's display of emotions. Implicit socialisation practices include parents as social references or models for managing emotional situations, parental expressed emotions and parents' emotion availability to respond sensitively to children's needs. On the other hand, explicit socialisation practices include parents' direct responses to alter a child's emotional experience. This could be through emotion discourse, where parents have conversations with their child about the emotional events, or emotion coaching, where parents label, validate and/or problem-solve children's internal processes such as their emotions or motivations. Explicit socialisation practices are similar to the construct of active emotion socialisation conceptualised by Eisenberg et al. (1998) in their review. The authors elaborated that active (or explicit) socialisation practices would include the collection of behaviours that parents choose and exhibit intentionally, with the intention of communicating appropriate values and goals regarding specific emotions.

The quality of parents' explicit responses towards children's display of emotions can be categorised into two distinct types: supportive and unsupportive responses. Features of supportive emotion socialisation responses include parental reactions that focus on the child's emotional experience, teaching the child the means of solving distressing problems and nurturing the child's emotion literacy and competency (Eisenberg et al., 1998).

Conversely, unsupportive emotion socialisation responses include parental reactions that invalidate the child's emotion experience, communicating that emotional displays are undesirable and do not provide any solutions for lowering or managing emotion arousal (Eisenberg et al., 1998).

The construct of emotion socialisation is one of many aspects of parenting as discussed within the parenting literature. When considering the role of parents on child development, it is important to acknowledge that parental factors do interact through complex processes to influence child development. For example, factors such as parental expressivity, parental emotion reactions and parental control over their emotions as perceived by the child could serve as social models. Thus, children learn information regarding the appropriateness of their displayed reactions in response to their internal state in stressful situations. Morris et al. (2007) similarly identified several parenting factors that could play an important role in nurturing the development of emotion regulation, which has been included below in Figure 1. It is to be noted that the dotted line in the figure attempts to distinguish the parenting factors that fall within the remit of emotion socialisation that could also have an influence on child emotion regulation. However, it is important to keep in consideration that within the research literature, the mechanisms of how these parenting factors could influence children's development of emotion regulation do overlap.

Parenting tasks are complex and a clearer understanding of what would be helpful in nurturing the development of emotion regulation in children can help to inform parents' responses to children during emotionally charged situations. For example, for parents who opt to respond to their children using encouraging, emotion-focused and problem-focused emotion socialisation practices, are these practices associated with better emotion regulation outcomes? Implicit and explicit emotion socialisation practices are different aspects of the construct. Implicit emotion socialisation variables, such as parental emotion expression or parents' emotion availability, tend to be spontaneous, especially during emotionally demanding situations, and thus is not the interest of the review. This review seeks to



understand parents' intentional emotion socialisation efforts, and their associations with child emotion regulation.

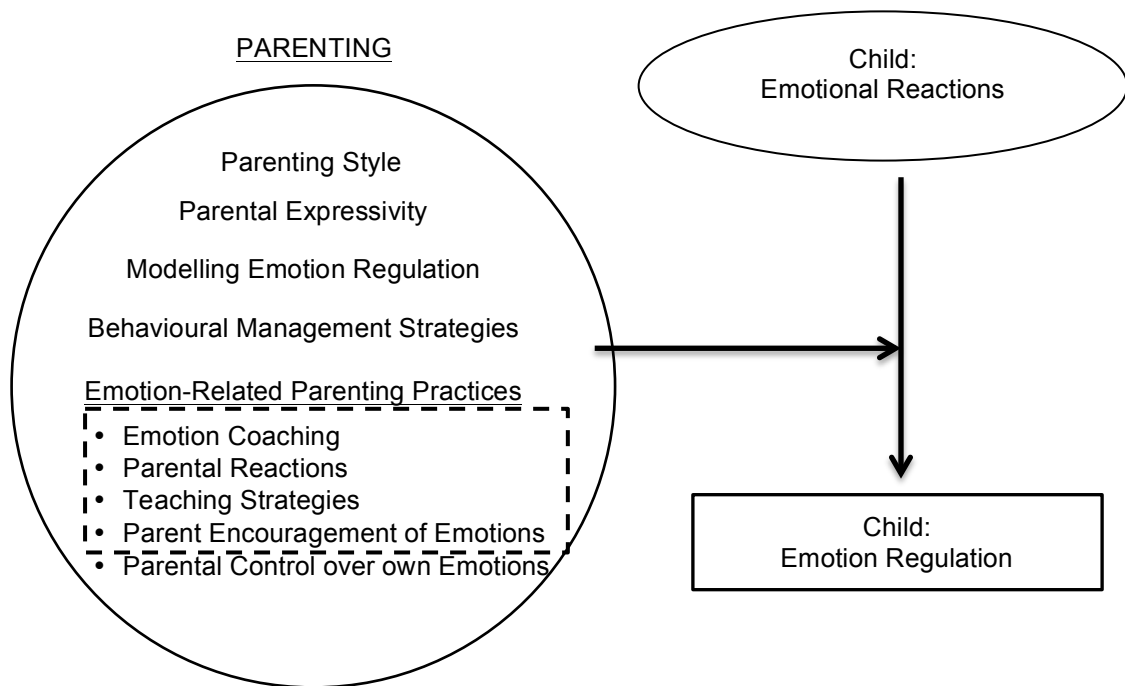


Figure 1: Aspects of parenting related to the development of emotion regulation strategies in children

### **Aims and Objectives**

Considering the recent research focus on the impact of parental emotion socialisation practices on children's emotion regulatory abilities, there is a dearth of systematic reviews examining the results from these studies. This review aims to look at studies examining the relationship between parental emotion socialisation practices on their children's emotion regulation. In order to operationalise intentional emotion socialisation practices, the review was interested in studies that examined parental emotion socialisation through explicit parental responses using self-report questionnaires. Studies that employed methods examining directly observed parental behaviours in response to children emotional reactions were also included. Implicit emotion socialisation processes in reaction to a child's emotional experiences, such as parental expressed emotions and parental emotional availability were excluded from the review.

## **Method**

### **Inclusion Criteria**

Studies were restricted to those written in English and published in peer-reviewed journals. The inclusion criteria required that studies looked at both emotion socialisation and emotion regulation as study variables, and examined the relationship between them. Studies examining emotion socialisation by solely focusing only on parental emotional expressivity were excluded. Of studies examining emotion socialisation through self-report methods, child reports of their parents' emotion socialisation practices were omitted. This included adult participants who rated their parents' emotion socialisation practice retrospectively. The remaining studies examined emotion socialisation within caregiver-child relationships and included an evaluation of child emotion regulation. Review articles, book chapters, manuals and dissertations were also excluded from the review.

### **Literature Search Strategy**

A search was performed using PsychINFO and Medline databases. Keywords were combined for the searches: 1) emotion\* regulation, family 2) emotion\* regulation, child\* 3) emotion\* regulation, parent\* 4) emotion\* socialisation, parent\* 5) emotion\* socialization, parent\* 6) emotion\* regulation, emotion\* socialization 7) emotion\* regulation, emotion socialisation. The search yielded a total of 256 papers: 186 hits in PsychINFO and 73 in Medline. Papers that were available after 31<sup>st</sup> October 2015 were not included. The titles and abstracts of the search result were read and checked against the inclusion criteria. After the removal of duplicates, 15 studies were selected. The process of the literature search is summarised in Figure 2.

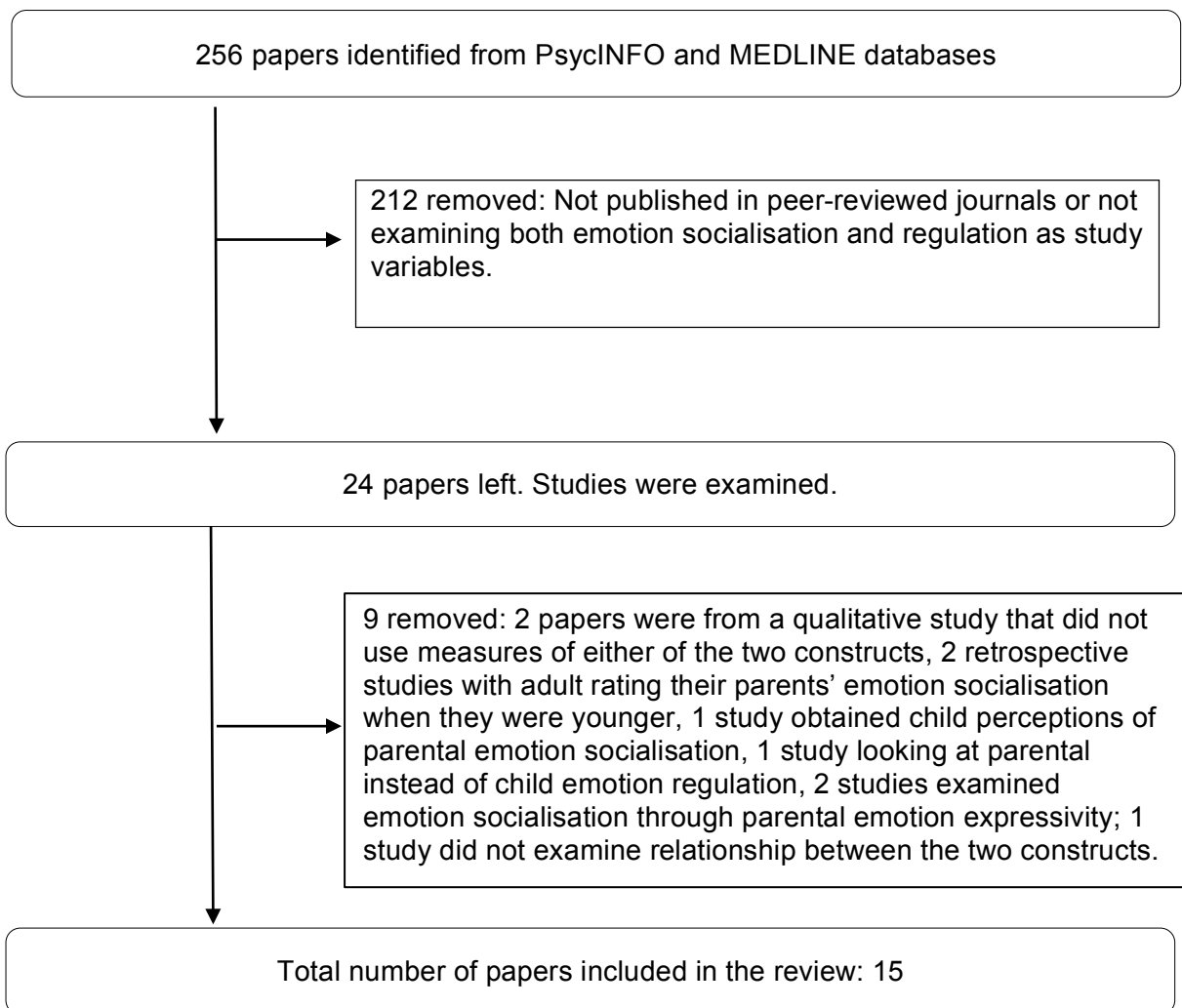


Figure 2: Flow diagram of search strategy procedure

## Results

### Overview of Studies

The 15 articles reported on studies conducted with caregiver and child participants. With the exception of a German study, all other studies were conducted in the United States ( $n = 14$ ). One study was published in 2001 and there was a gap before another three studies were published (1 in 2006, 1 in 2007 and 1 in 2009). The number of studies increased

considerably in recent years (11 studies; 4 in 2012, 1 in 2013; 4 in 2014 and 2 in 2015). An overview of the studies can be found in Table 1.

**Additional parent and child variables examined.** It was noted that of the 15 studies, none focused solely on the two variables: parental emotion socialisation and child emotion regulation. Additional factors were identified by the studies as possible influences on the relationship between the two variables. Parent factors identified were: parents' emotion representation (parental beliefs and values specific to emotions, Meyer, Raikes, Virmani, Waters & Thompson, 2014), consistency between parents' emotion socialisation and emotional expressiveness within the family (Mirabile, 2014), family risk factors (Shaffer, Suveg, Thomassin & Bradbury, 2012; Garner, 2006), the specific emotion socialisation component practised (parental reappraisal or response suppression modelling; Gunzenhauser, Fasche, Friedlmeier & von Schodoletz, 2013), parents' emotion regulation self-efficacy (Gunzenhauser et al., 2013), parent gender (Shewark & Blandon, 2015; Gunzenhauser et al., 2013) and maltreating mothers (Shipman & Zeman, 2001; Shipman et al., 2007). Child factors considered were: child physiological reactions in an emotion-eliciting condition (frustrating puzzle task, Perry, Calkins, Nelson, Leerkes & Marcovitch, 2012; threatening versus neutral stimuli, Williams & Woodruff-Borden, 2015), child birth-order (Shewark & Blandon, 2015), child gender (Cunningham, Kliewer & Garner, 2009; Premo & Kiel, 2014), the specific emotion regulation strategies used (child reappraisal or response suppression strategies; Gunzenhauser et al., 2013), type of emotions (Shewark & Blandon, 2015; Lunkenheimer, Hollenstein, Wang & Shields, 2012; Morelen & Suveg, 2012) and level of threat presented to child (high versus low threat stimuli, Premo & Kiel, 2014).

The variables of parental emotion socialisation and child emotion regulation were found to have an influence on the following child outcomes: anxiety (Williams & Woodruff-Borden, 2015), emotional expression (Mirabile, 2014), social competence (Mirabile 2014), internalising/externalising behaviours (Mirabile, 2014), friendship quality (Blair, Perry, O'Brien, Calkins & Keane, 2014), prosocial behaviour (Garner, 2006), emotion

understanding (Cunningham et al., 2009), adjustment to school (Cunningham et al., 2009) and academic competence (Cunningham et al., 2009).

#### **Heterogeneity of outcome measures used.**

**Parental emotion socialisation.** *The majority of the studies used the Coping with Children's Negative Emotions (CCNES) questionnaire as a measure of parental emotion socialisation (refer to Table 1). The CCNES, designed by Fabes, Eisenberg and Bernzweig (1990), requires parents to rate how they would most likely respond to their child's negative emotions in 12 scenarios. The CCNES comprises six subscales that form two aggregates (supportive reactions: expressive encouragement, emotion-focused reactions, problem-focused reactions subscales; unsupportive reactions: minimizing reactions, punitive responses and distress reactions subscales). One of the nine studies had used a toddler version of the questionnaire (Premo & Kiel, 2014).*

Three studies had employed semi-structured interviews as measures of emotion socialisation (refer to Table 1). Out of the three studies, one had used an observation task to supplement their self-report measurement of emotion socialisation (Shipman et al., 2007). In that study, the Parent-Child Emotion Interaction Task (PCEIT; Shipman & Zeman, 1999) was used, where children were asked to talk about a recent emotional experience and mothers were asked to respond as they would normally. Mothers' responses were coded using the parent-child validation/invalidation behaviour coding scale, which were similar to the supportive and unsupportive dimensions of the CCNES. Three remaining studies had employed observational methods to measure emotion socialisation (refer to Table 1).

**Child emotion regulation.** *The majority of the studies used the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997) as a measure of child emotion regulation (refer to Table 1). The checklist comprises 24 items that assesses parents' perceptions of their child's emotion regulation. The items yield two subscales: Adaptive Emotion Regulation, which measures emotional self-awareness, empathy and situationally appropriate displays of emotions and Dysregulation, which measures dysregulated negative affect and lack of flexibility displayed by children. Of the 10 studies using the ERC, two had also used*

observational methods (Perry et al., 2012; Morelen & Suveg, 2012) and three had used other self-report measures to supplement their measurements of emotion regulation (refer to Table 1).

As for the remaining five studies that did not use the ERC, three studies used separate self-report measures of emotion regulation (refer to Table 1). Two studies employed an observation method to measure emotion regulation (Premo & Kiel, 2014; Garner, 2006).

### **Unsupportive and Supportive Emotion Socialisation as Separate Dimensions**

One notable feature of the reviewed studies was that 12 of the 15 studies examined the dimensions of unsupportive and supportive emotion socialisation separately, highlighting the possibility that the two dimensions may have distinct influences on child emotion regulation. These studies also afford the opportunity to see how consistently these two dimensions are inter-correlated.

**Relationship between supportive and unsupportive emotion socialisation.** Of the 10 studies that reported results examining the relationship between supportive and unsupportive socialisation practices, three studies reported a significant relationship between unsupportive and supportive emotion socialisation. Mirabile (2014) reported that scores on the unsupportive emotion socialisation composite had a significant negative correlation with scores on the supportive emotion socialisation composite ( $r = -.34, p < .01$ ), suggesting that parents who engage in more supportive emotion socialisation practices tended also to use less unsupportive emotion socialisation practices and vice versa. This finding was replicated by two other studies: Perry et al., (2012;  $r = -.32, p < .01$ ) and Gunzenhauser et al. (2013;  $r = -.16, p < .05$ ).

