Associations between Childhood Maltreatment, Integrative Difficulties, and Frightening, Frightened, and Dissociated (FR) Parenting Behaviours

by

Elyse K. Redden

A Thesis
presented to
The University of Guelph

In partial fulfilment of requirements
for the degree of
Master of Arts
In
Psychology

Guelph, Ontario, Canada
© Elyse K. Redden, September, 2013
ABSTRACT

ASSOCIATIONS BETWEEN CHILDHOOD MALTREATMENT, INTEGRATIVE DIFFICULTIES, AND FRIGHTENING, FRIGHTENED, AND DISSOCIATED (FR) PARENTING BEHAVIOURS

Elyse K. Redden
University of Guelph, 2013

Advisor: Professor H. N. Bailey

This study investigated whether maternal trauma integration difficulties (indicated by trauma symptoms and unresolved attachment) mediated or moderated associations between parental history of childhood maltreatment and FR (frightening, frightened, and dissociated) parenting behaviour. Mothers reported their maltreatment history and trauma symptoms, completed the Adult Attachment Interview, and were observed interacting with their 10-month-old infants. History of childhood maltreatment was associated with indices of integrative difficulties: emotional abuse and physical neglect with trauma symptoms, and physical and sexual abuse with unresolved attachment. Parental FR-behaviour was associated with both trauma symptoms and unresolved attachment. Certain types of childhood maltreatment were associated with FR-behaviour, but only modestly so. A model whereby childhood maltreatment predicted FR-behaviour mediated by integrative difficulties was partially supported, whereas a moderation model was not. Findings are consistent with the idea that FR-behaviour may be distinctly related to trauma. Results were discussed with reference to central methodological issues and the importance of assessing these variables through multiple methods.
ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my advisor, Heidi Bailey, for her enthusiastic guidance, the continuously brilliant and stimulating theoretical conversations, and the useful graphic for rating perceived impact of stressful situations. I would also like to thank my committee member, Michael Grand, for helping to focus my perspective on this project. Both of their input into this project has been invaluable. Thank you also to Karl Hennig for chairing my defence. I am also warmly appreciative to everyone in the Guelph-Western attachment lab group, for their assistance and wisdom in navigating the rich attachment field, and all the participants in their indispensable research program. I would also like to thank the Social Sciences and Humanities Research Council of Canada, and Ontario Graduate Scholarship Program for their financial support for my research.

In addition, I must thank the love and light in my life for the constant well-spring of inspiration and support. Thank you to my family, my parents, my siblings, and especially my dear nephews Parker and Reese who bring my studies of child development to life, and my partner Nick Baris with his unwavering support and love.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>ii</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>iii</td>
</tr>
<tr>
<td>TABLE OF CONTENTS</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>LIST OF FIGURES</td>
<td>vi</td>
</tr>
<tr>
<td>LIST OF APPENDICES</td>
<td>vii</td>
</tr>
<tr>
<td>CHAPTER 1: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>1.1 Childhood Maltreatment and Its Consequences</td>
<td>3</td>
</tr>
<tr>
<td>1.2 The Effects of Childhood Maltreatment of Parenting: The Role of Integrative Difficulties</td>
<td>5</td>
</tr>
<tr>
<td>1.3 Putting it Together</td>
<td>12</td>
</tr>
<tr>
<td>1.4 Hypotheses</td>
<td>13</td>
</tr>
<tr>
<td>CHAPTER 2: METHOD</td>
<td>17</td>
</tr>
<tr>
<td>2.1 Participants</td>
<td>18</td>
</tr>
<tr>
<td>2.2 Measures</td>
<td>19</td>
</tr>
<tr>
<td>2.3 Procedure</td>
<td>21</td>
</tr>
<tr>
<td>CHAPTER 3: RESULTS</td>
<td>22</td>
</tr>
<tr>
<td>3.1 Descriptive Statistics</td>
<td>23</td>
</tr>
<tr>
<td>3.2 Associations between Childhood Trauma History and Integrative Difficulties</td>
<td>26</td>
</tr>
<tr>
<td>3.3 Associations with FR Behaviours</td>
<td>28</td>
</tr>
<tr>
<td>3.4 Mediations</td>
<td>29</td>
</tr>
<tr>
<td>3.5 Moderations</td>
<td>35</td>
</tr>
<tr>
<td>3.6 Discriminant Validity</td>
<td>36</td>
</tr>
<tr>
<td>CHAPTER 4: DISCUSSION</td>
<td>38</td>
</tr>
<tr>
<td>4.1 Childhood Maltreatment History and Integrative Difficulties</td>
<td>39</td>
</tr>
<tr>
<td>4.2 Associations with FR Parent Behaviour</td>
<td>43</td>
</tr>
<tr>
<td>4.3 Mediation Model</td>
<td>45</td>
</tr>
<tr>
<td>4.4 Resiliency (Moderation) Model</td>
<td>46</td>
</tr>
<tr>
<td>4.5 Discriminant Validity</td>
<td>46</td>
</tr>
<tr>
<td>4.6 Generalizability</td>
<td>47</td>
</tr>
<tr>
<td>4.7 Alternative Theoretical Explanation</td>
<td>47</td>
</tr>
<tr>
<td>4.8 Future Research</td>
<td>48</td>
</tr>
<tr>
<td>4.9 Clinical Implications</td>
<td>49</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>52</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>63</td>
</tr>
<tr>
<td>Table</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Descriptive Statistics for the Childhood Trauma Questionnaire</td>
</tr>
<tr>
<td>2</td>
<td>Correlation Matrix of Childhood Maltreatment Experiences Post Transformation</td>
</tr>
<tr>
<td>3</td>
<td>Descriptive Statistics for Trauma Symptoms Inventory</td>
</tr>
<tr>
<td>4</td>
<td>Correlation Matrix of Trauma Symptom Inventory Subscales</td>
</tr>
<tr>
<td>5</td>
<td>Correlations between Childhood Maltreatment Experiences and Indicators of Trauma Integration Difficulties</td>
</tr>
<tr>
<td>6</td>
<td>FR Behaviours Correlated with Types of Childhood Maltreatment</td>
</tr>
<tr>
<td>7</td>
<td>FR Behaviours Correlated with Trauma Symptoms and Unresolved Status</td>
</tr>
<tr>
<td>8</td>
<td>Unstandardized Regression Coefficients for Direct and Total Effects, and R-squared for Mediation Analyses of Five Different Types of Childhood Maltreatment Predicting FR Behaviour</td>
</tr>
<tr>
<td>9</td>
<td>Bootstrapped Tests of Indirect Effects for Five Different Types of Childhood Maltreatment Predicting FR Behaviour</td>
</tr>
<tr>
<td>10</td>
<td>Regression Coefficients for Maternal Sensitivity Discriminant Validity Analysis (Predicting FR Behaviour)</td>
</tr>
<tr>
<td>11</td>
<td>Regression Coefficients for Depression, Anxiety, and Stress Discriminant Validity Analysis (Predicting FR Behaviour)</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mediation conceptual model</td>
<td>16</td>
</tr>
<tr>
<td>2</td>
<td>Moderation conceptual model</td>
<td>16</td>
</tr>
<tr>
<td>3</td>
<td>Unstandardized regression coefficients for the relationship between childhood trauma and FR parent behaviours (total relationship, and direct relationship with mediators)</td>
<td>30</td>
</tr>
<tr>
<td>4</td>
<td>Diagram of labels for the total relationship, and the direct relationship, with mediators taken into account, between childhood trauma and FR behaviours</td>
<td>33</td>
</tr>
</tbody>
</table>
## LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Parent-Child Attachment Relationships</td>
<td>63</td>
</tr>
<tr>
<td>B</td>
<td>Information Letter, and Consent Form</td>
<td>67</td>
</tr>
</tbody>
</table>
CHAPTER 1

INTRODUCTION
Child maltreatment is prevalent (MacMillan et al., 1997; Trocme, Toufigny, Maclaufin, & Fallon, 2003) and although outcomes vary it is associated with a variety of negative sequelae (Beltran, 2009; Egeland, 2009; Trocme et al., 2003; Wright, 2007). These include self-regulatory and interpersonal difficulties (Crawford & Wright, 2007; Messman-Moore & Coates, 2007), which would be expected to interfere with effective parenting (DeOliveira, Bailey, Moran, & Pederson, 2004). Indeed, a history of childhood maltreatment has been associated with parenting difficulties (Alexander, Teti, & Anderson, 2000; Bailey, DeOliveira, Wolfe, Evans, & Hartwick, 2012; Bert, Gunner, & Lanzi, 2009; Lang, Garstein, Rodgers, & Lebeck, 2010).

Prospective research on the “cycle of violence” (from childhood maltreatment to adult aggressive or antisocial behaviour) reveals that most adults who were maltreated as children do not become offenders, although retrospective research shows that most offenders do have a history of childhood maltreatment. Furthermore, the mechanisms behind this association are not well understood (Fagan, 2001). A better understanding of moderating and mediating variables that serve as protective and risk factors between childhood maltreatment and deleterious outcomes would help to explain these differential findings. How do certain children who survive maltreatment grow up to be functional adults (both as parents, and in a broader social context), while others face profound difficulties (Egeland, Jacobvitz, & Sroufe, 1988; Lang et al., 2010)? Are there certain factors that can lead to resiliency in the face of childhood maltreatment? A mediation model would indicate intermediary variables that account for the relationship between childhood maltreatment and detrimental consequences, whereas a moderation model would reveal factors that affect whether childhood maltreatment leads to harmful effects or not (e.g., resilience factors).

There are multiple perspectives from which to better understand the intergenerational consequences of childhood maltreatment. These include coping styles, social learning, neurological changes, cognitive changes (i.e. changes in attitudes, self-concept, or attributions), and attachment (Widom, 2000). Attachment is of particular importance because the very first caregiver-child relationship can be thought of as a relationship pattern to which future relationships refer back to, including future parenting relationships (Morton & Browne, 1998). Applying attachment theory and research to childhood trauma: the absence of a resolved, coherent attachment narrative after traumatic events in childhood is expected to affect the attachment-relevant behaviours of parents once they have children of their own. The current study adds to the literature by connecting childhood maltreatment history to trauma-specific parenting difficulties by using attachment
Attachment researchers have been developing measures to better understand the effects of trauma experiences. Researchers have found that mothers who experienced their own mothers as rejecting also rejected their own children, and also had attachment-relevant cognitive distortions, such as incoherently discussing attachment, and difficulty remembering childhood experiences (Main & Goldwyn, 1984). However, mothers who were rejected in childhood were less likely to reject their own children if they were able to construct coherent narratives of rejecting experiences. Over time attachment researchers have developed measures to better understand how we integrate, process, and subsequently describe such experiences (Main & Goldwyn, 1998), and also on specific parenting behaviours that appear to be related to traumatic experiences (Main & Hesse, 1992).

The purpose of this study was to examine whether trauma-integration difficulties constitute a mechanism through which a parent’s experience of his/her own childhood maltreatment may result in specific parenting behaviours. Specifically, the current study investigated whether parental inability to integrate traumatic experiences (indicated by persisting trauma symptoms and unresolved attachment) plays a role in the relationship between the parent’s childhood maltreatment and attachment-related parenting outcomes. Trauma integration is defined as assimilating and organizing traumatic experiences into declarative memory so that traumatic memories are able to be articulated in a coherent way, and no longer cause traumatic symptoms such as intrusive fearful experiencing, dissociation, and defensive avoidance. Trauma integration could theoretically mediate the association between childhood maltreatment and parenting behaviour, and/or it could be a protective factor such that trauma integration keeps childhood maltreatment from having a deleterious effect on parenting (i.e., trauma integration could be a moderating variable).