Four other studies, using self-report methods to measure emotion socialisation, reported no significant correlation between supportive and unsupportive emotion socialisation (Premo & Kiel, 2014; Blair et al., 2014; Williams & Woodruff-Borden, 2015; Shaffer et al., 2012). Lunkenheimer et al. (2012), who used observational methods to

measure the construct of emotion socialisation, similarly found no significant relationship between supportive and unsupportive emotion socialisation. Premo and Kiel (2014) further reported that supportive emotion socialisation did not significantly correlate with unsupportive emotion socialisation when measured at age 2 and this finding was consistent when measured again at age 3. The authors also reported that supportive emotion socialisation measured at age 2 significantly correlated with supportive emotion socialisation at age 3 ( $r = .68, p < .01$ ) and unsupportive emotion socialisation at age 2 significantly correlated with unsupportive emotion socialisation at age 3 ( $r = .70, p < .001$ ).

Two other studies reported differences in findings on the relationship between supportive and unsupportive emotion socialisation based on several possible factors (Shewark & Blandon, 2015; Meyer et al., 2014). Shewark and Blandon (2015) suggested that differences might exist due to parental gender and child birth-order. They reported a significant negative correlation between supportive and unsupportive socialisation practices by mothers for older siblings ( $r = -.30, p < .05$ ), by mothers for younger siblings ( $r = -.32, p < .05$ ) and by fathers for older siblings ( $r = -.31, p < .01$ ). Meyer et al. (2014) explained that these differences could be due to the aspect of supportive or unsupportive emotion socialisation practices measured. They examined the relationships between the three subscales of the supportive emotion socialisation composite and the three subscales of the unsupportive emotion socialisation composite. The authors combined the supportive emotion socialisation subscales of problem-focused reactions and emotion-focused reactions to form the problem/emotion-focused aggregate and the unsupportive emotion socialisation subscales of minimizing reactions and punitive reactions to form the minimizing/punitive aggregate. No significant correlation was found between the supportive emotion socialisation aspect of problem/emotion aggregate and the two unsupportive emotion socialisation aspects of minimizing/punitive aggregate and distress reactions subscale. However, the authors reported a significant relationship between the supportive emotion socialisation aspect of expressive encouragement and the unsupportive emotion

socialisation aspect of minimizing/punitive aggregate ( $r = -.37, p < .001$ ) and distress reactions subscales ( $r = -.35, p < .001$ ).

Taken together, the majority of the studies provided evidence that supportive and unsupportive emotion socialisation are unrelated and that these practices to socialise children's emotions possibly lie on different continuums. This finding was found in studies using self-report and observational measures of emotion socialisation, and that this difference also persists as the child becomes older. Where a relationship is reported, studies suggest that it could be due to demographic factors such as parent gender and child birth-order, or the aspect of supportive/unsupportive emotion socialisation examined.

For the purposes of this review, given that the majority of the studies had reported separately according to supportive and unsupportive emotion socialisation practices, the sections below are organised so that results for supportive and unsupportive emotion socialisation are considered under separate headings.



Table 1: Overview of studies

Author (s)	Year	Study Focus	N	Age	ES Measure(s)	ER Measure(s)
Perry, Calkins, Nelson, Leerkes & Marcovitch	2012	Parental emotion socialisation as a predictor of child emotion regulation, moderated by child cardiac vagal suppression	197	3	CCNES	ERC; FPT*
Shewark & Blandon	2015	Parental emotion socialisation in relation to child emotion regulation and birth order	70	2 – 5	CCNES; PRCPES	ERC
Meyer, Raike, Virmani, Waters & Thompson	2014	Parental emotion representations in relation to parental emotion socialisation and child emotion regulation	73	4 – 5	CCNES; SEFQ	CERP
Williams & Woodruff-Borden	2015	Parental emotion socialisation and child emotion regulation as predictors of child anxiety, mediated by child cardiac variability	85	5 – 12	CCNES	BRIEF
Mirabile	2014	Consistency of parental emotion socialisation and its relation to child outcomes	81	3 – 6	CCNES; SEFQ	ERC; ERSO; CEEQ
Shaffer, Suveg, Thomassin & Bradbury	2012	Family risk factors predicting child emotion regulation, mediated by parental emotion socialisation	97	3 – 6	CCNES	ERC
Blair, Perry, O'Brien, Calkins & Keane	2014	Parental emotion socialisation associated with changes in friendship quality, mediated by child emotion regulation development	336	5 & 7	CCNES	ERC <sup>#</sup> – M & T
Gunzenhauser, Fasche, Friedlmeier & von Schodoletz	2013	Parental emotion socialisation of reappraisal and response suppression in relation to child emotion regulation development	118	5 & 6	CCNES	C-ERQ
Shipman & Zeman	2001	Child maltreatment in relation to children's emotion regulation, mediated by parental emotion socialisation practices	50	6 – 12	EMI-M	CEMS; ERC; EMI-C
Premo & Kiel	2014	Child gender and emotion regulation in relation to changes in parental emotion socialisation practices	106	2 & 3	CTNES	Taped child behaviours*
Shipman, Schneider, Fitzgerald, Sims, Swisher & Edwards	2007	Implications of maternal emotion socialisation practices on child emotion regulation in maltreating and non-maltreating families	80	6 – 12	PCEIT*; MEI-P	ERC
Cunningham, Kliever & Garner	2009	Parental emotion socialisation in relation to child emotion understanding, emotion regulation and psychosocial adjustment	69	9 – 13	MEPI	ERC; SATI; EUJ
Lunkenheimer, Hollenstein, Wang & Shields	2012	Family emotion socialisation patterns in three different conversational contexts in relation to child emotion regulation	92	8 – 11.25	FECSS-R	ERC <sup>#</sup> – M & T
Garner	2006	Maternal practices around prosocial behaviour and emotions predicting child prosocial behaviour and emotion regulation ability after controlling for SES	70	2 – 6	Observed maternal behaviours*	Observed child behaviours*
Morelen & Suveg	2012	Reciprocal relationship between supportiveness of emotion parenting and child emotion regulation	54	7 – 12	Taped parent-child discussions*	ERC; Taped parent-child discussions*

Notes: BRIEF: Behavior Rating Inventory of Executive Function; C-ERQ: Child Emotion Regulation Questionnaire; CCNES: Coping with Children's Negative Emotions; CEEQ: Child Emotion Expressiveness Questionnaire; CEMS: Children's Emotion Management Scales – Anger and Sadness; CERP: Children's Emotion Regulation Processes Survey; CTNES: Coping with Toddlers' Negative Emotions; EMI-C: Emotion Management Interview – Child Version; EMI-M: Emotion Management Interview – Mother Version; ERC: Emotion Regulation Checklist; ERSQ: Emotion Regulation Skills Questionnaire; EUJ: Emotion Understanding Interview; FECSS-R: Family Emotion Communication Scoring System – Revised; FPT: Frustrating Puzzle Task; MEI-P: Meta-Emotion Interview – Parent Version; MEPI: Meta-Emotion Philosophy Interview; PCEIT: Parent-Child Emotion Interaction Task; PRCPES: Parental Reactions to Children's Positive Emotions Scale; SEFQ: Self-expressiveness in the Family Questionnaire.

\*Indicates that the construct was based on observed behaviours coded by researchers. #Indicates that the measured was completed by both mothers (M) and teachers (T).

## **Supportive Emotion Socialisation and Child Emotion Regulation**

In general, studies tended to consistently find a positive relationship between supportive emotion socialisation and child emotion regulation. 12 out of 14 studies that examined supportive emotion socialisation found a positive relationship with child emotion regulation. Two other studies reported no significant relationship between supportive emotion socialisation and child emotion regulation. One study opted to focus on unsupportive emotion socialisation and did not report results on supportive emotion socialisation (Mirabile, 2014). None of the studies reported a negative correlation between supportive emotion socialisation and child emotion regulation. Of the 12 studies finding positive evidence, seven studies also reported that there was no significant relationship between the variables found if they were measured differently or based on different demographics (Perry et al., 2012; Shipman et al., 2007; Cunningham et al., 2009; Shewark & Blandon, 2015). An overview of the findings can be found in Figure 2. Below, the range of factors is considered that may explain some of the variability in the findings across studies.

**Measurement factors.** Of the three studies that reported mixed findings, two studies argued that this was due to differences in the measurement of child emotion regulation. Perry et al. (2012) reported a positive relationship ( $r = .35, p < .01$ ) between parent self-reports of both supportive emotion socialisation and child emotion regulation. However, the same study found that when emotion regulation was measured based on observations of distraction strategies used by the child when completing a frustrating task, no significant relationship was found between supportive emotion socialisation and emotion regulation. Considering that observational methods could be a more objective reflection of child's emotion regulatory abilities than parental self-reports, this difference in findings, at the very least, suggests that the relationship found between emotion regulation and emotion socialisation should be interpreted with caution.

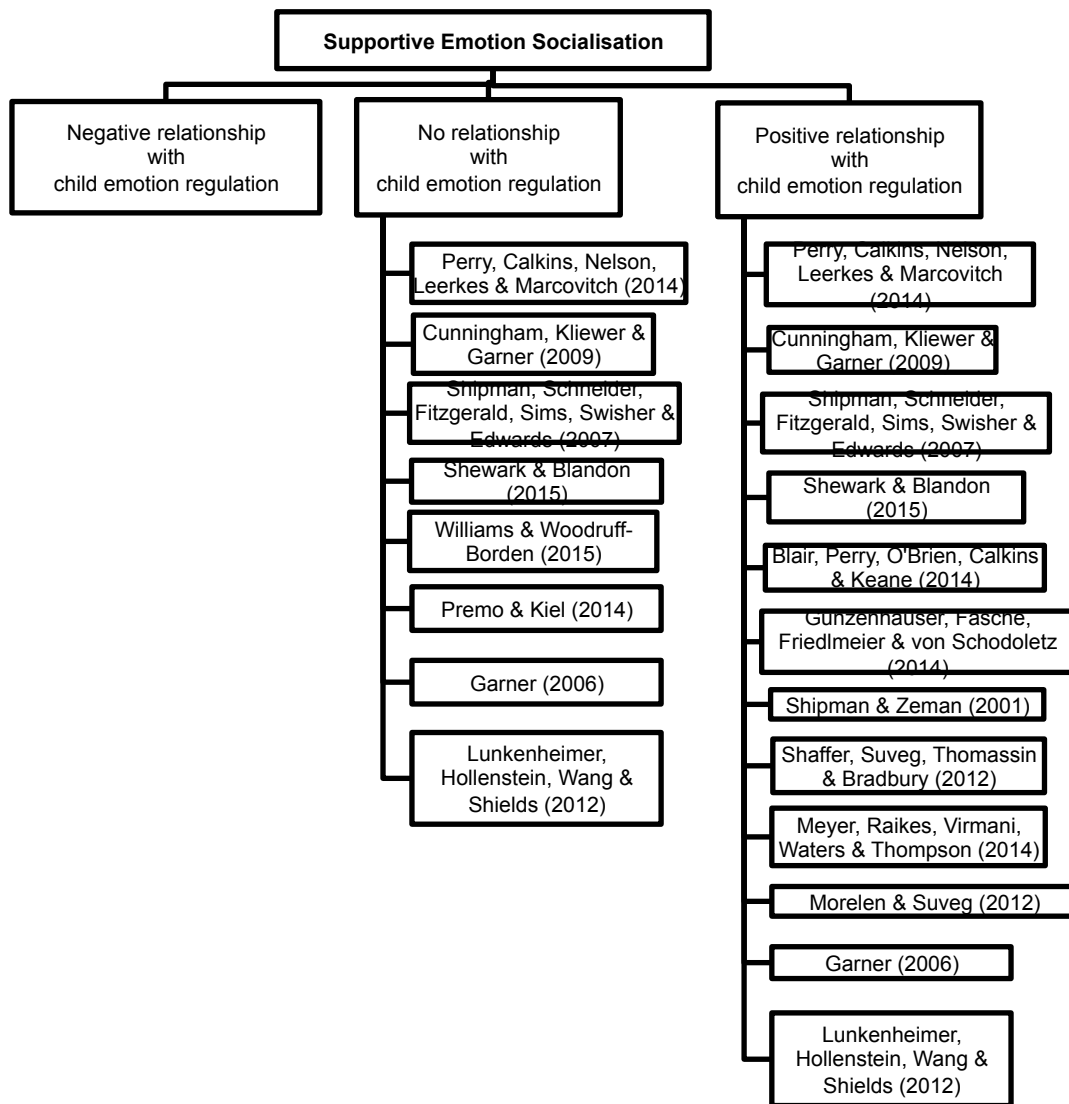


Figure 3: Relationships between supportive emotion socialisation and child emotion regulation

Shipman et al. (2007) also reported differences in findings due to measurement of the variables – this time, for supportive emotion socialisation. The authors reported different findings for observed supportive emotion socialisation responses to children in a parent-child emotion interaction task and parental responses in a semi-structured interview assessing emotion coaching. Furthermore, the authors reported differences in results when child emotion regulation was measured by the Adaptive Emotion Regulation subscale and Dysregulation subscale on the ERC. Reportedly, observed supportive emotion socialisation is a significant mediator ( $\beta = .37, p < .01$ ) in the prediction model of maltreatment on child

emotion regulation as measured by the Adaptive Emotion Regulation subscale of the ERC. However, when child emotion regulation was based on the Dysregulation subscale of the ERC, supportive emotion socialisation was not a significant mediator between maltreatment on child emotion regulation. Furthermore, the authors reported that parent self-reports of supportive emotion socialisation is a significant mediator ( $\beta = .30, p < .05$ ) in the prediction model of maltreatment on child emotion regulation measured by the Adaptive Emotion Regulation subscale of the ERC, but not a significant mediator of maltreatment on child emotion regulation when measured by the Dysregulation subscale.

Lunkenheimer et al. (2012) measured supportive emotion socialisation based on parent utterance of emotion socialisation statements in their discussions of emotions with children. The authors found that parental use of emotion coaching (validating or problem-solving) statements or questions was positively related to parent-reports (on the ERC) of child emotion regulation ( $r = .27, p = .05$ ). This relationship was not replicated if teachers completed the measure of child emotion regulation. Conversely, parental use of emotion elaboration (identifying or explaining emotions) statements or questions was positively related to teacher reports of child emotion regulation (on the ERC,  $r = .20, p = .10$ ), but not significantly related to maternal reports of child emotion regulation. The authors also reported a strong relationship between parent and teacher reports of child emotion regulation on the ERC ( $r = .35, p = .01$ ), suggesting that the reports of child emotion regulation are somewhat consistent across two different contexts. Taken together, whilst the findings from this particular study provide support for the positive relationship between supportive emotion socialisation and child emotion regulation, it also suggests that the relationship between the two constructs change depending on the aspect of emotion socialisation displayed by parents in discussions of emotions.

When both supportive emotion socialisation and emotion regulation variables were measured using observations of parent-child behaviour, supportive emotion socialisation was more likely to be followed by adaptive child emotion regulation than maladaptive child emotion regulation (Morelen & Suveg, 2012). The authors required participants to engage in

four separate, unstructured discussions of when the child was angry, happy, anxious and sad. This finding was found to be significant with both fathers and mothers, and within all contexts of emotion discussions (anger, happy, anxious and sad). Similarly, Garner (2006) observed parent-child participants during home visits (with instructions to maintain their usual routines). The author found that supportive emotion socialisation, characterised by appropriately matched emotions, elaboration of emotions and distraction away from emotion-eliciting stimulus) was positively associated with constructive emotion regulatory behaviour, characterised by child attempts to defend their possessions, expression of emotions to resolve the situation and adult-seeking behaviours. Surprisingly, when supportive emotion socialisation was characterised by physical comfort and unelaborated comments about emotions, it was not significantly associated with constructive emotion regulatory behaviours. Findings from these studies provided additional support that the relationship between supportive emotion socialisation and child emotion regulation is significant across different measurement methods. However, it is interesting to note that only certain aspects of supportive emotion socialisation are related to constructive child emotion regulation.