**Childhood Maltreatment and Its Consequences**

Child abuse and neglect is a problem in Canada, and there are both physical and emotional consequences for the victims of child maltreatment. The only Canada-wide study of the incidence and description of child abuse and neglect in Canada estimated that 21.52 child maltreatment cases were investigated per 1,000 children in 1998 (for an estimated total of 135,573 investigations nation-wide; Trocmé et al., 2003). Of these cases, 45% of the cases were deemed true cases of child maltreatment, 22% were categorized as suspected without adequate proof to
substantiate maltreatment, 4% were intentionally false allegations, and 32% were unsubstantiated. All cases of maltreatment that were not investigated by child welfare services could not be studied, and are therefore not reflected in these findings.\(^1\) Of the cases that were substantiated the most common form of maltreatment reported was neglect (46%). Emotional maltreatment (such as exposure to spousal violence) was the second most common substantiated maltreatment (37%), followed by physical abuse (25%), emotional abuse (such as hostile treatment or verbal abuse; 13%), and sexual abuse (10%). These categories are not mutually exclusive, and all maltreatment definitions include both actual harm and substantial risk of harm to children younger than 16 years of age. In terms of outcomes of maltreatment, 50% of substantiated physical abuse cases evidenced physical injury. Emotional harm was observed in one third of verified incidents. Emotional harm due to maltreatment, so severe that treatment was required, was observed in 19% of physical abuse, neglect, or emotional maltreatment cases, and 38% of sexual abuse cases. The authors noted that only emotional harm that was observed during investigation of the case, and judged to be due to maltreatment, was captured in this study. Children who were asymptomatic or showed symptoms at other points in time would have been missed.

Higher estimates of the prevalence of childhood maltreatment typically are obtained using self-report measures versus official reports. One lifetime prevalence estimate, specifically for sexual abuse, is 12.8% for Ontario females, and 4.3% for Ontario males (67% response rate from a random sample of \(n = 9953\), over age 15; MacMillan et al., 1997). Eleven percent of MacMillan and colleagues’ sample of females reported severe sexual abuse history, while 3.9% of males reported severe sexual abuse history. As for childhood physical abuse, 21.1% of females, and 31.2% of males reported a history, while 9% of females and 10.7% of males reported severe physical abuse. A comprehensive review of articles regarding the psychological consequences of childhood sexual abuse reveal short-term affective problems, cognitive and academic problems, relational difficulties, problems functioning, behavioural problems, anxiety (particularly posttraumatic stress), depression, low self-esteem, and feelings of guilt and shame (Beltran, 2009). It is complicated to understand the short-term outcomes expressed, as these would depend on factors such as developmental level, moderating resiliency and protective

\(^1\) The unit of analysis is child maltreatment investigation case, not investigated child, as each case investigated was included in the analysis, even if a given child was investigated more than once in the period of study.
factors, and mediating variables (Beltran, 2009). In terms of long-term consequences Glod’s (1993) review of sequelae of childhood sexual and physical abuse revealed that psychiatric health, physical health, and adaptive functioning are affected. Studies suggest an array of long-term problems associated with sexual and physical abuse including mood disorders, poor adaptive functioning, suicidality, disruptions in personality development (especially borderline personality), eating disorders, psychosis, substance abuse, aggressive behaviour, medical disorders, and neurological dysfunction.

Childhood emotional abuse does not yet hold the same level of social awareness as physical and sexual abuse, and even though emotional abuse is thought to be prevalent the data to support this is still forthcoming (Egeland, 2009). Egeland identifies two probable reasons for this: Emotional abuse is not yet as clearly defined as sexual and physical abuse, and even though the research done thus far indicates that the effects of childhood emotional maltreatment are severely detrimental to development, it is sometimes presumed that emotional abuse is not as harmful as other forms. However, detrimental neurological, physiological, interpersonal, and intrapersonal associations with childhood emotional abuse have been recognized (Wright, 2007). Retrospectively recalled childhood emotional abuse has been negatively correlated with numerous outcomes in adulthood including self-esteem, life-satisfaction, sense of social support (Festinger & Baker, 2010), and emotion regulation difficulties (Burns, Jackson, & Harding, 2010).

While there is a wealth of research on the sequelae of child maltreatment, less research identifies and clarifies the processes involved (e.g., mediating variables that account for the relationship between childhood maltreatment and outcomes, and moderating variables that strengthen or weaken the association between childhood maltreatment and outcomes; Beltran, 2009; Wright, 2007). Roche, Runtz, and Hunter (1999) have argued that a better understanding of such mediators would have important implications for the focus of therapy following abuse experiences.

The Effects of Childhood Maltreatment on Parenting: The Role of Integrative Difficulties

Within the field of attachment research, a number of interpersonal and intrapersonal attachment-related processes have been identified that may account for associations between maltreatment history and subsequent parenting difficulties. Processes that may be implicated in parenting difficulties following parental experiences of childhood maltreatment will now be
discussed (for a general discussion of parent-child attachment relationships, see Appendix A). Of note, these processes are related to a relative inability to integrate traumatic experiences into normal cognitive and emotional functioning, which is thought to result from early exposure to trauma or chronic stress.

**Abuse and integrative difficulties.**

The current study conceptualized integrative difficulties as a mechanism through which maltreatment-specific experiences of the mother affect her parenting behaviours. Many of the sequelae of traumatic experiences are thought to be related to difficulty integrating these experiences, and their implications, into one’s life narrative.

Integrative difficulties are thought to underlie a diagnosis of Posttraumatic Stress Disorder (PTSD), as well as more chronic developmental complex trauma symptoms that can arise from prolonged interpersonal trauma such as childhood abuse (Cloitre et al., 2009). Neuroimaging research provides convergent support for an association between abuse history and integrative difficulty: The brain regions that show reduced activation for those with PTSD (compared to controls who have been traumatized, but did not meet criteria for PTSD) include the thalamus (Lanius et al., 2001; Lanius, Williamson, & Hopper, 2003), which is critical for connecting neural networks (Bergmann, 2008). Such neural impairment likely would be demonstrated by fragmented and unintegrated memories (including flashbacks), and failure of cognitive integration (including distorted sense of self). As described in more detail below, integrative difficulties associated with traumatic stress are conceptualized as a latent variable contributing to the specific trauma symptoms associated with these disorders, and also to the lapses and inconsistencies that characterize unresolved attachment.

**Childhood maltreatment, trauma symptoms and integrative difficulties.**

The nature of various trauma symptoms exemplifies the integrative difficulties that can follow from traumatic experiences. The avoidance and intrusion characteristic of both PTSD and unresolved trauma are thought to arise from the activation and subsequent avoidance of unintegrated aspects of the self and the world connected to the traumatic experience. If one has processed and cognitively integrated a traumatic experience (i.e., the traumatic experience functions in the mind as a more typical episodic memory instead of a segregated, terrifying

---

2 PTSD is a psychological disorder defined in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision (DSM-IV-TR)*; APA, 2000) as a traumatic event that is re-experienced (e.g. through dreams or intrusive memories), and accompanied by persistent arousal and avoidance (such as affective numbing).
memory devoid of context) the trauma symptoms would theoretically dissipate. However, when thoughts and feelings related to trauma are not cognitively integrated they can intrude into current experience and cause reactions (often aimed at avoiding the re-experiencing) that are not functional in the present situation (Fearon & Mansell, 2001).

Trauma symptoms can be thought of as cognitive and affective strategies that once helped individuals cope with abusive situations that are no longer adaptive outside of the abusive context (Fischer, Ayoub, Singh, Noam, Maraganore, & Raya, 1997). Children who grow up in harmful caregiving environments learn to manage their situation using avoidant and/or dissociative tactics, thereby avoiding deep processing (reflecting on, and learning to understand the context) of their problematic relational experiences into normal consciousness, because this processing might lead to intense anxiety. One problem with this is the experiences never get cognitively integrated into their life narrative, and this may lead to difficulties integrating other experiences over time (Fischer et al., 1997; Fonagy, Target, & Gergely, 2000).

Neurological and cognitive research suggests there are two separate memory systems important for processing trauma: vivid re-experiencing which is not dependent on the hippocampus, and narrative memories of trauma supported by the hippocampus. The interplay between them might be responsible for intrusive re-experiencing of trauma (Brewin, 2001). Organizing traumatic memories in a long-term memory narrative may allow the brain to rapidly inhibit activation of a fear response in the brain when triggered by a traumatic memory, partially because the narrative helps the individual integrate the trauma into a temporal context (i.e., past memories, not the present). Another trauma symptom illustrative of integrative difficulties is dissociation: Feelings, memories, and aspects of the self and others that are too traumatizing and threatening to acknowledge may be mentally segregated from awareness, even though they are still active enough to appear in discourse (e.g. on the AAI; Lyons-Ruth, Yellin, Melnick, & Atwood, 2005), and behaviour (e.g., fearful behaviour in contexts that would not typically evoke fear; Main & Hesse, 1992).

Unresolved attachment, chronic trauma symptoms, and childhood maltreatment have been associated with one another in high-risk samples (i.e., clinical, and adolescent mother samples). Trauma symptoms have been associated with childhood trauma in a clinical sample (Briere, Elliott, Harris, & Cotman, 1995). Chronic trauma-related symptoms, specifically dissociation, impaired sense of self, and relationship problems, were significantly higher in unresolved
mothers at high social risk, and mothers’ unresolved status was associated with a history of childhood maltreatment (Bailey, Moran, & Pederson, 2007a; Moran, Bailey, Gleason, DeOliveira, & Pederson, 2008). The current study set out to find if there were similar associations between trauma symptoms, unresolved attachment, and childhood maltreatment in a sample that is not at high social risk (i.e., a community sample of mothers over age 20).

_Childhood maltreatment, unresolved attachment and integrative difficulties._

Unresolved attachment is considered an attachment-specific indicator of broader integrative difficulties. The Adult Attachment Interview (AAI; Main & Goldwyn, 1998) broadly assesses one’s state of mind regarding childhood attachment figures, and with regard to unresolved attachment, particularly examines one’s discourse about loss and abuse experiences for indications of confusion and disorganization (Main & Goldwyn, 1998). Signs of unresolved attachment representations characteristically manifest as brief conversational inconsistencies or lapses thought to result either from deep immersion or absorption in loss or trauma experiences, interference from a memory or belief system that has not been consciously integrated, or other forms of dissociation (Hesse & Main, 2000; Hesse & Main, 2006) that interfere with normal conversational consistency. For example, someone with unresolved attachment may have lapses in reasoning in which the speaker blames herself for a childhood loss or traumatic experience which, rationally, could not be her fault. Or, there may be a lapse in discourse, where the speaker becomes silent for a prolonged period, or where discussion of the traumatic event corresponds to an abrupt change in style of speech that becomes childlike, extremely detailed, or eulogistic. The degree to which an adult shows signs of unresolved attachment on the AAI is believed to be an indication of lack of integration of traumatic experiences (Bailey et al., 2007a; Hesse & Main, 2000).