**Domains of emotion socialisation and emotion regulation.** In addition, the relationship between supportive emotion socialisation and child emotion regulation differed depending on the aspects of emotion socialisation and emotion regulation examined. Meyer et al. (2014) examined the two subscales (problem/emotion-focused aggregate and emotion encourage subscale) of the supportive emotion socialisation composite in the CCNES in relation to four aspects of child emotion regulatory strategies (problem/emotion focused, attention focused, dominant venting and submissive venting). They found a significant relationship between the problem/emotion-focused aggregate and the following child emotion regulatory strategies: problem/emotion focused ( $r = .29, p < .001$ ), attention-focused ( $r = .41, p < .05$ ) and submissive venting ( $r = .30, p < .001$ ). They also found a significant relationship between the emotion encourage subscale and problem/emotion focused child emotion regulation strategies ( $r = .31, p < .001$ ). Other combinations of the emotion socialisation and four emotion regulation aspects were not found to be significant. Similarly,

Gunzenhauser et al. (2013) also examined supportive emotion socialisation in relation to different aspects of child emotion regulatory strategies. The authors reported that supportive emotion socialisation was significantly related to the child emotion regulatory strategy of reappraisal ( $r = .34, p < .001$ ), but not significantly related to the strategy of response suppression.

**Demographic factors.** Another possible reason for mixed findings is differences in child gender. Cunningham et al. (2009) reported that with boys, supportive emotion socialisation measured through parent interviews was significantly related to child emotion regulation measured by both the adaptive emotion regulation subscale of the ERC ( $r = .42, p < .01$ ) and Dysregulation subscale of the ERC ( $r = -.56, p < .001$ ). On the other hand, supportive emotion socialisation was not significantly related to child emotion regulation for any of the subscales for girls.

In addition to child gender, other demographic factors that may influence the relationship between supportive emotion socialisation and child emotion regulation include parent gender, birth order and child age. Shewark and Blandon (2015) reported findings that differed in relation to parent gender. For fathers, a significant relationship was found between supportive emotion socialisation and child emotion regulation measured by the adaptive emotion regulation subscale of the ERC ( $r = .36, p < .05$ ) whilst no significant relationship was found between supportive emotion socialisation and child emotion regulation measured by the dysregulation subscale. Conversely, for mothers, a significant relationship was found between supportive emotion socialisation and child emotion regulation measured by the dysregulation subscale ( $r = -.24, p < .10$ ) whilst no significant relationship was found between supportive emotion socialisation and child emotion regulation measured by the adaptive emotion regulation subscale of the ERC. Shewark and Blandon (2015) further established that both effects were found to be significant only if the child was the older sibling, and was not found to be significant if the child was the younger sibling. Finally, child age may also influence the relationship between supportive emotion socialisation and child emotion regulation. Blair et al. (2014) reported that supportive

emotion socialisation at age 5 was not related to child emotion regulation at age 5. However, they also reported that it was significantly related to child emotion regulation at age 7 ( $r = .18, p < .01$ ), after controlling for emotion regulation at age 5.

**Situational factors.** Contextual factors such as the level of threat stimuli presented to the child and the emotional context were also found to influence the relationship between parental emotion socialisation and child emotion regulation, although not consistently across studies. Premo and Kiel (2014) did not find differences in the association between supportive emotion socialisation and child emotion regulation when the threat stimulus presented to the child was high (remote-controlled spider) or low (playful clown and puppet show). However, it is worth noting that the differing level of threat affected the relationship between unsupportive emotion socialisation and child emotion regulation (further elaborated in the next section). The context of the type of affect displayed by the child may also affect the relationship between supportive emotion socialisation and child emotion regulation. Shewark and Blandon (2015) noted that the abovementioned relationship between parental emotion socialisation and child emotion regulation was only significant for parental responses within the context of negative emotions (measured by the CCNES), instead of positive emotions (measured by the PRCPEs).

### **Unsupportive Emotion Socialisation and Child Emotion Regulation**

In general, the majority of studies found a negative relationship between unsupportive emotion socialisation and child emotion regulation: nine out of 10 studies that examined unsupportive emotion socialisation did so. One study reported no significant relationship between unsupportive emotion socialisation and child emotion regulation. Of the nine studies finding negative evidence, three studies reported that there was no significant relationship between the variables if they were measured differently or based on different demographic factors (Perry et al., 2012; Shewark & Blandon, 2015; Shipman et al., 2007) whilst two studies also reported a positive relationship between unsupportive emotion socialisation and child emotion regulation (Mirabile, 2014; Premo & Kiel, 2014). An overview

of the findings can be found in Figure 4. Below, the study factors are considered to understand the variability in the findings across the studies.

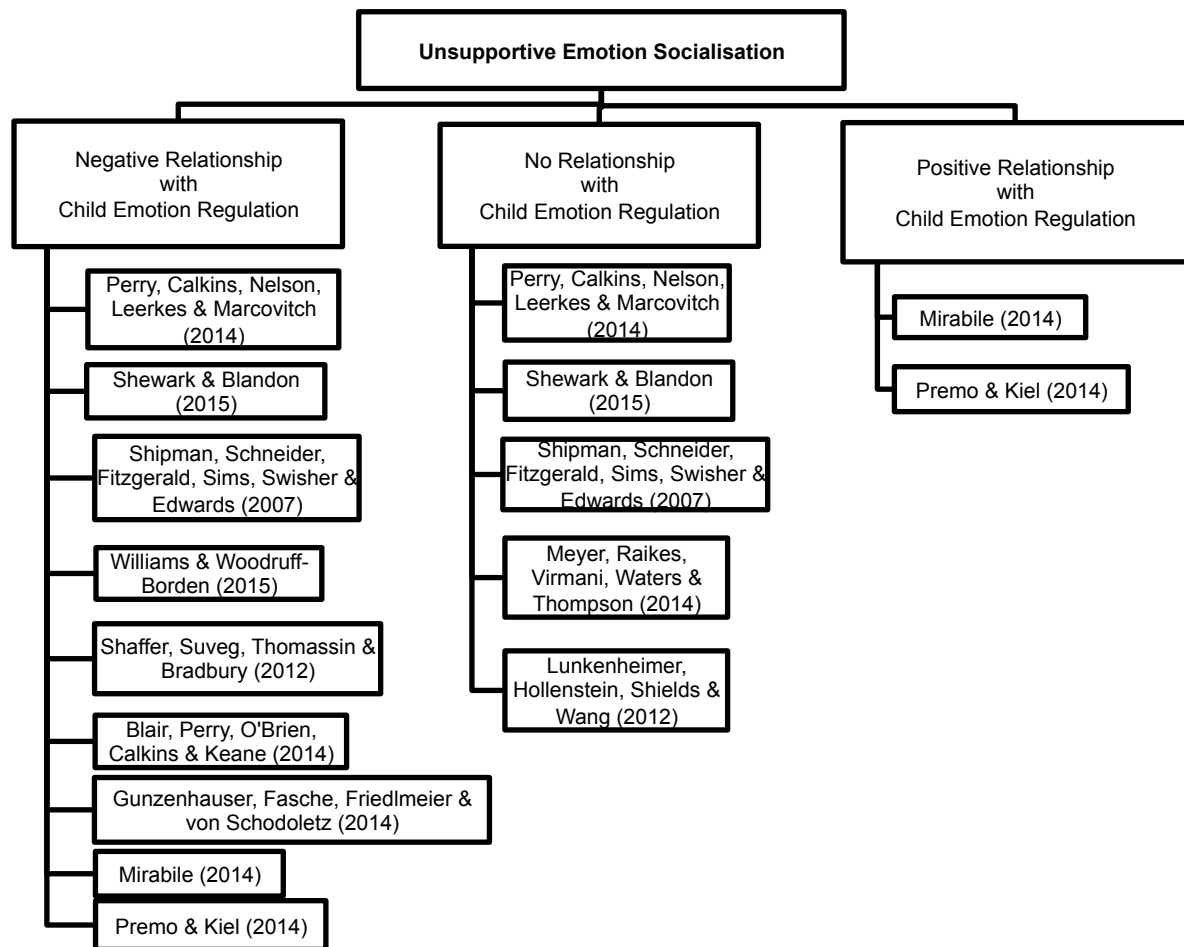


Figure 4: Relationships between unsupportive emotion socialisation and child emotion regulation

**Measurement Factors.** Of the five studies reporting mixed results, one study reported that this was due to the measurement of child emotion regulation. Perry et al. (2012) reported a negative relationship ( $r = -.15, p < .05$ ) between unsupportive emotion socialisation and parent reports of child emotion regulation. However, the relationship between unsupportive emotion socialisation and child emotion regulation was not significant if emotion regulation was measured based on observations of distraction strategies used when child was completing a frustrating task. This finding was similar to the authors'



findings of the relationship between supportive emotion socialisation and child emotion regulation reported earlier.

On the other hand, when unsupportive emotion socialisation was examined using observation methods (Lunkenheimer et al, 2012), it was found that parent use of dismissing statements or behaviours in a parent-child discussion of emotions was not significantly related to parent reports of emotion regulation on the ERC. This lack of significant relationship was also present with teacher reports of child emotion regulation.

**Domains of emotion socialisation and emotion regulation.** Shipman et al. (2007) also reported mixed results depending on the aspect of child emotion regulation measured. The study found that unsupportive emotion socialisation is a significant mediator ( $\beta = .26$ ,  $p < .05$ ) in the prediction model of maltreatment on child emotion regulation as measured by adaptive emotion regulation on the ERC. However, unsupportive emotion socialisation was not a significant mediator in the prediction model of maltreatment and child emotion regulation as measured by the Dysregulation subscale on the ERC.

Finally, Mirabile (2014) also reported contrasting relationships between unsupportive emotion socialisation and child emotion regulation depending on how emotion regulation is measured. Mirabile (2014) reported that although unsupportive emotion socialisation is not significantly related to emotion regulation as measured by the total score on the ERC, it was significantly related to maladaptive emotion regulation strategies (aggression, venting and suppression) and adaptive emotion regulation strategies (self-soothing, comfort seeking and information gathering) as measured by a novel scale that differentiates between adaptive and maladaptive regulatory skills. It was reported that punitive emotion socialisation responses significantly predicted maladaptive emotion regulation ( $\beta = .08$ ,  $p < .01$ ). The author also reported an interaction between punitive emotion socialisation and negative parental expressivity in relation to adaptive emotion regulation strategies ( $\beta = .26$ ,  $p < .05$ ), where the relationship between emotion socialisation and emotion regulation strengthens at higher levels of negative parental expressivity.

Gunzenhauser et al. (2013) replicated the finding that different relationships between unsupportive emotion socialisation and child emotion regulation were established, depending on the aspect of emotion regulation that was measured. The authors had measured child emotion regulation in terms of the type of emotion regulation skill used: reappraisal and response suppression. It was found that unsupportive emotion socialisation was negatively related to child use of a more adaptive emotion regulation skill of reappraisal ( $r = -.16, p < .10$ ) and positively related to child use of a less adaptive emotion regulation skill of response suppression ( $r = .33, p < .001$ ).

A single study reported results that reflected no significant relationship between unsupportive emotion socialisation and child emotion regulation. Meyer et al. (2014) examined the two unsupportive emotion socialisation subscales (minimising/punitive aggregate and matched distress subscale) of the CCNES in relation to four aspects of child emotion regulation (problem/emotion focused, attention focused, dominant venting and submissive venting) as measured by parent responses on an adapted version of the Children's Emotion Regulation Process Survey (CERP; Bernzweig, Eisenberg & Fabes, 1993). They found no significant relationships between the two emotion socialisation and four emotion regulation variables.

**Demographic factors.** Shewark and Blandon (2015) reported mixed findings depending on parent gender and child birth-order. The authors found a negative relationship between fathers' unsupportive emotion socialisation and child emotion regulation measured using the adaptive emotion regulation skills subscale on the ERC ( $r = -.37, p < .01$ ) and the Dysregulation subscale on the ERC ( $r = .38, p < .01$ ), although only in response to negative emotions (unsupportive emotion socialisation measured by the CCNES) and not positive emotions (unsupportive emotion socialisation measured by the PRCPEs). Conversely, mothers' unsupportive emotion socialisation was related to child emotion regulation as measured by the dysregulation subscale of the ERC ( $r = .25, p < .10$ ) for positive emotions and not negative emotions. This correlation between mothers' unsupportive emotion socialisation and child emotion regulation was found only in younger siblings but not older

siblings. Shewark and Bandon (2015) also reported that for older siblings, a significant relationship could be observed between fathers' unsupportive emotion socialisation (in response to positive emotions) and child emotion regulation, as measured by the dysregulation subscale of the ERC ( $r = .41, p < .01$ ). On the other hand, for younger siblings, there was a significant relationship between fathers' unsupportive emotion socialisation (in response to positive emotions) and child emotion regulation as measured by the dysregulation subscale of the ERC ( $r = .22, p < .10$ ) and the adaptive emotion regulation skills subscale on the ERC ( $r = -.25, p < .10$ ).

The mix of findings seems to suggest that parents' unsupportive responses to positive emotions is significantly associated with child emotion regulation regardless of parent gender. This effect is only present in their younger children (average age of 32.6 months) and not in older children (average age of 57.6 months). On the other hand, fathers' (and not mothers') unsupportive responses to negative emotions were significantly associated with child emotion regulation in older children. These findings suggest differences in parental expectations and influence in relation to their child's emotion development stage and regulatory abilities.

Although Shewark and Bandon (2015) had examined other combination of variables (parent gender, sibling birth order, unsupportive emotion socialisation in relation to emotional context – positive/negative and type of child emotion regulation), no other significant relationships were found. Interestingly, the authors also found significant similarity between siblings in their emotion regulation skills: older and younger siblings' emotion regulation were significantly related to each other for both emotion regulation subscales of the ERC (dysregulation subscale:  $r = .28, p < .05$  and adaptive emotion regulation skills subscale:  $r = .42, p < .05$ ). Such similarities indicate genetic or shared environmental factors influencing children's emotion regulation skills.

**Situational factors.** Premo and Kiel (2014) reported that when measured in high threat situations, unsupportive emotion socialisation positively correlated with child use of attention regulation skills ( $r = .23, p < .05$ ). In low threat situations, they found that

unsupportive emotion socialisation negatively correlated with child use of caregiver-focused regulation skills ( $r = -.21, p < .05$ ).

**Child physiology.** Williams and Woodruff-Borden (2015) examined the relationship between supportiveness of emotion socialisation (based on the 6 subscales measured by the CCNES), child emotion regulation and child cardiac variability. Cardiac variability is the difference in the rate of heart rate reactivity between neutral and threatening stimuli, with larger discrepancies reflective of good cardiac control. The authors found that unsupportive emotion socialisation (in particular, only distress responses measured by the CCNES) significantly predicted child emotion regulation ( $\beta = -.39, p < .01$ ) by way of its association with cardiac variability. It was reported that unsupportive emotion socialisation was associated with less variability in child cardiac responses across threatening and neutral stimuli – a less varied child cardiac response was in turn, predictive of fewer reported skills in child emotion regulation. This relationship was not found with the subscales of supportive ES.

**Long-term effects of unsupportive ES.** In addition to the findings that unsupportive emotion socialisation was significantly negatively related to child emotion regulation, Blair et al. (2014) examined that this effect relationship has implications for the child's development of emotion regulation. The authors found that unsupportive emotion socialisation measured at age 5 was negatively related to emotion regulation at age 5 ( $r = -.19, p < .01$ ) and after controlling for emotion regulation at age 5, this relationship remains the same when measured again at age 7 ( $r = -.19, p < .01$ ).

## Discussion

Parental emotion socialisation practices and their impact on children's developmental outcomes have been the focus of research in recent years. This review was interested in its impact on the development of child emotion regulation and aims to summarise research that sought to understand the relationship between parental emotion socialisation and child emotion regulation.

The majority of the studies examined emotion socialisation as two separate dimensions: supportive ES, characterised by expressive encouragement, emotion-focused reactions (such as emotion discourse) and problem-focused reactions (such as identifying solutions to child's problems) to children's emotions, and unsupportive ES, characterised by minimising reactions, punitive responses and distressed responses to children's emotions. The main findings of the review suggest that supportive emotion socialisation is consistently and positively related to child emotion regulation. Furthermore, there was relatively consistent evidence that unsupportive parental emotion socialisation practices in response to children's displays of emotion are associated with poorer child emotion regulation. These findings suggest that caregivers who provide support make it possible for children to learn and practice how to use emotion regulation strategies to reduce emotional arousal when encountering situations that could be emotionally challenging. Conversely, caregivers who respond to children's displays of emotions with their own distress reactions, dismissive responses or punitive reactions may provide a social environment that makes it difficult for children to learn and practice adaptive emotion regulation strategies in emotionally challenging situations.