Using the AAI, markers of unresolved attachment are only detectable when discussing loss and trauma. This sets the unresolved classification apart from other attachment classifications (i.e., secure, dismissing, and preoccupied), as unresolved attachment is loss- and trauma-specific, whereas other classifications reflect a broader approach to thinking about attachment relationships and needs. Unresolved maternal attachment had been found to predict infant disorganized attachment (Hesse & Main, 2000; van Ijzendoorn, 1995), supporting the argument

---

3 Note the experiences can be from childhood, or more recently from adulthood, as long as they are attachment-relevant (e.g. abuse or neglect from an attachment-figure).
that unresolved attachment affects the attachment relationship between mother and child. Mothers who demonstrate unresolved attachment on the AAI are given a secondary attachment classification that describes their broader attachment orientation that exists alongside unresolved attachment.

Protracted childhood maltreatment, which is traumatic in itself, might make it difficult for future and concurrent trauma-related experiences to be processed and integrated, leaving one particularly vulnerable to unresolved attachment. Maltreated children learn to avoid anxiety-provoking information about the self and others, keeping the information separated from awareness, or separated from other more positive feelings and cognitions in an effort to leave these aspects unspoiled by intensely negative knowledge (Fonagy et al., 2000). Similarly, Fearon and Mansell (2001) propose that representations of the self and the world that are the result of trauma do not get integrated into existing representations of the self and the world because integration would cause a more painful perspective. This failure to integrate is thought to leave one vulnerable to unresolved attachment (Fonagy et al., 2000; Hesse & Main, 2000) because intense traumatic experiences persist as chaotic, uncontained, and disorganized in the mind, causing general behavioural and emotional dysregulation (Fonagy et al., 2000), or as deeply buried memories that may result in extreme avoidance of potential triggers (Stovall-McClough, & Cloitre, 2006). This dysregulation and/or avoidance would theoretically make it more difficult to then resolve subsequent attachment relevant traumatic experiences.

Research lends support to these assertions. Childhood physical abuse, sexual abuse, and general maltreatment have been associated with unresolved attachment (Bailey et al., 2007a; Bradley, Westen, Mercer, Binder, & Jovanovic, 2011; Hesse & Main, 2000). Furthermore, unresolved childhood maltreatment (compared to history of maltreatment without being unresolved) was 7.5 times more strongly associated with a diagnosis of PTSD (Stovall-McClough & Cloitre, 2006). Examining the individual PTSD symptoms revealed that being unresolved was strongly associated with avoidance symptoms, and marginally associated with dissociative symptoms. The strong correlation between avoidance and unresolved status might indicate the importance of avoiding (purposefully not integrating) information for maintaining an unresolved state of mind.

In sum, integrative difficulties are difficult to assess. Dissociation, avoidance, and impaired self-reference imply some form of disconnection from traumatic experiences, as well as from
experience in general in some cases. Intrusive experiencing means experiencing the trauma vividly (not just remembering it), at inopportune moments, rather than being in control of recounting the experience. In addition, trauma that is floating within consciousness without being fully integrated into narrative memory would be difficult to be aware of, let alone self-report. Therefore, integrative difficulties were assessed in two ways in this study: through self-report, and through discourse analysis using the Adult Attachment Interview, where participants do not need to articulate, or be in touch with their traumatic experiences for them to be detected. This study is unique in that it analyzes these indices of integrative difficulties simultaneously, in order to connect childhood maltreatment experiences with parenting behaviours.

**Frightening parent behaviour and parent-child attachment relationship.** Whereas lack of integration occurs internally, this would not affect a child unless it is expressed somehow. Specific parental behaviours have been identified and are thought to be associated with parental unintegrated traumatic experiences. These behaviours are thought to partially mediate the association between parental unresolved attachment representations and parent-child disorganized attachment relationships.

Maternal unresolved attachment representations, and infant disorganized attachment\(^4\), have been associated with insensitive parenting; however, the effect size of the association was small \((r = .10; \text{van Ijzendoorn, Schuengel, & Bakermans-Kranenburg, 1999})\), with larger effects found predominantly in high-risk samples (such as adolescent mothers; Bailey et al., 2007a). Perhaps more central than insensitivity, there are broader self-regulatory, emotional, and relational difficulties, often stemming from trauma, that are thought to be more consistently associated with unresolved and disorganized attachment (Bernier & Meins, 2008; DeOliveira et al., 2004). Unresolved parental attachment has been related to anomalous threatening, frightened, or dissociated behaviours that may frighten the infant (collectively referred to as FR behaviour; Hesse & Main, 2000; Hesse & Main, 2006; Jacobvitz, Leon, & Hazen, 2006; Madigan, Bakermans-Kranenburg, van Ijzendoorn, Moran, & Pederson, 2006; Madigan, Moran, & Pederson, 2006b).

\(^4\) Disorganized attachment can be observed as incongruous behaviour, extended freezing, misallocated or repetitive behaviours, and/or trepidation related to the parent (Main & Solomon, 1990). Although behaviourally dissimilar, these behaviours collectively are thought to indicate a lack, or failure, of coping strategy when faced with attachment-related stressors (Hesse & Main, 2000).
Main and Hesse have an established system for observing FR behaviours (Main & Hesse 1992, 2006). In addition to the three primary FR behaviour categories (FR Type 1: Threatening, Frightened, and Dissociated), there are three secondary FR behaviour categories (FR Type 2); Timid/deferential (often role-reversing), Sexualized, and Disorganized behaviour\(^5\). These secondary behaviours have been frequently witnessed in parents of disorganized babies but are not necessarily directly frightening to the infant; however, like the primary FR behaviours, they do indicate disruptions in normal consciousness (i.e., a degree of dissociation; Hesse & Main, 2006). Attachment-relevant frightening behaviours are distinguished from normal frightened or frightening parenting behaviour in that there is no externally discernible stimulus to elicit the behaviour, and the parent does not repair the interaction with the infant after the frightened or frightening behaviour (Main & Hesse, 2006). FR behaviour is not simply insensitive parenting; mothers who show FR behaviours can also be sensitive and responsive when not engaging in FR behaviours (Jacobvitz et al., 2006). Frightening behaviours [or hostile behaviours, as in Lyons-Ruth’s and colleagues (2005) model] and frightened (or helpless) behaviours can be thought of as parenting behaviours analogous to emotional abuse and neglect, respectively (Riggs, 2010). These parenting behaviours have been associated with insecure and/or disorganized attachment relationships (Abrams, Rifkin, & Hesse, 2006; Madigan et al., 2006a). The parent’s own unresolved trauma is thought to be the source of the frightening behaviour, which then, in turn, is thought to contribute to the disorganization of the parent-infant relationship, thus becoming an intergenerational effect of trauma (Hesse & Main, 1999; Hesse & Main, 2000).

The threatening, frightened, and dissociated behaviours are thought to arise from the parent’s previous traumatic experiences (Hesse & Main, 1999). Some internal or external stimulus triggers the unresolved trauma, whether the associations between the stimulus and the trauma are directly evident or not. Then, the effort and associated behaviours needed to avoid the unintegrated connections to the unresolved trauma overwhelms attentional resources and interferes with parenting (Fearon & Mansell, 2001), theoretically leading to and/or failing to prevent FR behaviours.

\(^5\)Hesse and Main (1999) provide examples of FR parent behaviours. Threatening behaviour can appear as stalking, or growling at the child. Frightened behaviour often manifests as sudden, terrified facial expressions. Mothers who are thought to be dissociating often display extended freezing, apparently not present in the moment with her child. Timid/deferential behaviour includes role-inversion with the child, such as seeking comfort from the child. Sexualized behaviour is rare, but includes behaviours such as deep kissing of a child. Lastly, disorganized/disoriented behaviours are the absence of coherent caregiving strategy.
As Bowlby first stated, when the child is afraid, he/she is biologically predisposed to attempt to get closer to the caregiver (Bretherton, 1992). However, when the parent is the source of the fear, this need to approach is combined with the impetus to avoid the frightening caregiver, resulting in disorganized attachment behaviour (Hesse & Main, 2000). It might be especially difficult for the child if the parent is simultaneously appearing frightened, and dissociated – so there is not only a sense of alarm, but also a lack of caregiver presence to protect (Hesse & Main, 1999). This is compounded further when the child him/herself is the stimulus that is triggering the FR behaviours. Hesse and Main speculate that if a parent has suffered trauma as a child, the parent’s child might be an unintegrated, unknown reminder of childhood trauma.

In sum, caregiver-infant interactive processes have the potential to foster functional attachment relationships. Alternatively, if a caregiver has integrative difficulties stemming from early experiences of maltreatment, these normal interactive processes can be disrupted, leading to frightening behaviour that could result in attachment difficulties in the parent-child relationship (Hesse & Main, 2000). Identifying the mechanisms through which parental maltreatment history can adversely influence attachment-relevant parenting behaviours will illuminate targets for intervention work with parents with such a history.

**Putting it Together**

The hypothesized theoretical model is: Childhood maltreatment is related to integrative difficulties, which is indicated by trauma symptoms, as well as unresolved attachment representations. These integrative difficulties are related to FR parenting behaviours. This study’s main objectives are: 1) To test the hypothesized relationships, in a low-risk (adult mother) sample, between childhood maltreatment, integrative difficulties, and these parenting outcomes, and 2) To test if the hypothesized relationships are moderations, mediations, or both.

Some of the relationships in these models are well established, while others are novel. It is well established that childhood maltreatment is associated with unresolved attachment later in life (Bailey et al., 2007a; Bradley et al., 2011; Hesse & Main, 2000; Madigan, Vaillancourt, McKibbon, & Benoit, 2012; Stovall-McClough & Cloitre, 2006). Also, maternal unresolved attachment has been repeatedly related to FR parenting behaviours (Hesse & Main, 2000; Hesse & Main, 2006; Jacobvitz et al., 2006; Madigan et al., 2006a, 2006b). This is important because FR parent behaviours have been recurrently associated with disorganized parent-child relationships.
(Abrams et al., 2006; Madigan et al., 2006a), and at least nineteen studies have confirmed the relationship between parental unresolved attachment and disorganized attachment relationship with the child (Hesse & Main, 2006). What the current study contributes to this literature is testing the relationships between mothers’ retrospective childhood maltreatment experiences and FR parenting behaviours. Do these childhood traumatic experiences that occurred years ago relate to current parenting behaviours?

In addition, the current study investigates novel paths from childhood trauma to FR parenting behaviours. Unresolved attachment emerges as a likely intermediary variable because of the associations above. However, in the current study, unresolved attachment is conceptualized as one component of broader integrative difficulties. Instead of just measuring unresolved attachment, the current study also includes trauma symptoms as an indicator of integrative difficulties. This specific multi-method (i.e., discourse analysis and self-report) approach to assessing integrative difficulties is also a new contribution to this literature.

This study also contributes to the literature by testing mediation and resiliency (moderation) models. It was hypothesized that childhood trauma would lead to integrative difficulties which would in turn lead to FR parenting behaviours. It was also hypothesized that mothers who were maltreated as children, but were able to integrate those traumatic experiences, would be resilient despite their trauma and would not demonstrate FR parenting behaviours. There is no compelling evidence in the literature that disqualifies either of these models, and the models are not mutually exclusive: Integrative difficulties may work in both of these ways (i.e. childhood maltreatment may lead to FR parenting behaviours through integrative difficulties, but only for mothers who are unable to integrate their traumatic experiences).

Hypotheses

1. As indices of integrative difficulty, both unresolved status and trauma symptoms were expected to be associated with childhood trauma history. Correlations between different trauma symptoms and different types of childhood maltreatment were also explored.

Different types of childhood maltreatment (e.g., physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect) should be treated as separate variables, as they have been found to have different parenting outcomes (Bailey et al., 2012; Ballen, Demers, & Bernier, 2006). For example, childhood history of physical abuse has been associated with intrusive and hostile parenting behaviours, whereas childhood history of sexual abuse has been
associated with less maternal interaction with their infants (Lyons-Ruth & Block, 1996). Childhood exposure to emotional abuse has been associated with less maternal empathy, more child punishments, and more neglect and abuse potential; whereas exposure to childhood physical abuse was associated with the same outcomes, plus authoritarian parenting (Bert et al., 2009). Also, it is important to assess different types of maltreatment because it is unclear if outcomes of sexual and physical abuse are actually due to the incidents of abuse per se, or if they are related to the broader experiences of emotional abuse and neglect that are associated with more tangible forms of abuse (Bailey et al., 2012; Hildyard & Wolfe 2002).

For all analyses unresolved attachment, measured by the AAI, was treated as a continuous variable to increase power. Previous research indicates that attachment representations might be better understood across continuous dimensions versus discrete categories (Roisman, Fraley, & Belsky, 2007; Whipple, Bernier, & Mageau, 2011). Fraley and Spieker (2003) argue that even though historically attachment relationships have been conceptualized as discrete categories, there is little evidence that supports a truly categorical distinction. In addition, they found a lack of compelling evidence suggesting that incorrect practical implications would manifest from studying a categorical variable as if it were dimensional.

The lapses in discourse that identify an unresolved state of mind are only detected with the AAI if they appear during a discussion of trauma or loss: If a parent does not report loss or abuse in the AAI, this automatically precludes a parent from being classified as unresolved, even though the parent might still have unintegrated states of mind (Lyons-Ruth et al., 2005). The Trauma Symptom Inventory which asks directly about defensive avoidance, impaired self-reference, dissociation, and intrusive experiences was used to detect integrative difficulties that might be missed on the AAI (i.e., mothers do not have to report specific loss or abuse experiences to indicate trauma symptoms on the Trauma Symptom Inventory). However, the TSI is a self-report measure, and is therefore vulnerable to self-report biases such as consistency bias and social desirability bias (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). A substantial strength of the AAI is that it is not a self-report measure, and therefore was expected to help compensate for this weakness in the TSI. In sum, both indicators of integrative difficulties are fallible, but help to make up for each other’s short-comings.
2. **FR parent behaviours were expected to be associated with maltreatment history and indices of trauma integration difficulties.** FR behaviours were expected to be related to experiences associated with the development of integrative difficulties (maltreatment history), and to indices of this difficulty (trauma symptoms and unresolved status). Subtypes of childhood maltreatment were again treated as separate variables. For the purpose of this study FR behaviour was treated as a continuous variable.

One advantage of measuring FR behaviours using observation is that it circumvents problems with using self-report measures of parenting behaviour (e.g., Metsäpelto & Pulkkinen, 2005; Morsbach & Prinz, 2006). Maltreatment is associated with difficulties articulating social behaviours (Bailey et al., 2007a), and self-report measures of parenting often have been found to be incongruent with parenting behaviour (Bailey et al., 2012; Fitzgerald, Shipman, Jackson, McMahon, & Hanley, 2005).

3. **Mediations (see Figure 1).** The relationship between trauma history and FR parent behaviours was expected to be mediated by indices of integrative difficulty (trauma symptoms, degree of unresolved status). First, this mediational hypothesis was tested using the total scores of each of the variables. Then, the same mediational model for different types of maltreatment was explored. Since these secondary analyses were numerous, there was an increased risk of Type 1 error. Therefore these are strictly for exploration instead of hypothesis testing.
4. Moderations (see Figure 2). The relationship between childhood trauma history and FR parent behaviours was expected to be moderated by indices of integrative difficulty (trauma symptoms, and unresolved status).

5. Discriminant validity. As done elsewhere (Jacobvitz et al., 2006), the relationship between FR behaviours and maternal sensitivity was examined. It was hypothesized that mothers experiencing integrative difficulties would show FR behaviours, but would not necessarily demonstrate deficits in sensitively responding to child-signals in general. In addition, I controlled for maternal depression, anxiety, and stress. These analyses are peripheral to the main hypotheses, and were conducted to add validity to my claim that the difficulties are integrative in nature, and not just general lack of coping ability and well-being.
CHAPTER 2

METHOD
Method

Participants

Data were available for 78 mother-infant dyads who were participating in a larger ongoing longitudinal study of attachment. Three of these dyads were excluded because the videotapes with the mother-child interactions did not have sound, and could therefore not be coded. One dyad was excluded because questionnaires were missing for two main variables (CTQ and TSI), and two dyads were excluded because their denial scores on the CTQ validity scale were high (i.e., three out of three), casting particular doubt on their self-report data. Therefore the following analyses are based on 72 dyads. Of these dyads, one mother skipped one item on the CTQ within the emotional neglect subscale. An emotional neglect score, as well as an overall CTQ score were prorated for this mother as outlined in the CTQ manual (Bernstein & Fink, 1998). Finally, one dyad was missing a maternal sensitivity score, which is used as a control variable. Since there was only one missing score, mean substitution was used as recommended in McCartney, Burchinal, and Bub (2006).

The mothers ranged in age from 19.95 to 44.60 years when their infants were born (M = 29.74, SD = 4.76). Thirty-four (47.2%) of the babies were female, and 38 (52.8%) were male. The rest of the demographic information was gathered at infant age 10 months, when the CTQ was collected and FR behaviours were observed and coded. Fourteen (19.4%) of the mothers were working full time, 11 (15.3%) were working part time, 43 (59.7%) were not working outside the home, and 4 (5.6%) stated their employment status as “other” (e.g., student). Fifty-six (77.8%) of the mothers were married, 11 (15.3%) were in common-law partnerships, 5 (6.9%) were single, and no mothers were divorced or separated. Mothers completed 14.6 years of education on average (Min = 12, Max = 18, SD = 1.63). Household income was assessed using a 9-point scale, where a score of 1 indicated an income of less than $10,000 per year, and a score of 9 indicated an income of more than $80,000 per year. The average score was 6.47 (SD = 2.31), corresponding to an annual household income of $50,000 to $59,999 per year. No mothers reported a household income of less than $10,000 per year. Five (6.9%) mothers reported a household income of $10,000 to $19,999 per year, and 24 (33.3%) reported household incomes over $80,000 per annum.
Measures

**Childhood Trauma Questionnaire.** Maltreatment history was examined using the Childhood Trauma Questionnaire (CTQ; Bernstein & Fink, 1998), a widely-used 28-item measure used to assess physical abuse, sexual abuse, emotional abuse, physical neglect, and emotional neglect. The CTQ has demonstrated high internal consistency, good test-retest reliability, and convergent validity with the Child Trauma Interview (Bernstein, Fink, Handelsman, & Foote, 1994). In the current study, Cronbach’s alpha for the total CTQ was .58⁶, Emotional Abuse was .85, Physical Abuse was .67, Sexual Abuse was .88, Emotional Neglect was .81, and Physical Neglect was .53.

**Trauma Symptom Inventory.** Trauma symptoms were measured using the Trauma Symptom Inventory (TSI; Briere, 1995) which was developed to provide a standardized and clinically useful measure of posttraumatic symptomology. The short version of the TSI was administered, which includes four symptom subscales: Intrusive Experiences (IE), Defensive Avoidance (DA), Dissociation (DIS), and Impaired Self Reference (ISR). The TSI has demonstrated reliability in a United States general population standardization sample (n = 812, α = .86), and predictive validity (91% of PTSD cases in a subset of the standardization sample were correctly predicted; Briere, 1995). Construct validity has also been demonstrated in a clinical sample, such that those with a history of interpersonal victimization (defined as sexual or physical abuse in childhood, and/or adult sexual or physical assault) scored higher on all of the TSI subscales (Briere et al., 1995). In the current study, internal consistency for the aggregated four subscales was high (Cronbach’s α = .93). Cronbach’s alphas for the subscales were: Intrusive Experiences, α = .73; Defensive Avoidance, α = .76; Dissociation, α = .84; and Impaired Self Reference, α = .80.

**Adult Attachment Interview.** Adult unresolved status with respect to loss or trauma was assessed using the Adult Attachment Interview which asks respondents to describe their childhood relationships with attachment figures (Main & Goldwyn, 1998). Instead of using the interview as a self-report instrument, style of discourse when describing these relationships is coded. When participants are discussing abuse or loss, their discourse is rated between 1 and 9 (with 9 indicating the greatest severity and frequency of unresolved discourse). The greatest unresolved rating is then

---

⁶ Note: it is not surprising that internal consistency for the entire scale is low given that it is meant to measure five different types of abuse.
selected to represent the unresolved score. A high unresolved score reflects a high degree of inexplicable or uncorrected lapses in speech or logic when talking about traumatic experiences, such as taking responsibility for an event that could not possibly be caused by the speaker, having disoriented and confused speech, or using a strange style of discourse (e.g., eulogistic or extremely detailed speech). The AAI has demonstrated test-retest reliability, and discriminant validity (AAI classifications were independent of memory, social desirability, and verbal and performance intelligence; Bakermans-Kranenburg, & van IJzendoorn, 1993). Inter-rater reliability for the Unresolved scale was calculated using intra class correlation using a two-way mixed effects model \( r(15) = .96 \).

**FR Behaviours.** Established FR coding procedures are outlined in the manual by Main and Hesse (1992, 2006). FR behaviours are categorized by Type 1 or Type 2, and sub-categorized by six specific behaviours (FR Type 1: Threatening, Frightened, and Dissociated; and FR Type 2: Timid/deferential, Sexualized, and Disorganized). To the extent that they are observed, each of the six sub-categories of behaviour is rated on a 9-point scale. The sub-category with the highest rating is then selected as the total FR behaviour rating. The Type 1 FR rating, and the Type 2 FR rating, is the highest sub-category rating within that respective category. Inter-rater reliability for Total FR was calculated using intra class correlation using a two-way mixed effects model \( r (16) = .75 \).