The findings on the relationship between supportive emotion socialisation and child emotion regulation were relatively clear. It is important to note that none of the studies found a relationship in the opposite direction – across the studies, supportive emotion socialisation was not found to have a negative relationship with child emotion regulation. Results from a few studies suggest that associations may not always be observed, and the reviewed studies provided some indications of factors that may be responsible for this between-study variability. There is some evidence to suggest that null findings could be observed when emotion regulation was based on child displays of emotion dysregulation instead of adaptive regulatory strategies (Shipman et al., 2007, Shewark & Bandon, 2015), in mother reports instead of father reports (Shewark & Bandon, 2015), in the younger child of siblings pairs (Shewark & Bandon, 2015) and in girls (Cunningham et al., 2009). These findings may reflect the different developmental or gender expectations that parents may have of their

child, which may in turn affect the amount or nature of how parents respond to their children and the corresponding ratings of their child's emotion regulation.

The findings on the relationship between unsupportive emotion socialisation and child emotion regulation were less clear. Although most of the studies reported that unsupportive emotion socialisation is negatively related to child emotion regulation, half of these studies reported mixed findings. Where no relationship was also found between unsupportive emotion socialisation and child emotion regulation, this was attributed to how child emotion regulation was measured (Perry et al., 2012; Shipman et al., 2007), how unsupportive emotion socialisation was measured (Meyer et al., 2014) and parent-child dyad demographics (Shewark & Blandon, 2015). Of interest are two studies that reported that unsupportive emotion socialisation is significantly related to both adaptive and maladaptive child emotion regulation strategies. Premo and Kiel (2014) reported that greater unsupportive emotion socialisation was associated with greater child use of attention regulation to manage high threat situations whilst unsupportive emotion socialisation is associated with reduced use of caregiver-focused regulation in low threat situations. This finding puts forth the possibility that parents who had responded more unsupportively to their child's emotions when little emotion has been elicited (in low threat situations) tended also to have children who engaged in lesser caregiver-seeking behaviours. In more threatening situations, children who are used to parents responding unsupportively to their emotions may then opt to rely on more autonomous, attention regulatory behaviours such as distraction and gaze aversion, instead of relying on their caregiver through the use of parent-focused regulatory behaviours. Mirabile's (2014) finding, where unsupportive parental socialisation was positively associated with adaptive emotion regulation in children, in the presence of greater levels of negative parental expressivity, indicated the impact of the family's emotional environment in influencing the relationship between how parents respond to their child's emotions and children's regulatory abilities. Furthermore, the finding that unsupportive socialisation responses was associated with poorer emotion regulation outcomes at age five, and even after controlling for emotion regulation scores at age 5, with

this association remaining significant two years later (Blair et al., 2014) has implications for the long-term impact of unhelpful responses to children's display of emotions.

Majority of the studies examined are based on self-report of parent emotion socialisation and child emotion regulation, reducing the construct validity of the findings due to issues in relation to informant biases. On the other hand, Lunkenheimer et al. (2012) found a significant relationship between parent and teacher ratings of child emotion regulation, providing some support that if self-report measures were used, it is likely to be consistent across contexts. Nevertheless, when study constructs were measured using observation methods, it was noted that a few studies support the main finding that parent emotion socialisation is positively related to adaptive child emotion regulation (Morelen & Suveg, 2012; Garner, 2006; Lunkenheimer et al., 2012), whilst one study reported that there is no relationship between the two constructs if child emotion regulation was rated based on observations of children in a frustration-evoking task (Perry et al., 2012). It is possible the findings by Perry et al. (2012) suggest that self-report and observational measures consider different aspects of child emotion regulation. As both methods of measurement (self-reports versus observations) have their own advantages, and considering that the findings are mixed for both self-reports and observation measurement methods, future research should consider the use of both methods in order to obtain a better understanding of the relationship between the two constructs.

### **Implications for Clinical Practice and Research**

This review collated some evidence for the notion put forth by the biosocial theory proposed by Linehan (1993), which states that an invalidating early childhood environment, characterised by intolerance for displays of emotional experiences, teaches the child that emotional expressions are undesirable and reinforces maladaptive ways of coping with emotions. Emotion invalidation by parents, through unsupportive responses such as minimising or dismissing of children's emotions, or the escalation of parental anger, similar to the distress reactions displayed by parents in the face of children's emotional displays,

has been found to be associated with a lowered ability to develop adaptive emotion regulation abilities in children.

The findings highlight the importance of employing supportive emotion socialisation practices and avoiding the use of unsupportive emotion socialisation practices in response to children's emotional displays. The findings also underscore the influence that both mothers and fathers may have in nurturing child emotion regulation, which is consistent with the inter-parental indirect effects model proposed by Fosco and Grych (2013), where both parents' warmth and sensitivity to children's emotion displays have a significant impact on the emotion regulation abilities displayed by their children.

Furthermore, the finding that the relationship between unsupportive emotion socialisation and poorer emotion regulation outcomes remains significant two years later indicates that continued use of unsupportive emotion socialisation practices may have long-term effects on emotion regulation development in children. This in turn has an impact on child outcomes related to regulation of emotion, such as academic achievement (Graziano et al., 2007) and peer relationships (Conteras et al., 2000). On the other hand, the association also indicates that a reduction in the use of unsupportive emotion socialisation practices could possibly lead to improvements in emotion regulation outcomes, suggesting the value of parenting interventions and training to improve parental emotion socialisation skills. This is consistent with findings by Herbert, Harvey, Roberts, Wichowski and Lugo-Candelas (2013), where mothers who underwent parent training focused on emotion socialisation strategies were found to use less unsupportive emotion socialisation practices post training and had correspondingly reported a reduction in their child's emotional dysregulation.

The findings from this review support existing parent training or interventions aimed at enhancing parental ability to respond more effectively to children's display of emotions. In particular, the findings that reduction of unsupportive emotion socialisation responses is more likely to be associated with better emotion regulation outcomes suggest that such parent interventions should focus more on the reduction of minimising, punitive and



distressed reactions to child's display of emotions and replacing such responses with supportive socialisation practice.

### **Limitations**

The results from this review should be understood within the context of the following limitations. It is crucial to note that the studies reviewed in this paper were correlational in nature, thus it is unclear if the link between parental socialisation practices and child emotion regulation is causal in nature, or if there are other child or environmental influences at play. This is a major limitation within this field of research and future studies could consider getting around this issue in the literature. The finding by Blair et al. (2014), suggesting that parental socialisation responses continued to be associated with child emotion regulation behaviours after controlling for earlier effects, is encouraging. More longitudinal research in this area could help to illuminate the covariation between the two variables, and provide insight on how the relationship may vary at different developmental stages. Another way to investigate this issue would be through clinical interventions aimed at supporting parents to enhance their emotion socialisation responses to their child, and to measure resulting change in child emotion regulatory strategies use. Considering that emotion socialisation is likely to work through implicit and explicit mechanisms in teaching emotion regulatory behaviours to children (Thompson, 1994), interventions could be split between two main focuses: implicit emotion socialisation (where parents mainly serve as model) and explicit emotion socialisation (where parents respond actively to children's emotional experiences) to better understand the impact of the different aspects of parental emotion socialisation on child emotion regulation.

As mentioned earlier, a major limitation within this area of research is that majority of the studies used self-reports of child emotion regulation. Thus, child emotion regulation is understood in terms of parental perceptions of their child, providing an incomplete picture of a child's emotion regulation across contexts, as it is likely that children tend to display different behaviours in contexts where parental support is unavailable. Perry et al. (2012) examined both self-report and observations of child emotion regulation and found a

difference between the two measures of emotion regulation – parental emotion socialisation was related to child emotion regulation only if based on parent ratings but not related to child emotion regulation that are based on observations, suggesting that parents' perceptions of their child's emotion regulation abilities may not necessarily reflect the observed emotion regulation abilities of their children. On the other hand, Lunkenheimer et al. (2012) found that parent and teacher ratings of child emotion regulation are positively correlated. Further research would be useful to examine the differences when measuring child emotion regulation based on parental perceptions as compared to the use of observation methods.

The studies included in this review have mainly examined parental emotion socialisation within the context of negative emotions using the CCNES measure. Only one study (Shewark & Blandon, 2015) had examined emotion socialisation across two types of emotions – both positive and negative and surprisingly, the findings were only significant for parental responses towards negative emotions, instead of positive emotions. As most of the studies had focused on parental responses towards children's negative emotions, more could be done to understand the influence of the emotional context on parental emotion socialisation and its relationship with child emotion regulation.

This review examined studies that were published in English, and thus included 11 studies from the United States and one from Germany. Considering that parental socialisation practices could vary depending on the wider sociocultural context and cultural beliefs about emotions, this could affect the relationship between emotion socialisation and child emotion regulation. Indeed, Meyer et al. (2014) reported that parental emotion representation (values about attending/accepting emotional expression and beliefs about regulating negative moods and maintaining positive emotions) was found to predict supportive emotion socialisation practices and child use of constructive emotion regulation strategies. This suggests that potential cultural factors in parental expectations of emotions and emotion regulation in children, possibly affect how parents socialise emotion in practice. It would be helpful to examine cross-cultural differences in the delivery of parental emotion socialisation and its influence on nurturing child emotion regulation.

Furthermore, studies included in this review are ones that are published in peer-reviewed journals, which tend to report significant results or good psychometric properties (i.e. publication bias) and therefore might have left out some studies that had null findings, which is a common issue in systematic reviews.

### **Conclusion**

The main findings from this review suggest that supportive emotion socialisation is associated with better child emotion regulation, and unsupportive emotion socialisation is associated with poorer child emotion regulation. Whilst it is important to consider the above findings within the limitations of the methods used to study the parent-child constructs, it is helpful to note that there was no evidence that the use of supportive emotion socialisation had a negative impact on child emotion regulation. This suggests that parents, potentially the first teachers of emotion regulation for their children, could employ the use of supportive emotion socialisation whilst being mindful about not employing unsupportive emotion socialisation responses to manage their children's emotional displays, to support the development of child emotion regulation.

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## **Part 2: Empirical Paper**

**Examining the relationship between parent emotion regulation and child emotion  
regulation**



## **Abstract**

This study examines the link between child emotion regulation (ER) and parent emotion regulation. 94 children were observed at 15, 26 and 37 months on two emotion regulation tasks (Fear and Anger episodes, Lab-TAB). Parent emotion regulation was assessed through self-report on the EROS questionnaire. Parental emotion socialisation (ES), defined as parents' responses to children's display of emotions, was hypothesised to mediate the relationship between parent and child emotion regulation. Parent emotion regulation strategies that worsen others' emotions were found to predict reduced child emotion reactivity in the fear episode and increased use of redirected action strategies in the anger episode. Parent emotion socialisation was found to have a significant relationship with parent emotion regulation. However, it was not found to be associated with child emotion regulation and did not mediate the relationship between child and parent emotion regulation. This finding suggests that a different relationship may emerge if the emotion regulation constructs are considered within different emotional contexts and are measured through observational methods instead of self-reports, suggesting possible avenues for future research.

*Keywords:* Emotion Regulation, Parent, Child, and Emotion Socialisation

## **Introduction**

Emotion regulation (ER) is the ability to manage emotional reactions to enable adaptive responses in an emotion-eliciting situation (Halligan et al., 2013). Emotion regulation comprises intrinsic and extrinsic processes that monitor, evaluate and modify an individual's emotional experience so as to achieve his goals (Thompson, 1994). Regulatory behaviours that seek to influence emotional states appear in rudimentary form in infancy and continue to develop rapidly in an individual's early years, during which children learn to adjust their physical, behavioural, and cognitive processes in order to manage these emotional experiences (Spinrad et al., 2004).

Parental influence in the development of child emotion regulation has been studied extensively in the context of their responses to child behaviours (Kopp, 1989), their ability to anticipate children's emotional reactions (Lundell et al., 2008) and their responses to children's emotional displays (Eisenberg et al., 1998). Considering that parents have to regulate their own emotions prior to responding to their child's needs (Steele, Steel & Johansson, 2002), the present study seeks to examine the relationship between parental regulatory abilities and how they respond to their children's emotional displays, and understand the longitudinal effect of parent emotion regulation abilities on their child's emotion regulation behaviours.

### **Child Emotion Regulation**

The ability to regulate emotions is a critical development achievement essential for healthy social and emotional adjustment (Thompson, 1994). Consistent with that, emotion regulation has been found to be associated with a variety of different life outcomes. Poor emotion regulation abilities in children are linked with difficulties in social interactions (Eisenberg, Fabes, Guthrie, & Reiser, 2002; Contreras et al., 2000), externalising behaviours (Halligan et al., 2013; Mullin & Hinshaw, 2007), and vulnerability to psychopathology (Feng et al., 2009; Suveg & Zeman, 2004). On the other hand, children with good emotion regulation abilities were found to be more persistent on a task (Eisenberg et al., 1996), have better social competence (Eisenberg et al., 1993), better academic achievement (Graziano

et al., 2007), and were better equipped to buffer the influence of negative emotionality on problem behaviours (Eisenberg, Fabes, Nyman, Bernzweig & Pinuelas, 1994).

As an individual's developmental abilities advance, so do their emotion regulatory strategies. In infancy, an individual's emotions are largely managed by external sources, primarily by their caregivers (Kopp, 1989), although even in early infancy basic regulatory abilities are presented, such as self-soothing and redirecting attention (Rothbart & Derryberry, 1981). Between the ages of one and two, children experience improvements in their executive attention control and become better at disengaging and redirecting their attention without external support (Derryberry & Rothbart, 2001). This ability to manage attention in turn allows children to redirect their focus from a distressing stimulus and adjust their behaviour accordingly to attain an intended goal (Posner & Rothbart, 2000; Spinrad et al., 2004). As emotion regulation capacities mature due to developmental cognitive advances and the increased awareness of external expectations of emotional control, an individual becomes better equipped to manage their own emotions autonomously (Kopp, 1982; 1989).

During this period of learning, an individual acquires a mixture of caregiver-focused and behaviour-focused emotion regulatory strategies (Grolnick, Bridges & Connell, 1996; Cole, Martin & Dennis, 2004). For example, Grolnick et al. (1996) reported that when toddlers experienced negative emotions, they used a combination of interpersonal regulatory strategies that relied on either physical or eye contact with caregivers and behavioural strategies such as self-soothing or self-distraction. The corresponding reduction in negative emotionality that was associated with the reallocation of attention suggested that these regulation efforts were effective in reducing negative affect (Cole et al., 2004).

A combination of individual and environmental factors influences the development of emotion regulatory abilities. Individual factors include the child's neurophysiology, temperament and cognitive abilities (Eisenberg & Morris, 2002; Goldsmith & Davidson, 2004). On the other hand, environmental factors also come together to influence the emotion regulation development in a child. In particular, familial factors have been argued to

play a vital role in the development of children's emotion regulation capacities (Morris et al., 2007; Fosco & Grych, 2013). In a review by Morris et al. (2007), the interplay of a range of family factors affects the development of emotion regulation in a child. These factors include parental displays of emotions, emotion-related parenting practices and the family's emotional climate. Parents play a defining role in the development of their child's emotion regulation abilities (Belsky, Fearon & Bell, 2007; Kopp, 1989) and activate efforts to manage and modify children's emotions, thus it is important to gain a clearer understanding of parental influence in the development of child emotion regulation.

### **Parental Emotion Socialisation**

Emotion socialisation is a parenting practice that is associated with the cluster of behaviours that parents exhibit with the conscious aim of influencing and nurturing their child's emotion regulation abilities (Thompson & Meyer, 2007). The construct was conceptualised as including the following factors: parents' emotion expression, parents' responses to their child's emotional experiences and parents' coaching of appropriate emotional responses (Eisenberg et al., 1998). These factors serve as models for children to understand socially valued behaviours and goals regarding specific emotions. Children gradually develop their emotion regulatory abilities through the continuous reference and revision of these behaviours, partly in response to feedback from the caregiving environment.

Emotion socialisation are strategies that parents use to respond to their child's display of emotions, and can be broadly classified into two categories: supportive and unsupportive emotion socialisation responses. Supportive emotion socialisation responses have been typically associated with good emotional development and functioning whilst unsupportive responses have been associated with poor emotional functioning (Klimes-Dougan & Zeman, 2007; Shaffer et al., 2012). Unsupportive responses are characterised by punitive responses, minimising of children's emotions and parental display of distress. Conversely, supportive responses seek to nurture children's attempts to manage their

emotions constructively and are characterised by parental acceptance of child's emotions, comforting or distracting the child from the source of distress, encouraging the expression of emotions or focusing on problem solving strategies to reduce the child's emotional distress (Eisenberg et al., 1998). A review of the studies examining the link between parental emotion socialisation and child emotion regulatory abilities suggested a strong relationship between the two variables (refer to Part 1 of the current paper). Supportive parental socialisation responses were found to be associated with better child emotion regulation abilities whilst unsupportive responses were linked with poorer emotion regulation in children.

### **Parental emotion socialisation and emotion regulation**

In order to respond supportively to their child's display of emotions, parents need to have sufficient emotional awareness, knowledge and ability to manage their own emotions first. Considering that parents have to regulate their own responses in order to respond appropriately to their child, it is logical then, to assume that parents' emotion regulation capacities play an important role in parent-child interactions and in parental emotion socialisation. Indeed, one of the challenges of parenting is the ability to notice a child's distress and to respond without being overwhelmed by or undermining the child's negative displays of emotion (Steele et al., 2002). This has been conceptualised as intra and interpersonal emotion regulation.

Intrapersonal emotion regulation occurs when an individual makes deliberate efforts to improve or worsen their own emotions, which could be through thinking about positive aspects of a situation or focusing on own shortcomings (Niven, Totterdell & Holman, 2009). According to Thompson (1994), parents who lack the ability to manage their own emotions suitably may go on to experience difficulty in fostering effective emotion regulation strategies in their children. For example, within the context of emotion socialisation, parental distress responses in reaction to their child's display of emotions are likely to elicit parental avoidance in the child (Eisenberg et al., 1998). This is likely because instead of the provision of emotion coaching or support, children have to deal with an additional source of

emotional distress and are thus likely to experience their parents as an unreliable option in the provision of emotion support (Main & Hesse, 1990). Interestingly however, the influence of parents' emotion regulation capacity on their ability to provide appropriate emotion socialisation responses, and on the child's emotion regulation development has not yet been examined in the literature.

Another aspect of emotion regulation that has been the focus of recent research is interpersonal affect regulation, a deliberate attempt to influence another person's feelings, which is reflected in interpersonal relationships (Niven, Totterdell & Holman, 2009). This has been purported to be distinct from intrapersonal emotion regulation. According to Niven, Totterdell, Stride and Holman (2011), interpersonal emotion regulation occurs when an individual makes deliberate efforts with the aim of improving or worsening the emotions displayed by another person within a social interaction. This could be through spending time and listening to another's problems or acting annoyed towards another person. Within parent-child interactions, parents could employ the use of interpersonal emotion regulation strategies with the aim of influencing their child's emotions and future regulatory behaviour. This distinct construct within the literature clearly overlaps with the construct of emotion socialization, in that both are focused on ways in which parents might try to influence their child's emotional responses. Nevertheless, there are also differences: interpersonal emotion-regulation is conceived of as a trait-like regulatory style, and is not restricted to the parent-child domain, whereas emotion-socialization exclusively relates to parent-child processes; further, interpersonal emotion-regulation concerns up- or downregulating others' emotional responses, which may or may not have a purposeful socialization aim. No studies thus far have explored the relationship between interperson regulation and emotion socialization, and so their inter-relations are poorly understood.

Studies have shown that children learn how to regulate their emotional responses through their interactions with parents (Thompson, 1994; Spinrad et al., 2004). In a review examining family factors and its impact on child emotion regulation, Morris et al. (2007) identified that the intensity and positivity of expressed emotions and the amount of marital

conflict are key parental influences on the development of child emotion regulation, underlining the importance of parents' ability to manage their emotions in the family emotional climate. However, despite the growing body of research examining parental emotion socialisation responses and its association with child emotion regulation development, it is uncertain how parents' ability to regulate their own emotions might be involved in this process, despite its clear bearing on the parents' ability to respond to the child appropriately. This gap was highlighted in a review by Bariola, Gullone & Hughes (2011) as an important factor to understand in the child emotion regulation development pathway, and has yet to be addressed.

### **Study Overview**

Extensive research has been done exploring the effects of parent factors such as expressed emotion, maternal depression and marital conflict on child emotion regulation (Morris et al, 2007; Bariola et al., 2011). However, little has been done to examine the relationship between an individual's emotion regulation abilities and how it is associated with them as parents in the parenting practice of emotion socialisation, and its impact on the development of children's emotion regulatory abilities. In order to accomplish the research aims of the present study, links were drawn between the abovementioned constructs.

As illustrated in Figure 1 below, the main focus of this study is on the construct of emotion regulation – mainly the influence of parents' emotion regulation on the development of children's emotion regulation. The study also seeks to understand the role of emotion socialisation and interpersonal emotion regulation within this context. Intrapersonal emotion regulation strategies by parents, that has been purported to become habitual and less conscious over time (Gross, 1999), may influence the development of their child's emotion regulation through two pathways. Firstly, parents' intrapersonal emotion regulation may influence child emotion regulation directly. For example, parents with better intrapersonal emotion regulation may foster children's emotion regulation through the provision of a better emotional climate in the home and in providing more supportive parenting. In the indirect pathway, parents with better intrapersonal emotion regulation capacities may positively

influence children's emotion regulation abilities through their ability to provide appropriate emotion socialisation responses to their child's emotions. This may occur for several reasons. One is that being able to provide appropriate emotion socialisation depends on the ability to manage one's own emotional responses (and avoiding emotional dysregulation). Another, overlapping, reason might be that, as mentioned in Part 1 of this thesis, good parental emotion regulation may facilitate the parent's appropriate modelling of emotion regulation strategies and the display of appropriate responses to emotions (Thompson & Meyer, 2007). Relatedly, a parent's interpersonal regulation style may indirectly influence the child's emotion regulation because these regulatory styles may shape the strategies they use to influence others' emotions, including the child's. These emotion socialization and interpersonal emotion-regulation processes, in turn, are hypothesised to nurture the development of more (or less) adaptive emotion regulation capacities in children.

Thus the first aim of the study is to establish the longitudinal association between parent emotion regulation and their child's emotion regulation. This will be achieved by measuring children's observed emotion regulation behaviours in two emotionally provoking tasks at 15, 26 and 37 months, in order to test for its influence on child's emotion regulation after controlling for earlier regulatory abilities. The second aim of the study is to examine the influence of parental emotion socialisation responses and interpersonal emotion regulation styles on the link between parent and child emotion regulation, and to understand the role of these factors as mediators between parental emotion regulation and child emotion regulation. Finally, the third aim of the study is to explore the generalisability of this relationship across different emotional contexts.



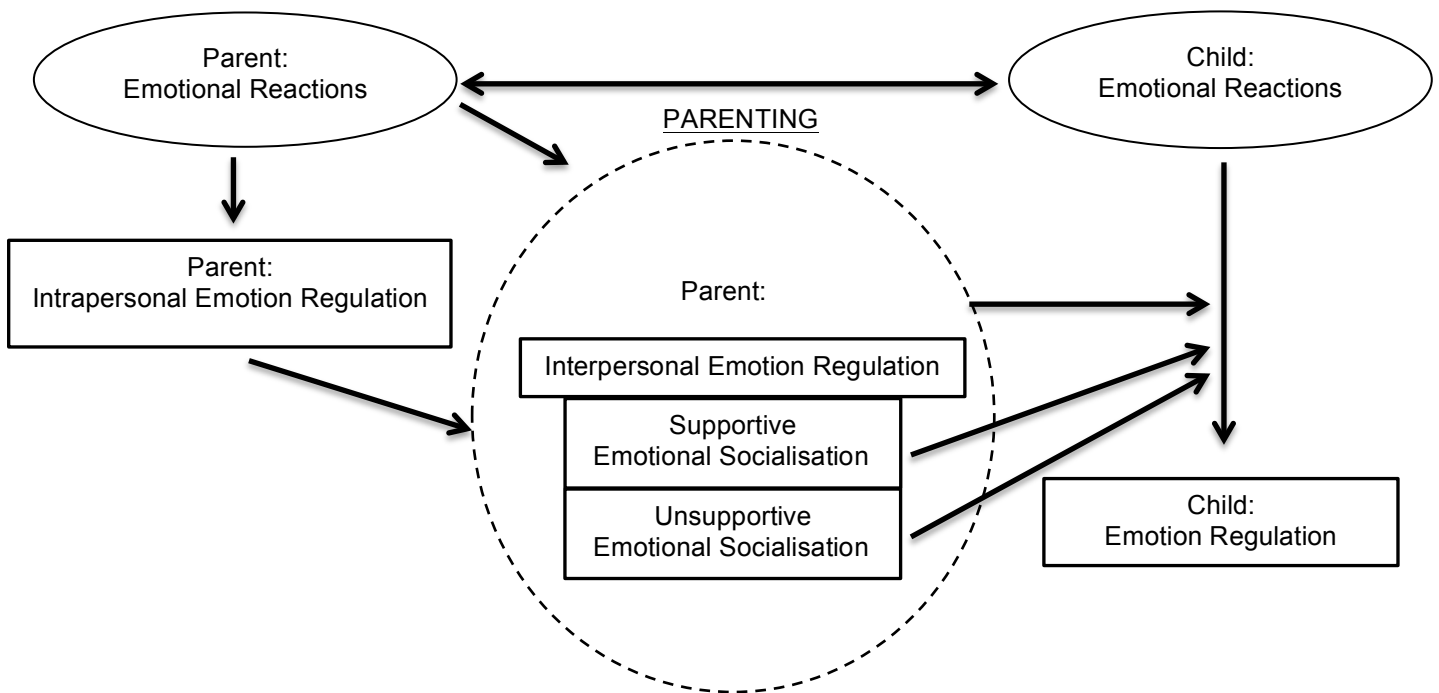


Figure 1: Hypothesised Relationships Between Parent and Child Constructs

Based on the existing literature, the following hypotheses are formulated:

Hypothesis 1: Parents' intrapersonal and interpersonal emotion regulation abilities will be concurrently and longitudinally associated with child's emotion regulation abilities.

Hypothesis 2: The relationship between parents' and their child's emotion regulation abilities will be mediated by parents' emotion socialisation responses to their child's display of emotional reactions.

Hypothesis 3: The predictive effect of parents' intrapersonal and interpersonal emotion regulation abilities and the mediation of parents' responses to children's emotional reactions will be consistent across two distressing emotions: fear and anger.

## Method

### Participants

The sample presented in this thesis was part of a broader longitudinal study that explored the relationship between mother-infant interaction and children's abilities to self-

regulate, recruited through the Child Development Research Database at the University of Reading. Families were contacted by phone and were given a brief overview of the study. For those interested, an information sheet and consent form were posted to them. Mothers received a £10 gift card for participating in each wave of the study.

Of the 128 mother-child dyads that completed all components of the study at wave one, 19 dyads were lost to attrition and 1 set of data was incomplete at wave two ( $n = 108$ ). At wave three, 98 mother-child dyads attended the testing session, with 10 dyads being lost to attrition. Four sets of data were subsequently lost due to video recording technical difficulties. A power analysis was conducted to determine the sample size required to detect an anticipated medium effect of  $f^2 = 0.15$  based on two similar studies (Premo & Kiel, 2014; Perry et al., 2012). It was found that a minimum sample size of  $n = 84$  was preferred for 80% power at 5% significance level. This number is within the final sample size of the current study after accounting for attrition. A total of 94 mother-child dyads, which participated in all three waves of the original project, were included in the analysis for the current study.

Forty-six of the 94 infant participants were female. The mean age of the children at the first visit was 15.10 months, with a range of 14.11 to 16.02 months ( $SD = 0.32$ ). Nine mothers did not provide their age. For those that responded, mothers' mean age at the first visit was 34.96 years, with a range of 23 to 46 years ( $SD = 4.24$ ). For the following demographic information, eight participants' data were missing due to lack of response. Of those that provided a response, 76.7% of mothers identified themselves as White British, 7% Indian British, 5.8% White Other, 2.3% Mixed Other, 1.2% Pakistani British, 1.2% African British, 1.2% Caribbean British, 1.2% Mixed Asian British, 1.2% Mixed Caribbean British, 1.2% Chinese and 1.2% as "Other". 34.9% of mothers in this sample obtained a postgraduate degree, another 34.9% obtained a bachelor's degree and the remaining 30.2% had obtained GCSEs or higher. Family gross income ranged from below £10 000 to higher than £70 000, with a mode of 32.6% of families earning between £30 000 to £50 000.

## **Procedure**

Upon arrival, mothers and babies were brought to a comfortable observational room where the researcher went over the procedures of the study and re-affirmed consent. They were also informed that they could leave the study at any point without having to provide any explanation. The researcher then conducted a brief interview and mothers were asked to complete a packet of questionnaires, before the commencement of the emotion-regulation tasks. Each child underwent the Stranger Approach task at age 15 months (which forms the focus of this thesis) and the Attractive Toy task (which is examined as part of the secondary analyses). These tasks were taken from the Laboratory Temperament Assessment Battery (Lab-TAB), and were designed to elicit emotional responses and regulation (Goldsmith & Rothbart, 1999). Observational data was video-recorded. The same procedure was repeated when the child participants were aged 26 and 37 months. The study took place in the School of Psychology and Clinical Language Sciences, University of Reading. All researchers possessed enhanced CRB clearance for working with children.

**Fear episode (Stranger approach).** This modified version of the Lab-TAB task was designed to elicit wariness or mild fearfulness in the infant. It is a structured episode during which a novel adult enters the room and proceeds to approach the infant in a series of graded steps. Firstly, the stranger approaches the child from the door for 20 seconds and greets the child (5s) before moving closer and pausing next to the child for another 20 seconds. Then, the stranger tickles the child and initiates conversation for 40 seconds. The mother is present throughout this initial episode but is instructed to sit behind the child and not intervene unless the infant becomes distressed during the procedure for any reason. The episode proceeds with the stranger then inviting the mother to sit next to the child and verbally join in the conversation for one minute. Finally, the mother is instructed to help the child engage in a play interaction with the stranger using a novel toy for another minute.

**Anger episode (Attractive toy task).** This is a structured episode designed to elicit feelings of frustration in the child and is a modified version of the Lab-TAB Attractive toy task. In this task, the child was presented with a novel toy that was subsequently removed

and placed in sight of the child, but out of his/her reach. Throughout the task, each child would experience four separations from the toy.

At the start of the episode, the child was placed in a highchair against the long side of a rectangular table, with the researcher and mother seated adjacent to the child, at the short sides of the table. A Plexiglass screen stood across the centre of the table, in front of the child. Firstly, a multi-coloured and interactive toy was presented and the researcher showed the child how to play with it (15s). The child was then allowed to play with it (15s). The trial proceeds with the toy being taken away from the child and placed behind the screen (30s) and ends with the toy returned to the child to play with it again to maintain interest in the toy (15s), before it was removed and placed behind the screen again (30s). During this initial trial, mothers were instructed to remain neutral and not communicate with her child during the two periods of 30 seconds wait. On the second trial, the toy was taken away from the child again and placed behind the screen for 60 seconds, and mothers were instructed to communicate with the child verbally and not provide any other additional support, until the toy was returned to the child for 15 seconds. Finally, the toy was placed on the floor, and the mother was instructed to remove her child from the chair and to communicate freely with the child, but not allow her child to play with the toy for another 60 seconds.

## **Measures**

**Parental emotion regulation.** Mothers were asked to complete the Emotion Regulation of Others and Self (EROS; Niven et al., 2011) at Wave 2. This self-report measure was developed to assess interpersonal emotion regulation strategies used by adults to increase pleasant or unpleasant emotions in self or others. Mothers were asked about the extent to which they had used the following strategies over the past month to change their own (intrapersonal) or another person's (interpersonal) feelings on a scale from 1 (*Not at all*) to 5 (*A great deal*). Nine interpersonal emotion regulation items examine the use of strategies to improve (e.g. I gave someone helpful advice) or worsen (e.g. I acted annoyed towards someone) other people's feelings whilst 10 items examine the use of intrapersonal emotion regulation strategies to improve (e.g. I sought support from others) or

worsen (e.g. I expressed cynicism) one's own feelings. The creators of the EROS found adequate internal consistency for the scales (others' affect improving – 6 items,  $\alpha = 0.82$ ; others' affect worsening – 3 items,  $\alpha = .74$ ; self affect improving – 6 items,  $\alpha = .82$ ; self affect worsening – 4 items,  $\alpha = .80$ ). In this study, 88 of the 94 mothers completed the questionnaire and the reliability of the scale was found to be similarly adequate (others' affect improving,  $\alpha = 0.84$ ; others' affect worsening,  $\alpha = .64$ ; self affect improving,  $\alpha = .86$ ; self affect worsening,  $\alpha = .77$ ).