**Control variables.** Maternal sensitivity was measured using the Maternal Behaviour Q-Sort mini version (Pederson, Moran, & Bento, 1999). This 25-item scale is an observational measure that compares each mother’s behaviour to a prototypically sensitive mother’s behaviour on attachment relevant sensitive/insensitive behaviours. Each mother emerges with a correlation between 1 and -1 that represents how close her behaviour matches with that of a prototypically sensitive mother’s behaviour, with 1 meaning perfectly sensitive, and -1 meaning completely insensitive. Overall inter-rater reliability of sensitivity for the greater longitudinal study was \( r (15) = .97 \), calculated using intra class correlation coefficients using a two-way mixed effects model. Stress, anxiety, and depression were measured using the Depression, Anxiety, and Stress Scales (Lovibond & Lovibond, 1995). This scale is a 42-item self-report measure that provides depression, anxiety, and stress subscales. Internal consistency in the current study for the total inventory was high (Cronbach’s \( \alpha = .94 \)).
Procedure

The study procedure was approved by Western University Non-Medical Research Ethics Board. Adult mothers and their children were recruited postnatally from hospitals in South Western Ontario. Informed consent was obtained (see Appendix B). Maternal trauma symptoms (TSI); attachment orientation (AAI); and stress, anxiety, and depression (DASS) were measured at 3-4 months (child’s age). At 10 months (child’s age) the Childhood Trauma Questionnaire was administered, the mother’s frightened/frightening/dissociated (FR) behaviours were observed, and the mother’s sensitivity (MBQS) was observed. All data were collected during home visits that were conducted for the larger longitudinal study, and were no more than two hours in duration. During the first home visits, researchers conducted the AAI with the mothers, the mothers were videotaped playing with their babies for twenty minutes (for the larger study), and were asked to fill out self-report questionnaires. During the third home visits (second home visits took place for the larger study) mothers were; videotaped playing with and feeding their babies (for the MBQS and FR ratings), interviewed (for the larger study), and asked to fill out self-report questionnaires. All behavioural measures (i.e., AAI, FR, and MBQS) were videotaped for later coding.
CHAPTER 3

RESULTS
Results

Descriptive Statistics

See Table 1 for childhood maltreatment descriptive statistics, and Table 2 for childhood maltreatment subtype correlations. With regard to attachment classification as measured by the AAI, 34 (42.7%) mothers were classified as autonomous, 18 (25%) were classified as dismissing, 17 (23.6%) were classified as unresolved/disorganised, and 3 (4.2%) were classified as preoccupied. Regardless of classification, all mothers received a continuous unresolved attachment score. The mean unresolved attachment score was 3.87 (Min = 1, Max = 8.5, SD = 1.74). See Table 3 for trauma symptom descriptive statistics and Table 4 for trauma symptom subscale correlations. Since the subscales were consistently highly inter-correlated with one another, they were aggregated for hypothesis-related testing. The mean FR behaviour score was 3.70 (Min = 1, Max = 9, SD = 1.82).

The CTQ (skewness = 1.42), TSI (skewness = .63), unresolved score on the AAI (skewness = .75), and FR parent behaviour (skewness = 1.09) were all positively skewed (i.e., at least two times the standard error of skewness which was .283). The CTQ subscales were heavily positively skewed (i.e., many of the subscales violated the convention of being over skewness = 2 for performing correlation analyses); therefore, for the correlational analyses, and the moderation analyses, the CTQ data were transformed (by Log10) as recommended in Howell (2007) and Tabachnick and Fidell (2007). The revised skewness statistics, following the transformations, are reported in the tables of descriptive statistics. All skewness values were improved by the transformation, but sexual abuse was still substantially positively skewed (i.e., skewness > 2). Therefore, sexual abuse was transformed into a dichotomous variable for the correlation analyses, which reduced skewness to 1.83 for sexual abuse.
Table 1
Descriptive Statistics for the Childhood Trauma Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>Skewness</th>
<th>Skewness Post-Trans</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Abuse</td>
<td>1.69</td>
<td>1.01</td>
<td>5.00</td>
<td>20.00</td>
<td>7.74</td>
<td>3.60</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>2.15</td>
<td>1.67</td>
<td>5.00</td>
<td>13.00</td>
<td>6.19</td>
<td>2.01</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>4.43</td>
<td>1.83</td>
<td>5.00</td>
<td>17.00</td>
<td>5.63</td>
<td>2.09</td>
</tr>
<tr>
<td>Emotional Neglect</td>
<td>1.12</td>
<td>.34</td>
<td>5.00</td>
<td>18.00</td>
<td>8.32</td>
<td>3.06</td>
</tr>
<tr>
<td>Physical Neglect</td>
<td>2.23</td>
<td>1.82</td>
<td>5.00</td>
<td>12.00</td>
<td>5.83</td>
<td>1.55</td>
</tr>
<tr>
<td>Total Maltreatment</td>
<td>1.42</td>
<td>.93</td>
<td>25.00</td>
<td>60.00</td>
<td>33.70</td>
<td>8.42</td>
</tr>
</tbody>
</table>

Note. N = 72. A score of 5 on any subscale of the CTQ indicates no report of maltreatment in that domain. All descriptive statistics are for the raw data prior to transformation, with the exception of Skewness Post-Trans. Post-trans refers to post transformations to reduce skewness. Total maltreatment and maltreatment subtypes were transformed by log10, with the exception of sexual abuse which was dichotomized.

Table 2
Correlation Matrix of Childhood Maltreatment Experiences Post Transformations

<table>
<thead>
<tr>
<th></th>
<th>Emotional Abuse</th>
<th>Physical Abuse</th>
<th>Sexual Abuse</th>
<th>Emotional Neglect</th>
<th>Physical Neglect</th>
<th>CTQ Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Abuse</td>
<td>1</td>
<td>.433**</td>
<td>.068</td>
<td>.347**</td>
<td>.473**</td>
<td>.781**</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td></td>
<td>1</td>
<td>.297*</td>
<td>.236*</td>
<td>.469**</td>
<td>.671**</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td></td>
<td></td>
<td>1</td>
<td>-.116</td>
<td>.455**</td>
<td></td>
</tr>
<tr>
<td>Emotional Neglect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.433**</td>
<td>.675**</td>
</tr>
<tr>
<td>Physical Neglect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.643**</td>
</tr>
<tr>
<td>CTQ Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Note. N = 72. ** indicates significance at p ≤ .01, and * indicates significance at p ≤ .05 (2-tailed test).
Table 3
Descriptive Statistics for Trauma Symptom Inventory

<table>
<thead>
<tr>
<th></th>
<th>Skewness</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrusive Experiences</td>
<td>.28</td>
<td>.00</td>
<td>15.00</td>
<td>6.24</td>
<td>3.83</td>
</tr>
<tr>
<td>Defensive Avoidance</td>
<td>.81</td>
<td>.00</td>
<td>13.00</td>
<td>3.85</td>
<td>3.39</td>
</tr>
<tr>
<td>Dissociation</td>
<td>1.22</td>
<td>.00</td>
<td>17.00</td>
<td>4.26</td>
<td>4.33</td>
</tr>
<tr>
<td>Impaired Self Reference</td>
<td>.66</td>
<td>.00</td>
<td>15.00</td>
<td>5.74</td>
<td>4.13</td>
</tr>
<tr>
<td>Total Trauma Symptoms</td>
<td>.63</td>
<td>1.00</td>
<td>53.00</td>
<td>20.10</td>
<td>14.05</td>
</tr>
</tbody>
</table>

Note. N = 72.

Table 4
Correlation Matrix of Trauma Symptom Inventory Subscales

<table>
<thead>
<tr>
<th></th>
<th>Intrusive Experiences</th>
<th>Defensive Avoidance</th>
<th>Dissociation</th>
<th>Impaired Self Reference</th>
<th>Total Trauma Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrusive Experiences</td>
<td>1</td>
<td>.682***</td>
<td>.682***</td>
<td>.706***</td>
<td>.855***</td>
</tr>
<tr>
<td>Defensive Avoidance</td>
<td>1</td>
<td></td>
<td>.868***</td>
<td>.717***</td>
<td>.906***</td>
</tr>
<tr>
<td>Dissociation</td>
<td>1</td>
<td></td>
<td></td>
<td>.762***</td>
<td>.927***</td>
</tr>
<tr>
<td>Impaired Self Reference</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>.894***</td>
</tr>
<tr>
<td>Total Trauma Symptoms</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 72. *** indicates significance at $p \leq .001$ (2-tailed test).
Associations between Childhood Trauma History and Integrative Difficulties

Both unresolved status and trauma symptoms were associated with certain types of childhood trauma history. See Table 5 for correlations between subtypes of childhood maltreatment (CTQ) and indices of integrative difficulties (unresolved, TSI Total, and TSI subscales). In sum, the association between total childhood maltreatment and unresolved scores approached significance ($r = .22, p = .058$), and childhood maltreatment was significantly correlated with trauma symptoms ($r = .27, p = .024$). Emotional abuse ($r = .31, p = .008$) and physical neglect ($r = .27, p = .024$) were significantly correlated with trauma symptoms. Physical abuse ($r = .33, p = .005$) and sexual abuse ($r = .35, p = .003$) were significantly correlated with unresolved score. Emotional neglect was not significantly correlated with trauma symptoms or unresolved score.

The associations between unresolved attachment and trauma symptoms also were explored. The total scores were not related ($r = .12, p = .366$). Unresolved attachment was not related to intrusive experiences ($r = .01, p = .932$), defensive avoidance ($r = .14, p = .241$), or impaired self-reference ($r = .01, p = .935$). There was a trending relationship between unresolved attachment and dissociation ($r = .22, p = .060$).
Table 5

Correlations between Childhood Maltreatment Experiences (Transformed CTQ) and Indicators of Trauma Integration Difficulties (Unresolved attachment, and TSI subscales and total score)

<table>
<thead>
<tr>
<th></th>
<th>Unresolved Trauma Symptoms Total</th>
<th>Intrusive Experiences</th>
<th>Defensive Avoidance</th>
<th>Dissociation</th>
<th>Impaired Self Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emotional Abuse</strong></td>
<td>0.028</td>
<td>0.310**</td>
<td>0.377**</td>
<td>0.218</td>
<td>0.240*</td>
</tr>
<tr>
<td><strong>Physical Abuse</strong></td>
<td>0.330**</td>
<td>0.098</td>
<td>0.090</td>
<td>0.087</td>
<td>0.123</td>
</tr>
<tr>
<td><strong>Sexual Abuse</strong></td>
<td>0.347**</td>
<td>0.076</td>
<td>-0.004</td>
<td>0.031</td>
<td>0.146</td>
</tr>
<tr>
<td><strong>Emotional Neglect</strong></td>
<td>0.076</td>
<td>0.179</td>
<td>0.135</td>
<td>0.165</td>
<td>0.118</td>
</tr>
<tr>
<td><strong>Physical Neglect</strong></td>
<td>0.140</td>
<td>0.266*</td>
<td>0.246*</td>
<td>0.236*</td>
<td>0.223</td>
</tr>
<tr>
<td><strong>CTQ Total</strong></td>
<td>0.224</td>
<td>0.346**</td>
<td>0.327**</td>
<td>0.254*</td>
<td>0.324**</td>
</tr>
</tbody>
</table>

Note. N = 72. ** indicates significance at \( p \leq .01 \), and * indicates significance at \( p \leq .05 \) (2-tailed test). Hypothesis-related tests are in bold. Intrusive experiences, defensive avoidance, dissociation, and impaired self-reference are subscales of the Trauma Symptom Inventory, and are included for exploration purposes only.
Associations with FR Behaviours

Table 6 shows the correlations between FR behaviours and childhood maltreatment history (CTQ). Childhood history of sexual abuse was significantly associated with FR parent behaviours \((r = .32, p = .007)\). Childhood history of physical abuse had a trending relationship to FR \((r = .20, p = .086)\). Emotional abuse \((r = -.10, p = .396)\), emotional neglect \((r = -.08, p = .522)\), and physical neglect \((r = .08, p = .502)\) were not related to FR.

Table 7 shows the correlations between FR parent behaviours and indices of integrative difficulties (trauma symptoms and unresolved scores). As expected, FR was significantly correlated with Unresolved score \((r = .24, p = .042)\), and trauma symptoms \((r = .24, p = .042)\).

Entered into a regression to see whether they uniquely predicted FR parent behaviours, unresolved score contributed significantly to the prediction \((b = .31, SE = .55, t(69) = 2.60, p = .011)\), and trauma symptoms was approaching significance \((b = .03, SE = .02, t(69) = 1.78, p = .080)\). The overall model was significant \((R^2 = .37, F(2, 69) = 5.52, p = .006)\).