**Maternal depression.** Mothers were also asked to complete the Centre for Epidemiologic Studies Depression Scale (CES-D) at Wave 2. This 20-item self-report measure is a screening tool that assesses symptoms of depression in the general population. Mothers rated depressive symptoms on a scale from 0 (*Rarely or not at all*) to 4 (*Most or all of the time*), with higher total scores indicating greater symptoms of depression. According to Radloff (1977), the CES-D has high internal consistency ( $\alpha = .84$  to  $.85$ ). In this study, 91 of the 94 mothers completed the measure and the reliability of the scale was found to be acceptable ( $\alpha = 0.69$ ).

**Parental responses to child emotions.** The Parental Response Questionnaire (PRQ) was administered at wave three to assess mothers' responses to their child across seven different emotional scenarios (see Appendix A for a copy of the questionnaire). The PRQ is a variation of the Coping with Children's Negative Emotions Scale (CCNES; Fabes et al., 1990) and was adapted to suit the age group of the children in the current study. Furthermore, instead of assessing the likelihood that a parent might respond to their child in a particular manner (which is how the CCNES is designed), the PRQ sought to measure how parents have actually responded to their child in the past within a given time frame. Mothers were asked how they have responded to their child in the past month in seven scenarios (e.g. When my child has lost or broke something special and reacted with tears, I have...). Each scenario was followed by nine parental responses and mothers rated how they have responded on a scale of 1 (*Very rarely*) to 7 (*Very often*). In addition to the six responses used in the standard CCNES (emotion-focused, problem-focused, expressive

encouragement, distress, minimisation and punitive), the PRQ also includes three other parent responses: dismissing/minimising, ignoring and provision of physical comfort. Dismissing/minimising responses occur when parents opted to stop children's expressions of emotions with their words or actions (e.g. Told my child to stop being silly). Ignoring responses occur when mothers opted to not respond to their child's behaviour (e.g. Ignored my child's upset feelings until he/she stops being upset). Physical comfort responses are strategies that mothers have chosen to use in response to their child's emotions (e.g. Physically comforted my child with hugs and told him/her it will be OK).

The PRQ was first tested on a sample of parents with children in the target age group, to explore its factor structure, before it was administered to the mothers in the current study. This initial sample of parents was recruited through an Internet advertisement on social media and word of mouth. 130 parents completed the pilot PRQ. Only parents who completed all items for their child's age group were included in the analyses for the initial sample. 101 parents completed all 5 scenarios of the PRQ. Of the 101 parents, 72 had children who were 36 months and older, and completed two additional scenarios that targeted older children. Fifty-one parents based their ratings on their daughters and 50 parents based ratings on their sons. In this separate pilot sample, children fell within three age groups: 24 to 37 months (40.6%), 36 to 48 months (49.5%) and 49 to 60 months (9.9%). 79.2% of parents identified themselves as White British, 5% as White Other, 3% as Pakistani, 2% as Mixed White and Asian, 1% as Mixed White and Black African and 10% as "Other". Family gross income ranged from below £10 000 to higher than £70 000, with a mode of 24.8% of families earning between £30 000 to £50 000.

The factor structure of the questionnaire measuring emotion socialisation, the PRQ, was examined using Principle Component Analysis (PCA). PCA on the initial sample that completed the PRQ revealed that the items loaded strongly on three separate factors. Most of the items loaded strongly on two main composites: supportive and unsupportive parental responses, consistent with the CCNES. A third factor emerged, comprising supportive parental responses: physical comfort (4 items; e.g. Physically comforted my child with

cuddles) and expressive encouragement (6 items; e.g. Told my child it's OK to cry when you are unhappy, Told him/her you understand why he/she would feel unhappy) responses to children's display of emotions.

It was also noted that if only two factors were specified for the PCA, as per the two composites (supportive and unsupportive parental responses) of the CCNES that the PRQ is based on, the items making up the third factor loaded on the supportive parental responses factor. The internal consistency for the supportive composite was high ( $\alpha = 0.92$ ) and it was noted that the removal of the physical comfort and expressive encouragement responses led to a lowering of Cronbach's alpha, suggesting the usefulness of these additional items in measuring supportive parental responses. The internal consistency for the unsupportive factor was also high ( $\alpha = 0.92$ ) and removal of the novel parent responses (dismissive and ignoring parental responses) resulted in the lowering of Cronbach's alpha, suggesting the usefulness of these additional items in the PRQ when measuring unsupportive parental responses.

Based on the results of the initial testing, the PRQ was further adapted for the current study. Of the seven scenarios used in the pilot, six scenarios were kept (sadness, loss, nervous, angry, fear, angry) and one was removed (separation scenario). The separation scenario was removed as it is likely to measure an aspect of parental responses specific to child anxieties related to separation with parents, and may not be as generalizable and reflective of how parents manage more general, primary emotions. Instead, an anger scenario was added in the revised PRQ to examine parental responses to children's display of anger when asked to stop an enjoyable activity (i.e. When I have told my child that they have to stop doing what they are doing and they have got upset, cross or thrown a tantrum [e.g., have to leave the park to go home or stop playing to get ready for bed], I have:), which is likely to evoke similar emotions elicited by the Attractive Toy task.

In the current longitudinal study, 84 of the 94 mothers completed the PRQ. The internal consistency for the unsupportive composite was high ( $\alpha = 0.83$ ). The internal consistency for the supportive composite was also high ( $\alpha = 0.91$ ) and it was similarly noted

that the removal of the items from the new scenario would lead to a lowering of Cronbach's alpha, suggesting the usefulness of these additional items in measuring supportive parental responses.

### **Data Analysis Procedures**

**Child behaviour coding.** The video-recordings data was coded using a coding scheme based on the Lab-TAB operational manual designed by Goldsmith & Rothbart (1999). Additional variables were included in order to measure child fear/anger reactivity and emotion regulatory behaviours separately.

For the anger episode, the trials were timed from the point that the researcher lifted her hand from the toy that had either been placed behind the Plexiglass screen or on the floor, and the timings were divided into 5s epochs that were coded separately. For the fear episode, the trials were timed from the point that the stranger entered the room and each 10s epoch was coded separately. The anger and fear reactivity codes required three levels of intensity (facial fear, vocal distress and escape behaviour). All observed emotion regulatory behaviours were coded as present or absent for each 10s epoch. The variables coded and a brief definition can be seen in Table 1.

The primary investigator had completed the coding of the video data for the anger episode, whilst three trained researchers completed the coding of the video data for the fear episode. Reliability and accuracy were monitored intermittently throughout the coding process. A separate researcher, trained by the primary investigator, had coded 95 videos (across two waves). For the current study, the primary investigator trained the author and another doctoral trainee (see Appendix B for Statement on Joint Working) to jointly code the remaining videos. The two coders completed five videos initially and decisions were discussed and made for each code. Another five were then completed independently before ratings were compared again. Inter-rater reliability was checked to ensure that coding was consistent with the initial coder. Intra-class correlation (ICC) was .79, with 95% CI from .74 to .83 between the three coders for the first 10 videos. Once the researchers were confident that the criterion for each code was established, the remaining videos were coded



separately. Both researchers coded one in every 10 videos in order to assess inter-rater reliability. Intra-class correlation (ICC) between the two researchers across 19 videos was .98, with 95% CI from .98 to .99.

**Table 1. Definitions of emotion reactivity and regulatory behaviours in anger and fear episodes**

<b>Coded Behaviour</b>	<b>Definition</b>
<b>Anger Episode</b>	
<b>Reactivity codes:</b>	
Intensity of facial anger	Peak intensity of facial anger (scored on 0 to 3 scale)
Distress vocalisations	Peak intensity of distress vocalisation (scored on 0 to 3 scale)
Intensity of struggling	Behaviours demonstrated in attempt to reach toy, e.g. pulling/pushing against the barrier and attempting to get out of highchair or away from mother (scored on 0 to 4 scale)
<b>Fear Episode</b>	
<b>Reactivity codes:</b>	
Intensity of facial fear	Peak intensity of facial fear (scored on 0 to 3 scale)
Intensity of facial sadness	Peak intensity of facial sadness (scored on 0 to 3 scale)
Distress vocalisations	Peak intensity of distress vocalisation (scored on 0 to 5 scale)
Escape behaviour	Peak intensity of behaviours to escaping Stranger e.g. turning away, sinking into chair or hitting/pushing (scored on 0 to 3 scale)
<b>Anger and Fear Episodes</b>	
<b>Emotion regulation codes:</b>	
Withdrawal	Briefly shifts gaze away from stimuli (Toy or Stranger) without focusing on any particular object (present or absent)
Looks to Mother	Looks towards mother (present or absent)
Approaches Mother	Reaches for or moves towards mother (present or absent)
Gaze Aversion	Briefly shifts gaze away from stimuli (Toy or Stranger) without focusing on any particular object (present or absent)
Self-Soothing	Use of body part to engage in repetitive manipulation (e.g. thumb sucking, hair stroking; present or absent)
Active Stimulation	Engages in high energy behaviour with no apparent instrumental focus (e.g. leg swinging; present or absent)

**Data reduction for fear episode: Preparatory steps.** The data was first explored to examine the correlations between fear reactivity and emotion regulation variables so as to aggregate them into composite scores. Correlations and factor analyses were run on each variable across the three waves.

Results of the correlation analyses revealed significant correlations between the fear reactivity variables of facial fear, facial sadness, escape behaviours and distress vocalisation (ranging from  $r = .26, p < .01$  to  $r = .68, p < .01$ ). Principle component analyses further supported the aggregation of these variables, with all four loading strongly on a single factor. The mean scores for each variable were then transformed using weighted standardisation, allowing them to be combined and for mean differences to be observed across episodes. The composite variable will henceforth be referred to as “Fear Reactivity”.

As for the regulatory behaviour data, analyses revealed significant correlations between the variables of active stimulation, gaze aversion and self-soothing (ranging from  $r = -.25, p < .01$  to  $r = .34, p < .01$ ) and the variables of withdrawal, looks to mother and approaches mother (ranging from  $r = .37, p < .01$  to  $r = .21, p < .01$ ). Principle component analyses supported the aggregation of these variables with the six items loading strongly on two separate composites. The mean scores for each variable were then transformed to allow for aggregation. The aggregate that comprised active stimulation, gaze aversion and self-soothing will henceforth be referred to as “Redirected Action” and the aggregate that comprised withdrawal, looking to mother and approaching mother will be referred to as “Social Regulation”.

**Data Analyses.** Regression analyses will be used to investigate whether parents’ emotion regulation abilities (measured at wave two,  $n = 89$ ) predicted concurrent child emotion regulation (observed at wave two) and later child emotion regulation (observed at wave three) in a fear-provoking task, after controlling for earlier child emotion regulation. After examining this relationship, multiple regression analyses will be used to test whether this relationship is mediated by unsupportive or supportive parental responses to their children as measured by the PRQ at wave three. This will be tested using child emotion regulation observed at wave three after controlling for earlier child emotion regulation observed at wave two.

## Results

### Preliminary Analyses

**Child gender.** The data was examined for any gender differences in child emotion regulation variables (reactivity, redirected action and social regulation). No significant gender difference was found at wave one (15 months). At wave two (26 months), a significant gender effect was found for child reactivity,  $F(1, 92) = 6.75, p < .05$ , with boys obtaining higher ratings of reactivity than girls. No significant gender effect was found for redirected action and social regulation strategies. At wave three (37 months), a significant effect was found for child reactivity,  $F(1, 92) = 4.22, p < .05$ , with boys obtaining higher ratings of reactivity than girls. A significant gender effect was also found for redirected action strategies,  $F(1, 92) = 7.44, p < .01$ , with girls observed to exhibit greater use of these strategies than boys. No significant gender effect was found for social regulation strategies.

**Maternal depression.** The data was examined for any relationship between mothers' self-report of depressive symptoms and mothers' use of interpersonal emotion regulation strategies to manage their own and others' emotional responses. It was found that maternal depression positively correlated with use of emotion regulation strategies that worsen own ( $r = .38, p < .05$ ) and others' ( $r = .31, p < .05$ ) emotions. Maternal depression did not significantly correlate with use of emotion regulation strategies that improve own and others' emotions.

Descriptive statistics for all parent and child variables are presented in Table 2 below, listed separately by the time points they were measured.

Table 2: Descriptive data

	<i>M</i>	<i>SD</i>
<b>Wave One</b>		
<i>Child Variables</i>		
Reactivity (Fear)	202.72	34.81
Redirected Action (Fear)	152.42	18.00
Social Regulation (Fear)	144.76	17.66
<b>Wave Two</b>		
<i>Child Variables</i>		
Reactivity (Fear)	208.99	35.35
Redirected Action (Fear)	135.72	22.31
Social Regulation (Fear)	151.88	20.19
<i>Parent Variables</i>		
CES-D: Maternal Depression	6.77	6.12
EROS: Improving Others' Affect	3.67	0.71
EROS: Worsening Others' Affect	1.24	0.40
EROS: Improving Own Affect	3.31	0.79
EROS: Worsening Own Affect	1.34	0.48
<b>Wave Three</b>		
<i>Child Variables</i>		
Reactivity (Fear)	188.64	13.02
Redirected Action (Fear)	161.87	14.61
Social Regulation (Fear)	153.36	25.23
Reactivity (Anger)	-0.93	0.32
Redirected Action (Anger)	0.27	0.18
Social Regulation (Anger)	1.10	0.24
<i>Parent Variables</i>		
PRQ: Supportive Emotion Socialisation	5.20	0.84
PRQ: Unsupportive Emotion Socialisation	2.58	0.61

Note: T-values, prior to transformation as described in the Data Reduction process in earlier section, are reported for the Reactivity (Fear), Redirected Action (Fear) and Social Regulation (Fear) variables. Z-values are reported for the Reactivity (Anger), Redirected Action (Anger) and Social Regulation (Anger) variables, as these are values as recorded by the previous researcher. All analyses were run using the Z-values of the variables, after transformation where necessary.

### Effects of Predictors on Child emotion regulation

Hierarchical regression analysis was conducted to test the effects of parental emotion regulation strategies and parental responses on child emotion regulatory abilities after controlling for earlier child emotion regulation. All variables were centred at their means.

To investigate the first hypothesis that parental emotion regulation predicts child emotion regulation after controlling for baseline child emotion regulation (observed at wave one, 15 months), child gender and maternal depression, a regression analysis was conducted for child gender, the three child emotion regulation variables (reactivity, redirected action and social regulation) and four parental emotion regulation variables (others' affect improving, others' affect worsening, self affect improving and self affect worsening). The analyses were done on mother-child dyads that completed all aspects of the EROS and CES-D (n = 88). In order to provide support for this hypothesis, results should confirm that parents' emotion regulation measured by the EROS (at wave two, 26 months) is a significant predictor of each child emotion regulation variable at waves two and three, after controlling for child gender, maternal depression and prior child emotion regulation (observed at waves one and two respectively). Findings are summarised in Table 3.

**Table 3: Results of Regression Analyses**

Predictors	Outcomes	
<b>Parent emotion regulation strategies</b>	<b>Reactivity at Wave 2</b>	<b>Reactivity at Wave 3</b>
	$\Delta R^2 = .02, p = .75$	$\Delta R^2 = .08, p = .13$
Improve Others'	$\beta = -.12, p = .38, ns$	$\beta = -.12, p = .39, ns$
Worsen Others'	$\beta = -.05, p = .68, ns$	$\beta = -.26, p = .04^*$
Improve Own	$\beta = .07, p = .60, ns$	$\beta = -.07, p = .60, ns$
Worsen Own	$\beta = .13, p = .29, ns$	$\beta = .08, p = .53, ns$
	<b>Redirected Action at Wave 2</b>	<b>Redirected Action at Wave 3</b>
	$\Delta R^2 = .03, p = .55$	$\Delta R^2 = .03, p = .66$
Improve Others'	$\beta = .15, p = .26, ns$	$\beta = -.05, p = .73, ns$
Worsen Others'	$\beta = .03, p = .79, ns$	$\beta = -.02, p = .86, ns$
Improve Own	$\beta = -.20, p = .15, ns$	$\beta = .18, p = .20, ns$
Worsen Own	$\beta = -.12, p = .35, ns$	$\beta = -.06, p = .63, ns$
	<b>Social Regulation at Wave 2</b>	<b>Social Regulation at Wave 3</b>
	$\Delta R^2 = .02, p = .80$	$\Delta R^2 = .08, p = .24$
Improve Others'	$\beta = .16, p = .28, ns$	$\beta = -.13, p = .35, ns$
Worsen Others'	$\beta = .05, p = .69, ns$	$\beta = -.17, p = .18, ns$
Improve Own	$\beta = -.05, p = .74, ns$	$\beta = -.09, p = .52, ns$
Worsen Own	$\beta = -.05, p = .68, ns$	$\beta = .12, p = .35, ns$

\*Significant at  $p < .05$

Results revealed that parental emotion regulation strategies did not significantly predict child emotion regulation when children were 26 months old. However, it was noted

that when children were 37 months old, parent use of emotion regulation strategies that worsen other people's affect were found to be a negative predictor of children's reactivity, after controlling for gender, maternal depression and child emotion regulation at earlier waves. The findings suggest that a greater parental use of worsening others' affect strategies is related to *reduced* child reactivity. However, this was in the opposite direction of the hypothesised relationship between parental interpersonal emotion regulation and child emotion regulation. Thus, the first hypothesis was not supported.

### **Mediation Effects**

To investigate the second hypothesis, regression analyses were conducted to examine if parent responses to children's displays of emotions (as measured by the PRQ at wave three) mediates the relationship between parents' emotion regulation and child emotion regulation. The analyses were done on mother-child dyads that completed all aspects of the EROS and PRQ ( $n = 80$ ). For parent responses to children's displays of emotions to be a mediating variable, parent emotion regulation should predict parental emotion socialisation responses and parental emotion socialisation responses should predict child emotion regulation. In addition, when parent emotion socialisation responses and parent emotion regulation are examined together, the effect of parent emotion regulation should be reduced or be eliminated whereas the effect of parent responses should remain significant.

Parent emotion regulation strategies (measured at wave two) that *improve* others' (i.e., interpersonal) and own (intrapersonal) emotions were found to be significant predictors of supportive parent emotion socialisation responses at wave three (others',  $\beta = .31$ ,  $t(79) = 2.87$ ,  $p < .01$ ; own,  $\beta = .29$ ,  $t(79) = 2.72$ ,  $p < .01$ ) whilst strategies that *worsen* others' (interpersonal) and own (intrapersonal) emotions were not significant predictors of supportive parent emotion socialisation responses. On the other hand, parent emotion regulation strategies (measured at wave two) that worsen others' (interpersonal) and own (intrapersonal) emotions were found to be significant predictors of unsupportive parent emotion socialisation responses at wave three (others',  $\beta = .38$ ,  $t(79) = 3.66$ ,  $p < .001$ ; own,

$\beta = .32$ ,  $t(79) = 3.00$ ,  $p < .01$ ) whilst parent emotion regulation strategies that improve others' (interpersonal) and own (intrapersonal) emotions were not found to be significant predictors of unsupportive parent responses.

However, analyses revealed that supportive and unsupportive parental responses were not significant predictors of child reactivity, social regulation and redirected action strategies at wave three. Taken together, the findings suggest that both composites of parental emotion socialisation did not significantly mediate the relationship between parental emotion regulation and child emotion regulation. Thus, the second hypothesis was not supported.

### **Specificity versus Generality of Associations with Child ER**

To investigate the third hypothesis, that the predictive effects of parents' emotion regulation and emotion socialisation on child emotion regulation are consistent across two emotions (fear and anger), regression analyses were run in relation to the outcome variable of child reactivity and child use of emotion regulation strategies in the anger-provoking Attractive Toy task at wave three. Similar to the above analyses, the following covariates were controlled in the analyses: child gender, maternal depression and corresponding child behaviour at wave two. Results revealed that parental use of interpersonal emotion regulation strategies that worsen other people's affect were found to be a positive predictor of child's use of redirected action at wave three ( $\beta = .37$ ,  $t(79) = 2.91$ ,  $p < .01$ ). However, both supportive and unsupportive composites of parental emotion socialisation responses were not found to be a significant predictor of the child behaviour variables in the anger episode, indicating that parental emotion socialisation responses did not mediate the relationship between parental emotion regulation and child emotion regulation. Thus, the third hypothesis was not supported.

## **Discussion**

In this study, it was predicted that parents' emotion regulation abilities would be associated with better child emotion regulation abilities; however, limited evidence was found

to support this hypothesis. Results revealed that the four types of parental emotion regulation strategies that either improve or worsen their own or others' affect were not significant predictors of child use of emotion regulation strategies such as social regulation and redirected action. However, parental use of emotion regulation strategies that worsen others' affect was found to be a significant, but negative, predictor of child reactivity, characterised by displays of facial fear, sadness, distress vocalisations and escape behaviour. Parents' use of emotion regulation strategies that improve their own or others' affect, and worsen own affect were not found to significantly predict child reactivity. The finding that the deliberate worsening of others' feelings (e.g. "I acted annoyed towards someone" or "I told someone about their shortcomings") is related to reduced child display of emotional reactivity is consistent with the view that children who experience their parents as an additional source of emotional distress, may thus display reduced emotional cues so as not to invite undesirable emotional support (Main & Hesse, 1990). It is possible that the child's expectation is that their display of emotionality may trigger unhelpful parental responses, thus a reduced reactivity may act as a pre-emptive measure to reduce the possibility of undesirable or unwanted support from their parents.

The second hypothesis, where the association between parents' emotion regulation strategies and child's emotion regulation strategies was expected to be mediated by parents' use of emotion socialisation strategies, was not supported by the results of this study as well. Both supportive and unsupportive parental emotion socialisation responses were not associated with child reactivity and child use of redirected action or social regulatory strategies. Contrary to initial expectations, there was no significant relationship between parent emotion socialisation and observed child emotion regulation. These findings are not consistent with earlier findings – several studies have established a positive relationship between child emotion regulation and supportive parental emotion socialisation and a negative relationship between child emotion regulation and unsupportive parental emotion socialisation (Shewark & Blandon, 2015; Perry et al., 2012; Gunzenhauser et al., 2013). Neither of the relationships was replicated in the current study. A possible reason for this



difference in findings could be methodological – that observational methods were used in this study to measure child emotion regulation behaviours, whereas all of the studies referred to above relied on parent self-report of their child emotion regulation abilities, which Perry et al. (2012) reported that whilst there was a significant relationship between parent self-reports of emotion socialisation and child emotion regulation that was measured using the Emotion Regulation Checklist (ERC; Shields & Cicchetti, 1997), there was no significant relationship between parent self-report of supportive emotion socialisation and observed child emotion regulation on a frustrating task at ages 26 and 37 months. The authors replicated the same findings for unsupportive emotion socialisation responses. This finding hints at a disparity between parental perceptions and observed emotion regulation, or at the very least, suggests that earlier findings could be due to the presence of shared-reporter biases.

A noteworthy finding of this study is that parent use of emotion regulation strategies to improve others' and own emotions significantly predicted their use of supportive emotion socialisation responses, suggesting that parents who use emotion regulation strategies to improve emotions in general are more likely to respond to their child's display of emotions in supportive ways. This study also found that parent use of emotion regulation strategies to worsen others' and own emotions significantly predicted their use of unsupportive parent emotion socialisation responses, suggesting that parents who use emotion regulation strategies that worsen emotions are more likely to respond to their child's display of emotions in unsupportive ways. This suggests that parents who seek to improve emotions in self or others tended to focus on adopting emotion socialisation strategies that seek to nurture their children's ability to manage their emotions constructively, whereas the use of emotion regulation strategies to worsen emotions in self or others tended to be related to emotion socialisation responses that are unhelpful or unsupportive.

The third hypothesis, where the predictive effect of parents' emotion regulation abilities and the mediation of parents' responses to their child's emotional reactions, will be consistent across two emotional contexts, was not supported. Parents' supportive and

unsupportive emotion socialisation responses to their child's emotions were not found to significantly predict any of the child emotion regulation variables across both fear and anger episodes. This was in contrast with the findings reported in the systematic review under the previous section of this thesis, raising the likelihood that parents' perception of their socialisation responses through self-report questionnaires, and their motivations behind these responses may play out differently in actual interactions with their children. Interestingly, results suggested that parents' use of emotion regulation strategies that worsen others' emotions were found to be a significant positive predictor of child use of redirected attention strategies, such as self-soothing or active stimulation, at wave three in the anger episode, but this result was not found in the fear episode. Also, it was notable that parents' use of emotion regulation strategies that worsen others' emotions predicted child reactivity in the fear episode but not in the anger episode. Taken together, these findings suggest that different emotion regulatory pathways may exist for the two distressing situations. This was in line with findings that infant use of putative emotion regulatory strategies was associated with a reduced level of anger expression, but not fearful expression (Buss & Goldsmith, 1998). Diener and Mangelsdorf (1999) also discovered that toddlers aged 18 to 24 months exhibited the use of more regulatory strategies when placed in anger-evoking situations than in fear-evoking situations. Findings of these studies and the current study propose the possibility that children find emotion regulatory strategies to be more useful when regulating anger than regulating fear. In addition, the finding that parental use of emotion regulation strategies that worsen others' emotions was related to increased child use of self-directed emotion regulation strategies instead of social regulation strategies in the anger situation may indicate that children who experience their parents as an additional source of distress may rely on independent, self-regulatory strategies in response to their feelings of frustration in the Attractive Toy task.

One way to interpret the absence of a meaningful influence of parental variables on child emotion regulation is to consider it within the developmental framework of children's social cognitive abilities. The predictive relationship of parental emotion regulatory abilities

on children's emotion regulation was only found at wave three (37 months), and was not significant when the child was younger (26 months). It may be helpful to consider the influence of a child's temperament on their emotional arousal at earlier ages (Thompson, 2006). The displayed emotion reactivity and use of regulatory strategies could be automatic and a reflection of a child's temperament at earlier ages. On the other hand, the emergence of a significant relationship between parent and child emotion regulation at a later age suggests that external influences may have a stronger influence and be displayed only when a child is at an older age. A closer look at these processes in early child development will be helpful in shedding light on the relationship between a child's innate emotion regulatory abilities and the extent of environmental influence.

### **Study Implications**

This study offered a closer look at the role of the parent in the development of child emotion regulation strategies, which has been found to underpin a myriad of child outcomes (e.g. Eisenberg et al., 2002; Feng et al., 2009; Halligan et al., 2013; Mullin & Hinshaw, 2007). In the literature, children's ability to regulate their emotions was found to be influenced by their parents' effective use of emotion socialisation responses (Shewark & Blandon, 2015; Perry et al., 2012; Gunzenhauser et al., 2013). The current study found a notable relationship between parents' emotion regulation abilities and the supportiveness of their emotion socialisation responses. In particular, results suggested that parents who reported greater use of emotion regulation strategies that improve their own and others' emotions tended to also employ a greater use of supportive responses to their children's display of emotions. Conversely, parents who reported greater use of emotion regulation strategies that worsened their own and others' emotions were found to use more unsupportive emotion socialisation responses with their children. This raises the question of the importance of parental ability to regulate their emotions in relation to their ability to respond supportively to their children's display of emotions, presenting an additional pathway through which parenting interventions could be developed.

On the other hand, the current study found that parental abilities to regulate their own emotions (intrapersonal regulation) did not predict observed child emotion regulation outcomes. This absence of significant findings raises the possibility that parents' ability to regulate their own emotions do not have a strong impact on child emotion regulation outcomes, suggesting that parents' ability to regulate others' emotions may be more important or perhaps should be the target focus when designing parent training or interventions. In therapeutic settings, it is also helpful and essential to consider other environmental influences, in addition to parental factors, when formulating and understanding a child's ability to manage their emotional experience.

An unexpected finding in relation to the influence of emotional contexts on the relationship between parental emotion regulation and child emotion regulation strategies was found, suggesting that the effect is not consistent across the two negative emotions of fear and anger. This difference in findings across the two emotions suggests that the relationship between parent and child emotion regulation may not be generalizable across different emotion contexts. Instead, it demonstrates that more could be done to consider the motivations behind children's emotional displays and regulatory behaviour for different emotions. Furthermore, the disparity in the study's findings between fear and anger suggests the importance of exploring the relations between parent and child emotion regulation constructs within other emotional contexts, beyond fear and anger.

### **Limitations and Future Research**

Several limitations to the study's findings are identified. The current study focused on maternal emotion regulation abilities and responses in relation to child emotion regulation behaviours; undeniably, the role of fathers' regulatory abilities and responses to their child emotion regulation behaviours will serve to expand this body of research. Another limitation of this study concerns the measurement of child emotion regulation variables at infant and toddlerhood, but not beyond. As emotion regulatory capacities progress with age due to developmental changes, along with the increased societal expectations and emotional demands of a school-aged child, it would be interesting to understand the continued

influence of parental emotion regulation strategies and emotion socialisation responses on a child's use of emotion regulation strategies. Given the differences in cultural expectations of emotional displays, another limitation of this sample is the relative homogeneity of the sample for the study, which mainly comprised White-British mother-child dyads. An interesting avenue of research would be to investigate the relationships of the constructs in a more culturally diverse sample, in comparison to the findings of this study.

Lastly, each of the study's constructs had several aspects. For example, there were four aspects of parent emotion regulation and three aspects of child emotion regulation measured. This resulted in a need to run the statistical analyses separately, increasing the risk of false positives in the study's results. Whilst the power of the study was established in the study design and sample size collected, findings reported should be interpreted with caution and understood within this statistical limitation. Future research within this area should consider the use of different measures so as to reduce the probability of Type I error.

## **Conclusion**

The current study examined the relations of parental emotion regulation and emotion socialisation and its influence on child emotion regulatory abilities across two different emotional contexts. Parents who reported greater use of emotion regulatory behaviours that worsen emotions in others were found to be related to reduced child reactivity in a fear-inducing situation and increased child use of self-soothing and stimulatory behaviours in an anger-inducing situation. Parents who reported greater use of emotion regulation strategies that improve emotions tended to use more supportive parental emotion socialisation practices whereas parents with greater use of emotion regulatory strategies that worsen emotions were linked with unsupportive parental emotion socialisation practices. However, parental emotion socialisation was not found to be associated with child emotion regulation, suggesting that the relationship between parent and child emotion regulation may be underpinned by other factors, providing avenues for future research.

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### **Part 3: Critical appraisal**

## **Introduction**

This critical appraisal attempts to examine and reflect on the process of undertaking this research project. It will start with a reflection on the reasons behind the choice of research topic. It then explores the challenges associated with the use of existing data, the coding of observational data and the difficulties associated with reviewing the studies examining emotion socialisation. It will conclude with a discussion of how my perception of my research interests has changed as a result of doing this.

## **Research Rationale**

Prior to training at UCL, I worked for a general psychology department at a paediatric hospital in Singapore. I was struck by the extent of focus on parents and the importance of their support in therapeutic interventions, regardless of their child's clinical presentation. Considering how emotion regulation has implications in a myriad of psychological difficulties, I was keen to find out about the impact of parents' emotion regulation on their child's emotion regulation. Simply put – are some parents better at regulating their emotions and do they have children with better emotion regulation abilities? Are there other parenting factors that may affect this relationship? I was really interested in the extent of parental influences on their children within this context of emotion regulation, which has clinical implications for how children go on to manage and cope with psychological difficulties across their lifespan.

When conceptualising this topic for my project, I was very fortunate to work with my supervisor, who had pre-collected raw data that was in line with this research interest. I was also keen to learn about infant behaviour coding, and gain some practical experience in that area by coding the existing raw video recordings for the study.

## **Using a Pre-Existing Dataset**

There are several advantages of working with a pre-existing data set. Firstly, it allows the researcher to save time as the initial/primary investigator has previously

overcome ethical considerations and the administrative work related to application. It also allows the researcher to skip the uncertainties associated with data collection and to proceed directly to analysis. A definite strength of the current study is that longitudinal data was collected across three time points, thus allowing for the control of baseline emotion regulation abilities as well as neurodevelopmental changes so as to examine parental effects. This would not have been possible within the time limits of the doctorate course if I had to personally collect the data for the research project.

In order to use the dataset, which consisted of raw video recordings, my research partner and I met with the primary investigator in order to understand the infant behaviour coding that was used for the study. We learnt that we had to establish inter-rater reliability, not only with each other, but also with another research collaborator, who had worked on a small percentage of the dataset previously. One of the disadvantages of working with a pre-existing dataset is that contacting a collaborator who had stopped working on a project can often be difficult. When my research partner and I encountered some discrepancies in coding scores at the start of the coding process, we were keen to contact this previous collaborator to seek her opinion. However, as she was only contactable via email, the communication process was slow and unclear. This issue was eventually overcome after a thorough discussion with the primary investigator and a re-examination of the research data on how best to code the raw data. Research, especially longitudinal projects, can be a very long process. On reflection, what could have been useful would be a research diary journaling the decisions made during coding so as to better ensure inter-coder consistencies and improve inter-rater reliability. Good documentation noting the decisions made for each step of the research project is an undeniable asset when using dataset that will likely be worked on by potential collaborators in the future. Furthermore, I better appreciated the role of the primary investigator in overseeing all aspects of the study, to safeguard the longevity of the research data and to provide guidance for any unanticipated issues.