Table 6

<table>
<thead>
<tr>
<th></th>
<th>Emotional Abuse</th>
<th>Physical Abuse</th>
<th>Sexual Abuse</th>
<th>Emotional Neglect</th>
<th>Physical Neglect</th>
<th>CTQ Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total FR Score</td>
<td>-.102</td>
<td>.204(^a)</td>
<td>.315(^*)</td>
<td>-.077</td>
<td>.080</td>
<td>.052</td>
</tr>
</tbody>
</table>

Note. N = 72. \(^*\) indicates significance at \(p \leq .01\) (2-tailed test). \(^a\) indicates a trend whereby .10 > \(p > .05\) (2-tailed test).

Table 7

<table>
<thead>
<tr>
<th></th>
<th>Unresolved Score</th>
<th>TSI Total</th>
<th>Intrusive Experiences</th>
<th>Defensive Avoidance</th>
<th>Dissociation</th>
<th>Impaired Self-Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total FR Score</td>
<td>.241(^*)</td>
<td>.240(^*)</td>
<td>.196</td>
<td>.306(^**)</td>
<td>.254(^*)</td>
<td>.118</td>
</tr>
</tbody>
</table>

Note. N = 72. \(^**\) indicates significance at \(p \leq .01\), and \(^*\) indicates significance at \(p \leq .05\) (2-tailed test). Hypothesis-related tests are in bold.
Mediations

The following mediations were tested by following the bootstrapping procedure outlined in Preacher and Hayes (2008) because of the small sample size (N = 72), and because bootstrapping is a non-parametric test that does not assume any characteristic configuration of the data (such as a normal sampling distribution). Since normality is not assumed for bootstrapping, the data were not transformed for these analyses. Indirect effects are not often normally distributed. The following mediations were tested using the SPSS macro companion to the 2008 article. Five-thousand bootstrapped samples were requested for each mediation analysis.

Overall Model. First I tested the relationship between trauma history and FR parent behaviours, mediated by indices of integrative difficulty (trauma symptoms, unresolved status; see Figure 1). The entire model was significant ($R^2 = .14, F(3, 68) = 3.65, p = .017$). See Figure 3 for estimates of all paths, calculated using ordinary least squares regression. The top part of Figure 3 shows that the total relationship between childhood trauma and FR behaviours was not significant ($b = .02, SE = .03, t(68) = .74, p = .461, ns$). The bottom part of Figure 3 shows the following: the direct relationship between childhood trauma and FR behaviours was not significant ($b = -.01, SE = .03, t(68) = -.24, p = .811, ns$); the direct effect of childhood trauma on unresolved score was not significant ($b = .04, SE = .02, t(68) = 1.10, p = .094, ns$); the direct effect of childhood trauma on trauma symptoms was significant ($b = .46, SE = .19, t(68) = 2.42, p = .018$); the direct effect of unresolved score on FR was significant ($b = .31, SE = .12, t(68) = 2.58, p = .012$); and the direct effect of trauma symptoms on FR was not significant ($b = .03, SE = .02, t(68) = 1.76, p = .082, ns$).
Figure 3. Unstandardized regression coefficients for the relationship between childhood trauma and FR parent behaviours. P-values are in brackets. A: is the total relationship between childhood trauma and FR behaviours (when the mediators are not taken into account). B: shows the direct relationship between childhood trauma and FR behaviours, as mediated by trauma symptoms and unresolved score.
The bootstrapped results for indirect effects were as follows. Note that indirect effects are considered statistically significant when the 95% bias-corrected confidence interval obtained for the indirect effect does not include zero.\(^7\) The indirect path from childhood trauma, to FR behaviours, through unresolved was not significant \((b^{\text{bootstrap}} = .01, SE = .01, 95\% \text{ CI} [-.001, .052], ns)\). The indirect path from childhood trauma, to FR behaviours, through trauma symptoms also was not significant \((b^{\text{bootstrap}} = .01, SE = .01, 95\% \text{ CI} [-.002, .044], ns)\). However, the total indirect path from childhood trauma, to FR behaviours, through unresolved score \text{ and} trauma symptoms was significant \((b^{\text{bootstrap}} = .03, SE = .02, 95\% \text{ CI} [.004, .069])\).

\textbf{Separating Different Types of Maltreatment.} See Table 8 for the unstandardized regression coefficients for the direct and total effects, and R-squared values, for the same mediation analysis as reported above, but with separate analyses for the five different types of childhood maltreatment. See Table 9 for the bootstrapped tests of indirect effects for each subtype of childhood maltreatment. In sum, there was a significant indirect effect of emotional abuse on parent FR behaviour through trauma symptoms. Also, the effect of sexual abuse on parent FR behaviour was fully mediated by a significant indirect effect through unresolved score and trauma symptoms combined. There were no significant indirect effects of physical abuse, physical neglect, or emotional neglect on parent FR behaviours. The same analyses were run while controlling for the other four types of childhood maltreatment (i.e., entering other types of maltreatment as covariates) to see if I could detect indirect effects attributable to single types of abuse. This caused all the indirect effects to become non-significant.

\(^7\) Note: if the confidence interval appears to contain zero (i.e., .00, .04), but is noted to be statistically significant, it is because the .00 is actually more than zero (i.e., because of the actual value in the thousandths column). That is to say, the confidence interval only contains zero if the lower limit of the confidence interval is a negative number and the higher limit of the confidence interval is a positive number.
Table 8

Unstandardized Regression Coefficients for Direct and Total Effects, and R-squared for Mediation Analyses of Five Different Types of Childhood Maltreatment Predicting FR Behaviour

<table>
<thead>
<tr>
<th></th>
<th>a₁</th>
<th>a₂</th>
<th>b₁</th>
<th>b₂</th>
<th>c</th>
<th>c₁</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Abuse</td>
<td>.02</td>
<td>1.10*</td>
<td>.31**</td>
<td>.03*</td>
<td>-.05</td>
<td>-.09</td>
<td>.16**</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>.32**</td>
<td>.66</td>
<td>.25*</td>
<td>.02</td>
<td>.22*</td>
<td>.13</td>
<td>.15**</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>.16</td>
<td>.92</td>
<td>.27*</td>
<td>.02</td>
<td>.23*</td>
<td>.16</td>
<td>.17**</td>
</tr>
<tr>
<td>Emotional Neglect</td>
<td>.03</td>
<td>.68</td>
<td>.31*</td>
<td>.03</td>
<td>-.02</td>
<td>-.05</td>
<td>.14*</td>
</tr>
<tr>
<td>Physical Neglect</td>
<td>.17</td>
<td>2.32*</td>
<td>.31*</td>
<td>.03</td>
<td>.10</td>
<td>-.01</td>
<td>.14*</td>
</tr>
</tbody>
</table>

Note. N = 72. ** indicates significance at p ≤ .01, and * indicates significance at p ≤ .05. R² is for the whole model. See Figure 4 for diagram of labels. Small coefficients (i.e. .03) still obtain significance due to small standard errors.
A:

Childhood Trauma  \[ c \]  FR Parent Behaviours

B:

Childhood Trauma  \[ a^1 \]  Unresolved Score  \[ b^1 \]  FR Parent Behaviours

Childhood Trauma  \[ a^2 \]  Trauma Symptoms  \[ c^1 \]  FR Parent Behaviours

Figure 4. Diagram of labels for the direct effect of childhood trauma on unresolved score \((a^1)\), direct effect of childhood trauma on trauma symptoms \((a^2)\), direct effect of unresolved score on FR behaviours \((b^1)\), direct effect of trauma symptoms on FR behaviours \((b^2)\), total effect of childhood trauma on FR behaviours \((c)\), and direct effect of childhood trauma on FR behaviours \((c^1)\) with mediators taken into account.
Table 9

Bootstrapped Tests of Indirect Effects for Five Different Types of Childhood Maltreatment Predicting FR Behaviour

<table>
<thead>
<tr>
<th></th>
<th>Indirect Effect of Trauma on FR through Unresolved</th>
<th>Indirect Effect of Trauma on FR through Trauma Symptoms</th>
<th>Total Indirect Effect of Trauma on FR through Unresolved and Trauma Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(b_{\text{boot}})</td>
<td>(SE)</td>
<td>95% CI</td>
</tr>
<tr>
<td>Emotional Abuse</td>
<td>.00</td>
<td>.02</td>
<td>-.04, .07</td>
</tr>
<tr>
<td>Physical Abuse</td>
<td>.08</td>
<td>.06</td>
<td>-.00, .26</td>
</tr>
<tr>
<td>Sexual Abuse</td>
<td>.07</td>
<td>.09</td>
<td>-.00, .36</td>
</tr>
<tr>
<td>Emotional Neglect</td>
<td>.01</td>
<td>.02</td>
<td>-.03, .07</td>
</tr>
<tr>
<td>Physical Neglect</td>
<td>.05</td>
<td>.07</td>
<td>-.06, .27</td>
</tr>
</tbody>
</table>

Note. N = 72. *indicates significant results (i.e., the 95% bias corrected confidence interval does not contain zero). If the confidence interval appears to contain zero (i.e., .00, .04), but is noted to be statistically significant, it is because the .00 is actually more than zero (i.e., because of actual value in the thousandths column). That is to say, the confidence interval only contains zero if the lower limit of the confidence interval is a negative number and the higher limit of the confidence interval is a positive number.
Moderations

The hypothesized moderations were tested by following the procedures outlined in Baron and Kenny (1986). See Figure 2 for the conceptual relationship between childhood trauma and FR parent behaviours, moderated by integrative difficulties (i.e., trauma symptoms and unresolved status). As noted previously, the CTQ subscales were heavily positively skewed; therefore, for the moderation analyses, the CTQ data were transformed (by Log10) as recommended in Howell (2007) and Tabachnick and Fidell (2007).

The regression analysis investigated the main effects, on FR parent behaviour, of childhood trauma, trauma symptoms, and unresolved scores; and the two-way interaction between childhood trauma and trauma symptoms, and the two-way interaction between childhood trauma and unresolved scores. The predictor variables were centered. FR behaviour was simultaneously regressed on childhood trauma, trauma symptoms, unresolved scores, the cross-product of childhood trauma and trauma symptoms, and the cross-product of childhood trauma and unresolved scores. The overall regression was not statistically significant \[ R^2 = .15, F (5, 66) = 2.34, p = .051, ns \]. There was no main effect of childhood trauma \[ b = -.93, t(66) = - .41, p = .686, ns \], or trauma symptoms \[ b = .03, t(66) = 1.87, p = .067, ns \]. There was a main effect of unresolved score \[ b = .31, t(66) = 2.31, p = .024 \]. There was no significant interaction between childhood trauma and trauma symptoms \[ b = -.13, t(66) = -.88, p = .383, ns \], or childhood trauma and unresolved score \[ b = .16, t(66) = .14, p = .892, ns \].

There may have been no significant interactions because of limited power due to small sample size. To help test for this possibility the two-way interactions were also tested in separate regressions, but the findings were still the same (i.e., no significant interactions).