### **Coding Raw Video Recordings**

For the research project, my research partner and I coded raw video recordings. Part of the process was to establish inter-rater reliability not only with each other, but also with the primary investigator and a previous research collaborator. In order to do so, we employed a coding process that was similar to the procedure described by Hruschka, Schwartz, John, Picone-Decaro, Jenkins and Carley (2004). Based on the coding guidelines established by the creators of Lab-TAB (Goldsmith & Rothbart, 1999) and coding notes provided by the primary investigator, we worked on a sample of the dataset in order to identify any disagreements in coding scores. It was critical that we checked in and reviewed every disagreement identified and set up additional guidelines to conduct the coding of the rest of the dataset. This process allowed us to establish an acceptable inter-rater reliability before we went on to code the rest of the dataset and ensured that we continued to have good inter-rater reliability during the entire coding process.

### **Coding Child Behaviour**

During the coding process of the fear episode, it was noted that some of the child behaviours were not captured by the coding scheme. For example, it was observed that that children's regulatory efforts and corresponding reduction in reactivity may be slower in some children, and only observed after the target epoch has ended. This suggests that some children may require more time to execute regulatory efforts and experience a slower corresponding reduction in reactivity to the emotion-provoking situations. Another observation not captured by the coding scheme was that some children reacted with displays of anger (instead of sadness or fear as indicated in the coding scheme) during the fear episode. This was observed more in the later waves, when children were between the ages of two and three, and suggests the varied ways in which children could react to a situation that was construed as fear-evoking. It was also noticed by the two coders that a handful of child participants were observed to have a higher heightened baseline reactivity at the start of the session (e.g. displaying behaviours that suggests fear or sadness prior to the start of the procedure), likely due to the presence of an experimenter who was briefing their

mothers before the start of the procedure. Thus, when the target epoch was coded, it was noted that their reactivity scores tended to be higher. This was also noted by the other coder and resolved through a discussion to take into consideration the time and distress/reactivity displayed by the child before the target epoch was coded and to adjust accordingly. This revision of the coding procedure helped to make it more reliable across the coders and more relevant to the research question. There was an interesting cultural difference noted in the response towards a stranger between the predominantly White British participants and Asian participants. Although this was not highlighted in the empirical paper, it suggests the early influence of culture and parental socialisation of emotion and is an avenue for future research.

### **Aggregating of results for the systematic review**

For the systematic review, I encountered difficulties when I was trying to tie up the findings for what is a relatively new area of research for a previously discussed construct. According to Gottman, Katz and Hooven (1996), meta-emotion philosophy, is a set of thoughts and feelings about an individual's own emotions, which in turn affects how they view their children's emotions. Emotion socialisation has been conceptualised in the research literature in several ways. It includes parental expressed emotion, emotion coaching and parenting behaviours related to parents' meta-emotion philosophy. Although these sub-constructs seem to be different sides of the same coin, they measure different aspects of emotion socialisation. This meant that when reviewing the results from the studies generated by the review, it was found that emotion socialisation has been studied as a concept with various aspects, instead of a construct that lies on a single continuum. Although it was clear that this is an important area of research, it has been studied in a myriad of ways, making it a challenge aggregating the study results to make meaning of my findings. In order to do so, it was critical to go back to the drawing board and clarify the research topic and inclusion/exclusion criteria.

On reflection, the defining of clear limits for the research topic for a systematic review is critical because it affects several aspects of the project. It affects the inclusion/exclusion criteria and the relevance of studies reviewed. The definition of clear limits of the research topic also guides how results of the review can be understood so as to ensure that findings are useful, relevant and has both research and practical implications.

### **Changes in perception of parent-child relationships**

When I first started out on this research project, I was keen to better understand the mechanism of how parents influence their children within the domain of emotion regulation. Emotion socialisation is a construct that suggests that parents could respond to children in a certain way – in order to promote certain emotion regulatory outcomes. The parent-child relationship sets the backdrop of a person's life. In the research literature, the role of parents have been associated with their child's psychological disorders, substance abuse, social relationships, academic motivation – the list goes on. In clinical settings, parents are often held responsible for children's behaviours and given advice on how certain parental responses encourage or exacerbate undesirable behaviours (Caplan, 2013). Another way that this definition has been conceptualised is "mother-blaming" – a term that describes mothers as fully responsible for the actions, behaviour, health and well-being of their child (Jackson & Mannix, 2004). This term places the responsibility largely within the parent, discounting the role of the child from the treatment equation. However, during the process of the systematic review, I came across studies examining the transactional nature of parent-child relationships. For example, Morelen and Suveg (2012) purported that children play a part in the process of emotion socialisation – parents were found to respond supportively when children exhibit adaptive emotion regulation and children were more likely to respond with adaptive regulatory behaviours when parents are supportive. The parent-child relationship, at the heart of it, is based on dynamic interpersonal interactions and the negotiation of goals and needs between two parties. Within the clinical context, while it is imperative to acknowledge the essential role that parents play in their child's development, it



is also critical to balance the treatment equation by recognising the effects of child responses within parent-child interactions. Within the research context, the focus of much parent-child research is based on how parent factors are antecedents of child outcomes. Moving forward, more could be done to recognise the reciprocal effects of children's behaviours and its corresponding impact on parents and their parenting in future research.

### **Additional Clinical and Research Implications**

The first section of the thesis found a good relationship between supportive socialisation responses and child emotion regulatory abilities in the research literature. It also found that unsupportive socialisation responses were associated with poorer emotion regulatory abilities in children. On the other hand, the empirical section of the thesis did not find evidence for a relationship between parental socialisation responses and child emotion regulation. A closer look at the studies examined in the systematic review suggested that for studies that examined participants who are within the same age range as the empirical study (3 years old, Perry et al., 2012; 2 years old, Premo & Kiel, 2014), no significant relationship was found between supportive parental socialisation responses and child emotion regulation. Perry et al. (2012) similarly found the absence of a significant relationship between unsupportive parental socialisation responses and child emotion regulation. These findings suggest that supportive parental socialisation responses may yet to have an impact on children when they are younger and their social cognitive capacities have yet to mature. However, Premo and Kiel (2014) reported findings that children, with parents who responded unsupportively to their displays of emotions, tended to use more attention regulatory strategies (such as distraction and gaze aversion) at age 2 and reduced caregiver regulatory strategies (such as looking to parent or contact-seeking) at age 3. This raises the possibility that children may begin to respond to parental socialisation practices at age 2 and may eventually reduce the use of caregiver regulatory strategies with time. However, the studies have yet to ascertain if such behaviours in children are the direct result of parental influence. Future studies interested in parental socialisation practices could consider the use of a

parent intervention group and a control group to better understand the mechanism and extent of parental influence on child emotion regulation.

Another interesting finding was that whilst many studies found a relationship between parents' emotion socialisation practices and self-reports of their child emotion regulatory abilities in the systematic review, this was not replicated in the empirical study, which used observational methods to measure child emotion regulation. This discrepancy raises the possibility that parents' perception of their socialisation responses, and their motivations behind these responses may play out differently in their interactions with their children. One avenue for parent training may thus be for parents to practise responding to children's display of emotions through role-plays and receiving feedback on their socialisation practices.

The empirical paper also found that when children are aged three, parental use of interpersonal emotion regulation strategies that worsened emotions predicted reduced child emotion reactivity when children are fearful and greater use of redirected action strategies when children are angry. These findings provide two suggestions when designing parent interventions aimed at improving their children's emotion regulatory abilities. Firstly, the findings indicate that interventions should focus on parents' interpersonal emotion regulatory strategies and seek to educate parents on the unhelpfulness of such strategies when managing another person's emotions. Secondly, the findings also reveal the importance of improving emotional literacy in parents. As noted in the two earlier sections of the thesis, children employ different emotion regulatory strategies in different emotion contexts (such as fear and anger). Thus, it is important that parents are able to distinguish between the different emotions, recognise the motivations behind their children's displays of emotions and respond effectively to their needs.

## **Conclusion**

Parents, often the first relational other of an individual, play an irrefutably important role in child development. The literature and the current study provide possible avenues

through which parents can better support the development of their child's emotion regulatory abilities. However, it is also important to acknowledge the transactional nature of the parent-child relationship – which can make parenting challenging (or rewarding), depending on how the child responds. Within the context of the nature-versus-nurture debate, this means that while the research focus has moved towards understanding how nurturing influences can make a difference to an individual's development, it is crucial to remember that recognising the effects of nature is important too – that each child is different and can influence how parenting plays out.

This study seeks to understand the importance of parental factors in relation to child emotion regulation using longitudinal and observation methods. Data collection using such methods can be a long process, especially with infant behaviour data collection, and in turn creates potential difficulties that may jeopardise the data and research. It is my hope that presenting these issues here will serve as a consideration and reminder for future researchers when they embark on similar types of research.

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## **Appendices**

## Appendix A

### PRQ

Indicate on a scale from 1 (very rarely) to 7 (very often) how often you have responded to your child in the ways listed for each item. **Please think about how you have responded to your child ON AVERAGE (considering good days, average days and bad days!) during the last month.** Please read each item carefully and respond as honestly as you can by circling the number which best applies to you. **If the exact situation described has not occurred, please think of a situation where your child has experienced the same emotion.**

---

	1	2	3	4	5	6	7
<b>1. When my child was sad or upset (e.g., because they have hurt themselves or fallen down), I have:</b>							
a. Remained calm and not let myself get anxious	1	2	3	4	5	6	7
b. Comforted my child and tried to get him/her to forget about what was making him/her sad	1	2	3	4	5	6	7
c. Told my child that he/she is over-reacting	1	2	3	4	5	6	7
d. Helped my child figure out a way to make the situation better	1	2	3	4	5	6	7
e. Told my child it's OK to cry when you are unhappy	1	2	3	4	5	6	7
f. Told my child to stop crying or he/she won't be allowed to do something he/she enjoys	1	2	3	4	5	6	7
g. Physically comforted my child with hugs and told him/her it will be OK	1	2	3	4	5	6	7
h. Ignored my child's upset feelings until he/she stops being upset	1	2	3	4	5	6	7

i. Told my child to stop behaving like a baby/being silly	1	2	3	4	5	6	7
<b>Very rarely</b>	<b>medium</b>		<b>very often</b>				

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**2. When my child has lost or broke something special and reacted with tears, I have:**

a. Got annoyed with him/her for being careless	1	2	3	4	5	6	7
b. Told my child that he/she is over-reacting	1	2	3	4	5	6	7
c. Ignored him/her until she stopped being upset	1	2	3	4	5	6	7
d. Helped my child to think of places he/she hasn't looked yet	1	2	3	4	5	6	7
e. Distracted my child by talking about happy things	1	2	3	4	5	6	7
f. Told him/her you understand why he/she would feel unhappy	1	2	3	4	5	6	7
g. Told him/her that they should have been more careful	1	2	3	4	5	6	7
h. Physically comforted my child with hugs and told him/her it will be OK	1	2	3	4	5	6	7
i. Told my child s/he will lose out on doing something s/he enjoys if she doesn't stop crying	1	2	3	4	5	6	7

**3. When my child has been nervous/anxious/scared (e.g., meeting a new person/animal, first day at a playgroup, dropped off at nursery, etc.), I have:**

a. Tried to make my child feel better by talking about positive things about the situation	1	2	3	4	5	6	7
b. Encouraged my child to think of things that he/she could do so that it wasn't so scary (e.g., take a favourite toy)	1	2	3	4	5	6	7



c.	Told my child to stop over-reacting	1	2	3	4	5	6	7
d.	Told my child that if he/she stops making a fuss he/she can have a treat when s/he gets home	1	2	3	4	5	6	7
e.	Felt upset or worried because of my child's reaction	1	2	3	4	5	6	7
f.	Encouraged my child to talk about his/her nervous feelings	1	2	3	4	5	6	7
g.	Physically comforted my child with hugs and cuddles	1	2	3	4	5	6	7
h.	Got annoyed with my child and told him/her to stop being a baby	1	2	3	4	5	6	7
i.	Ignored my child's behaviour	1	2	3	4	5	6	7

**4. When I have told my child that they have to stop doing what they are doing and they have got upset, cross or thrown a tantrum (e.g., have to leave the park to go home or stop playing to get ready for bed), I have:**

a.	Told my child that she/he is being naughty or childish.	1	2	3	4	5	6	7
b.	Got cross at my child for being difficult	1	2	3	4	5	6	7
c.	Told my child I understand why s/he is feeling that way.	1	2	3	4	5	6	7
d.	Explained to my child why we have to stop and suggest something nice s/he can do (e.g, when you get home or before bed)	1	2	3	4	5	6	7

e. Told my child to stop misbehaving or they would not be allowed to do the activity again	1	2	3	4	5	6	7
f. Told my child that s/he is overreacting	1	2	3	4	5	6	7
g. Tried to engage him/her in a game to change how s/he was feeling	1	2	3	4	5	6	7
h. Tried to physically comfort my child and told him/her that s/he you can return to what s/he is doing tomorrow	1	2	3	4	5	6	7
i. Ignored my child until s/he stopped responding in that way	1	2	3	4	5	6	7

**5. When I have told my child s/he cannot have something they want (e.g., a toy/treat) and s/he responds with anger/frustration/tears I have:**

a. Got annoyed with my child and told him/her off.	1	2	3	4	5	6	7
b. Let my child have the toy/treat	1	2	3	4	5	6	7
c. Explained to my child why s/he can't have it and suggested something else s/he can do or have	1	2	3	4	5	6	7
d. Told my child to stop being naughty or they will not be able to have something else (e.g. pudding, trip, toy)	1	2	3	4	5	6	7
e. Encouraged my child to express his/her feelings	1	2	3	4	5	6	7

f.	Tried to soothe my child by talking about something different	1	2	3	4	5	6	7
g.	Tried to physically ( with hugs ) or verbally (soothing voice) comfort my child and tell him/her it will be OK	1	2	3	4	5	6	7
h.	Ignored him/her until he/she settles down	1	2	3	4	5	6	7
i.	Told him/her to stop over-reacting	1	2	3	4	5	6	7

**6. When my child was afraid (e.g., of the dark, monsters, an animal) I have:**

a.	Encouraged my child to talk about s/he is scared of	1	2	3	4	5	6	7
b.	Got annoyed with him/her for being silly	1	2	3	4	5	6	7
c.	Told my child that he/she is over-reacting	1	2	3	4	5	6	7
d.	Encouraged my child to think of something which would make him/her less afraid (e.g., leave the lights on)	1	2	3	4	5	6	7
e.	Told him/her to stop making a fuss or s/he won't be allowed to do something they enjoy the next day	1	2	3	4	5	6	7
f.	Done something fun with my child to help him/her forget about being scared	1	2	3	4	5	6	7
g.	Physically comforted my child with cuddles	1	2	3	4	5	6	7
h.	Ignored by child's fearful reaction	1	2	3	4	5	6	7

- |  |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|
| i. Got angry and told him/her to stop being afraid | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--|---|---|---|---|---|---|---|

**7. When I have told my child that they have to do something they don't want to do (e.g. get ready for bed) and have got cross/angry/thrown a tantrum, I have:**

- |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| a. Told my child s/he is being naughty or childish  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. Got cross at my child for being difficult  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. Told my child I understand why s/he is feeling that way  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. Explained to my child why they have to do it and suggest something different s/he can do (e.g., before bed)      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. Told my child to stop misbehaving or they would not be allowed to do what they are doing or have something again | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. Told my child that s/he is over-reacting   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g. Tried to engage him/her in a game to change how s/he is feeling  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| h. Tried to physically comfort my child and told him/her that s/he can return to what they are doing tomorrow       | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| i. Ignored my child until s/he stopped being angry  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

## **Appendix B**

### **Statement on Joint Working**

The empirical paper was based on data collected from a completed study titled “The Development of Children’s Emotion Regulation Skills”. This study examined the link between the quality of mother-child interactions and children’s emerging emotion regulatory capacities. It was funded by the Economic and Social Research Council and had obtained ethical approval.

The raw data for the Fear episode of the above study was managed together with Nikki Lim-Ashworth, another D.Clin.Psy. trainee, as part of her thesis examining the longitudinal pathways of emotion regulation, maternal depression and early childhood difficulties. Data cleaning, checking and coding of the video recordings were completed jointly. The remaining data (Parent Response Questionnaire, PRQ; Emotion Regulation of Others and Self, EROS questionnaire) that was of interest for this paper was cleaned and analysed individually by the author. Overall data analysis and the writing of all sections of the thesis were also completed independently.