---

8 I also explored the possibility of a three-way interaction. FR behaviour was simultaneously regressed on the centred predictors: childhood trauma (transformed), trauma symptoms, unresolved scores, the cross-product of childhood trauma and trauma symptoms, the cross-product of childhood trauma and unresolved scores, and the cross-product of childhood trauma, trauma symptoms, and unresolved scores. The overall regression was not significant \[ R^2 = .16, F (6, 65) = 2.01, p = .077, ns \]. There was no main effect of childhood trauma \[ b = -1.09, t(65) = - .47, p = .637, ns \], or trauma symptoms \[ b = .03, t(65) = 1.96, p = .055, ns \]. There was a significant main effect of unresolved \[ b = .33, t(65) = 2.37, p = .021 \]. There was no significant two-way interaction between childhood trauma and trauma symptoms \[ b = -.12, t(65) = -.79, p = .430, ns \], or childhood trauma and unresolved score \[ b = .42, t(65) = .34, p = .738, ns \]. The three-way interaction between childhood trauma, trauma symptoms, and unresolved was also not statistically significant \[ b = -.05, t(65) = -.65, p = .517, ns \].
Discriminant Validity

FR was regressed onto the control variables in the first step of each regression, and the indicators of integrative difficulties in the second step (unresolved, and trauma symptoms). This was to determine the variance in FR uniquely accounted for by integrative difficulties beyond the variance accounted for by control variables.

The first regression analysis controlled for maternal sensitivity. In step one, maternal sensitivity alone only accounted for 0.2 percent of the variance in FR \([F (1, 70) = .14, p=.705, \text{ ns}]\). In step two, trauma symptoms and unresolved accounted for an additional 13.6 percent of the variance in FR after controlling for maternal sensitivity \([F (3, 68) = 3.62, p=.017]\). Regression coefficients are reported in Table 10.

The second regression analysis controlled for stress, anxiety, and depression. In step one, stress, anxiety, and depression (total score) alone only accounted for 4.0 percent of the variance in FR \([F (1, 68) = 2.80, p=.099, \text{ ns}]\). In step two, trauma symptoms and unresolved accounted for an additional 11.2 percent of the variance in FR after controlling for stress, anxiety, and depression \([F (3, 66) = 3.93, p=.012]\). Regression coefficients are reported in Table 11.
Table 10

Regression Coefficients for Maternal Sensitivity Discriminant Validity Analysis (Predicting FR Behaviour)

<table>
<thead>
<tr>
<th>Model</th>
<th>b</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Constant)</td>
<td>3.74</td>
<td>.23</td>
<td>16.14</td>
</tr>
<tr>
<td></td>
<td>Maternal Sensitivity</td>
<td>-.14</td>
<td>.37</td>
<td>-.38</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Constant)</td>
<td>1.99</td>
<td>.58</td>
<td>3.45</td>
</tr>
<tr>
<td></td>
<td>Maternal Sensitivity</td>
<td>.02</td>
<td>.36</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>Unresolved Score</td>
<td>.31</td>
<td>.12</td>
<td>2.58</td>
</tr>
<tr>
<td></td>
<td>Trauma Symptoms</td>
<td>.03</td>
<td>.02</td>
<td>1.75</td>
</tr>
</tbody>
</table>

Note. N = 72.

Table 11

Regression Coefficients for Depression, Anxiety, Stress Discriminant Validity Analysis (Predicting FR Behaviour)

<table>
<thead>
<tr>
<th>Model</th>
<th>b</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Constant)</td>
<td>3.36</td>
<td>.32</td>
<td>10.50</td>
</tr>
<tr>
<td></td>
<td>DASS Score</td>
<td>.03</td>
<td>.02</td>
<td>1.68</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Constant)</td>
<td>1.99</td>
<td>.56</td>
<td>3.55</td>
</tr>
<tr>
<td></td>
<td>DASS Score</td>
<td>.02</td>
<td>.02</td>
<td>.95</td>
</tr>
<tr>
<td></td>
<td>Unresolved Score</td>
<td>.33</td>
<td>.12</td>
<td>2.76</td>
</tr>
<tr>
<td></td>
<td>Trauma Symptoms</td>
<td>.01</td>
<td>.02</td>
<td>.74</td>
</tr>
</tbody>
</table>

Note. N = 70. DASS scores were not available for two participants.
CHAPTER 4

DISCUSSION
Discussion

I will now discuss the different outcomes associated with different types of childhood maltreatment. The current study provides preliminary evidence that mothers may have to resolve certain attachment relevant traumatic experiences, and work through their trauma symptoms, in order to avoid particular harmful parenting behaviours. Results are also discussed in terms of key measurement issues that are applicable in the lab and in the clinic.

**Childhood Maltreatment History and Integrative Difficulties**

As predicted, history of childhood maltreatment was associated with integrative difficulties, but this was qualified by the type of childhood maltreatment. As hypothesized, childhood trauma was related to trauma symptoms overall. Also in line with predictions, childhood maltreatment was related to unresolved attachment at trend levels. A closer look at specific types of maltreatment revealed that emotional abuse and physical neglect were associated with trauma symptoms (but not unresolved indices), whereas physical abuse and sexual abuse were associated with unresolved attachment (but not trauma symptoms). Emotional neglect was not significantly correlated with trauma symptoms or unresolved attachment.

It is surprising that childhood physical abuse and sexual abuse were not related to trauma symptoms, given how devastating these types of abuse can be (Beltran, 2009; Glod, 1993). There may have been significant associations if the sample size were larger, or if this were not a community sample of adult mothers with low reported history of childhood physical and sexual abuse (i.e., the mean reported sexual abuse was 5.63 out of 20, and the mean reported physical abuse was 6.19 out of 20 on the CTQ, prior to transformations). However despite the limited variability, physical abuse and sexual abuse were associated with unresolved attachment. One possible reason for this is that there may be something specific about physical and sexual abuse that is associated with unresolved attachment specifically, without being associated with self-reported trauma symptoms more generally. Or, perhaps this is due to biased self-reporting on the TSI. It is also possible that this association is an artifact of the structure of the AAI: the interview

---

9 All forms of childhood maltreatment were inter-correlated with the exception of sexual abuse, which was correlated with all other forms of childhood maltreatment except for emotional and physical neglect. While this is not a central finding to the current study, it is interesting to note for future research. Perhaps survivors of childhood sexual abuse are afforded particular attention (possibly harmful attention by abusers, and/or well-meaning attention by adults once the sexual abuse is revealed). It is also possible that this pattern of associations is because of all the types of abuse, sexual abuse may be the most likely type of maltreatment to take place outside of the immediate family. Larger samples have also reported lower associations with sexual abuse and this is thought to be because of low variability of sexual abuse experiences (Bernstein & Fink, 1998).
protocol emphasizes sexual and physical abuse by name, but does not explicitly mention emotional abuse and neglect experiences. Therefore, it makes sense that history of physical and sexual abuse would be more likely to be associated with the AAI measure of unresolved attachment. Future research should look at a more inclusive measure of unresolved attachment that more directly assesses indices of lack of resolution of emotional abuse and neglect experiences.

Exploratory analyses revealed that physical neglect was associated with trauma symptoms, specifically intrusive experiences, defensive avoidance, and impaired self-reference. Inspection of the correlations between maltreatment types reveals that physical neglect, of all maltreatment types, had the highest correlations with physical abuse, emotional abuse, and emotional neglect. It may be the collective experience of multiple types of childhood maltreatment that leads to trauma symptoms later in life, and this is reflected in the Total CTQ scores being correlated with all of the trauma symptoms.

The developmental consequences of physical neglect, where the caring environment does not sufficiently meet the physical needs of a child and abuse may also be taking place, may be illustrative of complex trauma that can arise from prolonged interpersonal trauma (Cloitre et al., 2009). This is in line with research that has associated maternal hostility toward their children with early experiences of family violence and neglect (Bailey et al., 2012). Researchers have found that physically neglected children may be more likely to have parents who have substance abuse issues, and/or mental health problems (whereas poverty was not a predictive factor when family characteristics were controlled; Carter & Myers, 2007). Compared to other types of maltreatment, physical neglect has been related more strongly to some types of psychopathology (Gauthier, Stollak, Messé, & Aronoff, 1996; Gil, Gama, de Jesus, Lobato, Zimmer, & Belmonte-De-Abreu, 2009).

Emotional abuse was also associated with self-reported trauma symptoms. Exploratory correlations suggested that it specifically related to intrusive experiences, dissociation, and impaired self-reference. In contrast, emotional neglect had no associations with trauma symptoms. Neither emotional abuse nor physical or emotional neglect were associated with unresolved attachment. This may be because assessing emotional abuse and neglect (especially retrospectively) may be more difficult than assessing physical and sexual abuse because they are less tangible in nature (Glaser, 2002). Therefore it is expected to be more difficult to find associations for emotional abuse, and neglectful experiences. First of all, it is more likely that self-
reported traumatic experiences would be related to self-reported trauma symptoms (instead of observed indices of unintegrated trauma), especially if part of the variability in these scales is related to degree of focusing on, or trying to avoid, difficult childhood experiences. One would have to focus more on less tangible emotional abuse and neglect than physical or sexual abuse in order to be able/willing to report it. Stated another way, it would be easier to ignore and fail to report more subtle emotional maltreatment experiences than it would be to avoid thinking about sexual and physical maltreatment experiences. For example, a CTQ item for emotional abuse reads, “I thought that my parents wished I had never been born.” and an item for physical abuse is, “People in my family hit me so hard that it left me with bruises or marks.” Although any childhood memory arguably could be influenced by current state of mind (e.g. mood, or current mental focus; Hardt & Rutter, 2004; Roisman, Fortuna, & Holland, 2006) the former item may be more affected than the latter item because it is more inferential and less concrete. Emotional neglect out of all five types of childhood maltreatment may be the most difficult to detect, because emotional abuse experiences may be easier to remember (even though they may not be labelled as abuse, one could still remember incidents such as, “People in my family called me things like ‘stupid,’ ‘lazy,’ or ‘ugly.’”), and physical neglect experiences could be compared with what other children clearly had.

Also, individuals have different reference points for what is considered emotional abuse or neglect. Neglect has been found to be detrimental to emotional knowledge (Sullivan, Carmody, & Lewis, 2010), which makes sense given that abused and neglected children are less likely to have their feelings validated or even responded to (DeOliveira et al., 2004). Without appropriate caregiver emotional responses, a maltreated child may not be able to identify his/her own internal states (DeOliveira et al., 2004; Gergely & Watson, 1996). A poignant clinical example is the story of a child who was taken into custody because of severe neglect. After several minutes the case-worker driving the car noticed in horror that the child’s finger had been stuck in the door the whole time. The child did not react, possibly because her neglectful experiences had taught her to not respond to (or perhaps even detect) her own experience (B. Kenyon, personal communication, May 2013). It is also possible that for emotional maltreatment, respondents may not know what it is like to not be maltreated in that way, so when asked, “Were you emotionally abused?” emotionally abused mothers may not realize they were abused, and would therefore not report it. Given these factors, it is impressive that a significant association was found between emotional abuse history
and three of the four trauma symptoms.

Retrospective self-reports of childhood maltreatment in general are susceptible to bias. False negatives appear to be more common than false positives (Hardt & Rutter, 2004). The under-reporting of childhood maltreatment could lead to exaggerated associations between self-reports of childhood maltreatment and negative outcomes (if reportedly higher functioning mothers also are not reporting childhood maltreatment; Hardt & Rutter, 2004). It is also possible that childhood maltreatment could have been under-reported if the respondent was severely dissociated from the trauma, and did not want to confront it by reporting it on a questionnaire. Furthermore, some mothers would not want to report childhood maltreatment due to concerns about family loyalty. With regard to the current study, the childhood trauma questionnaire does include a three-item denial subscale, and the two mothers who scored high on this subscale were excluded from analyses. Limitations associated with self-report could be addressed in future research by finding other ways of measuring history of childhood maltreatment, especially for emotional abuse and neglect. One possible avenue for future research is using an AAI subscale that measures “lack of love” as a possible indicator of lack of emotional care.

The TSI is also a self-report measure, and is therefore prone to self-report biases. To partially address this in the current study, integrative difficulties were also operationalized as unresolved attachment on the AAI, which is an observational measure (i.e., observation of discourse). Exploration uncovered that the only self-reported trauma symptom in this study that was related to unresolved attachment was dissociation (at trend levels). It has been suggested that unresolved lapses on the AAI are likely due to dissociation (e.g., Hesse & Main, 2006), and the current research supports this. In contrast, unresolved attachment and total self-reported trauma symptoms were not associated in the current study. A modest association was expected, rather than a strong association, because measures are expected to reflect true content (i.e., what the measure is attempting to capture) as well as features of the method of measurement itself (Campbell & Fiske, 1959). Despite the anticipated difference between the two methods, the association was still lower than expected. Unresolved attachment and self-reported trauma symptoms may be measuring two different aspects of integrative difficulties, rather than just two different methods assessing the same construct.

In sum, the key finding regarding history of childhood maltreatment and integrative difficulties was that they are both difficult constructs to measure, with emotional abuse and neglect
having particular features that make it difficult to assess, especially using a brief (although well-validated) self-report questionnaire. Despite these difficulties, there were still significant associations between childhood maltreatment and integrative difficulties in adulthood. Specifically, emotional abuse and physical neglect were more related to trauma symptoms, whereas physical and sexual abuse were more related to unresolved attachment. To some extent, these differences may reflect measurement difficulties; however, they also may indicate that different types of maltreatment are associated with different types of integrative difficulties. Future research with more and novel ways of measuring childhood maltreatment and integrative difficulties may clarify these relationships.

**Associations with FR Parent Behaviour**

**FR and childhood maltreatment.** FR parent behaviours were associated with sexual abuse history (and a trending association for physical abuse history) as predicted. This lends support to Hesse and Main’s (1999) theory that FR parent behaviours arise from parents’ previous traumatic experiences. This finding also corresponds to Lyons-Ruth and Block’s (1996) study that associated childhood physical and sexual abuse with FR-like behaviours.

Contrary to hypotheses, emotional abuse, physical neglect, and emotional neglect were not associated with FR parent behaviours. Even though emotional abuse was associated with several self-reported trauma symptoms, mothers who reported childhood emotional abuse did not show parenting difficulties in the domains assessed by this study. This may provide preliminary support that mothers who have suffered neglect or emotional abuse in their childhoods may not show the same degree of FR parenting difficulties that survivors of other types of maltreatment demonstrate. What is more likely is that because emotional abuse and neglect are particularly difficult to assess for the reasons outlined in the previous section, methodological issues may be obscuring associations between emotional maltreatment and neglect, and FR parenting behaviours.

There are other possible reasons why the associations between childhood maltreatment and FR parent behaviours were not as strong as expected. First of all, childhood maltreatment is the most distal variable from FR parent behaviour in the proposed model, so if the model is correct the correlations would be expected to be weaker (than the correlations between integrative difficulties and FR parent behaviours which are proximal to one another in the model). Secondly, integrative difficulties are assessed using two methods, whereas childhood maltreatment is only measured using self-report. Self-report to behaviour associations are attenuated (Campbell & Fiske, 1959),
and this was indeed the case in the mediational model (i.e., self-reported childhood maltreatment was more strongly associated with self-reported trauma symptoms, and observed unresolved attachment was more strongly associated with observed FR parent behaviour). This helps to exemplify why it is important to assess variables in multiple ways, and particularly not through self-report alone. Furthermore, associations between variables that are measured in different ways are especially compelling, since they lack shared method variance (Campbell & Fiske, 1959).

**FR and integrative difficulties.** As predicted, FR parent behaviour was associated with indices of trauma integration difficulties. FR parent behaviour was significantly associated with unresolved attachment. It is not surprising that mothers with unresolved attachment would exhibit FR parent behaviours because of the broad self-regulatory, emotional, and relational difficulties that are thought to be associated with unresolved attachment (DeOliveira et al., 2004). The association between unresolved attachment and FR parenting behaviours has been found a number of times previously (Hesse & Main, 2000; Hesse & Main, 2006; Jacobvitz et al., 2006; Madigan et al., 2006a, 2006b).

Also as predicted, trauma symptoms were associated with FR parent behaviours. Exploratory analyses revealed that FR parent behaviours were significantly associated with dissociation, and defensive avoidance. This is in line with Hesse and Main’s (1999, 2000) theory that FR behaviours originate from unresolved trauma that is triggered, either from external stimuli that subjectively reminds parents of their traumatic experiences, or from internal triggers such as thinking about the experiences. Once the traumatic experience is triggered in the mind, a threat is originating from within one’s own consciousness, and therefore is physically inescapable (Hesse & Main, 2006). This would theoretically lead to the trauma symptoms detected in the current study: to escape the threat that is within the mind, one may engage in defensive avoidance (e.g. “Trying to block out certain memories.”), and dissociate from the experience. Once the parent is dissociating, and/or expending effort to avoid the unintegrated trauma, attentional resources are overwhelmed and this interferes with parenting (Fearon & Mansell, 2001), theoretically leading to and/or failing to prevent FR behaviours.

The time delay between measurements may have weakened the associations in this study. Trauma symptoms and unresolved attachment were measured 6 to 7 months prior to measurement of childhood trauma history and FR behaviours. Separating measures by time may help control for some method biases by decreasing the likelihood that participants will remember previous
responses (in the current study this would include behaviours/discourse and answers on self-report measures) which could influence subsequent responses (Podsakoff et al., 2003); however, the time delay increases the risk of intervening factors affecting the outcome variable (Podsakoff, MacKenzie, & Podsakoff, 2012). Since the associations between the variables in this study are believed to be reasonably stable over time, the delay between measurements adds merit to the conclusions in this study because the associations were still found despite the time delay.

**Mediation Model**

Childhood trauma (all types combined) did not predict FR parent behaviours on its own; however inclusion of both unresolved attachment and trauma symptoms as mediators in the model led to significant prediction of FR parent behaviours. Analysing different types of childhood maltreatment separately for exploration purposes revealed that there may be different indirect paths between specific types of childhood maltreatment and FR parent behaviours. The significant association between childhood sexual abuse and FR parent behaviours was fully mediated through the total indirect effect of unresolved attachment and trauma symptoms combined. This was the only true mediation found within this study (i.e., the effect of childhood sexual abuse on FR parent behaviours was statistically significant until unresolved attachment and trauma symptoms were entered as mediators). That is to say, survivors of childhood sexual abuse showed parenting difficulties, but this relationship was fully accounted for through the combination of unresolved attachment and trauma symptoms. On the other hand, childhood emotional abuse did not predict parenting difficulties on its own; rather childhood emotional abuse appeared to indirectly affect parenting through trauma symptoms alone. According to a conservative definition of mediation, this was not a true mediation, since childhood emotional abuse did not predict FR parent behaviours on its own; however, the significant indirect effect through trauma symptoms is still notable. These analyses based on separate types of childhood maltreatment should be interpreted with caution: because there were several regression analyses, the chance of a family-wise Type I error rate is high. These associations should be tested in other samples to see if they are true findings.

Another important finding that was touched on in previous sections is that the associations that were the strongest in the mediation model were those between measures that shared the same assessment method. Childhood maltreatment was significantly associated with trauma symptoms, and unresolved attachment was significantly associated with FR parent behaviours. The
associations between childhood trauma and unresolved attachment, and trauma symptoms and FR parent behaviours, were only approaching significance. The weakest associations were those between childhood trauma and FR parent behaviours.

**Resiliency (Moderation) Model**

There were no significant interactions between childhood trauma, unresolved attachment, and trauma symptoms predicting FR parent behaviours; therefore, a moderation model did not fit the data acquired from this sample. It is possible that this was due to power constraints (i.e., the small sample size), but even doing a separate regression analysis for each hypothesized interaction (increasing power, while simultaneously increasing the chance of a Type 1 Error) yielded no significant interactions.

Research on resiliency identifies effective, supportive parenting and family cohesion as protective factors following childhood maltreatment (Afifi & MacMillan, 2011; Masten, 2001). Conceivably, if mothers were maltreated as children, but had a supportive family environment that helped them to integrate their traumatic experiences, then they would be expected to have resilient outcomes. Unfortunately, childhood maltreatment often takes place within the family context, which would make this resilient path less common. Other resiliency factors, such as genetics (Mrazek & Mrazek, 1987), personality, or important relationships (Collishaw, Pickles, Messer, Rutter, Shearer, & Maughan, 2007) could also contribute to greater integration of traumatic experiences. Regardless of the source of resilience, ability to integrate traumatic experiences theoretically would be expected to moderate an association between maltreatment and FR parenting behaviours. Indeed, the relatively weak associations between childhood maltreatment history and FR parenting behaviours may suggest that there is abundant space for resilience on the path from childhood maltreatment to parenting. With a large enough sample, and more comprehensive measures of childhood maltreatment and trauma integration, this may be detectable in future research.

**Discriminant Validity**

In terms of discriminant validity, trauma symptoms and unresolved attachment uniquely contributed to the prediction of FR parenting behaviours when controlling for maternal sensitivity or stress, anxiety, and depression. This adds validity to my claim that the difficulties leading to FR parent behaviours are integrative in nature, and not just general lack of coping ability and well-being.
Generalizability

The characteristics of the sample are both a strength and a weakness of the current study. In order to participate in the larger longitudinal study, mothers had to be at least twenty years of age, excluding more high-risk, teen-aged mothers. A high-risk (i.e., only mothers under twenty years of age) sample from the same geographical area demonstrated higher proportions of poverty, histories of childhood abuse, and unresolved attachment (Bailey et al., 2007a). If teen-aged mothers were included in the current sample, the greater proportion of childhood maltreatment history and unresolved attachment may have strengthened the current findings. Also, excluding mothers of this age makes the findings only generalizable to adult mothers.

However, only including adult mothers demonstrates that such associations are detectable even in a lower-risk sample. Childhood maltreatment is a common problem (MacMillan et al., 1997; Trocme et al., 2003). Researching these associations in a lower-risk sample allowed investigation of whether the associations found in higher-risk samples held for adult mothers who tend to have more resources. Parenting difficulties, trauma symptoms, and unresolved attachment thought to result from childhood maltreatment are not just problems for young mothers, often with less income, education, and social support (Jaffee, Caspi, Moffitt, Belsky, & Silva, 2001).

Alternative Theoretical Explanation

Testing causal hypotheses through regression analyses is vulnerable to erroneous conclusions if critical, causal variables are not included in the model. For instance, one opposing argument against the mediation models in the current study is that mothers who show FR behaviour are simply modeling their own parents’ FR behaviours. From this social learning perspective, their parents’ behaviour may have created their childhood maltreatment experiences, and could also conceivably cause trauma symptoms and unresolved attachment, although these latter integrative difficulties would not be causally linked to the FR-behaviour. Social learning theory does help explain the multigenerational consequences of childhood maltreatment (Widom, 2000). However, FR parent behaviour is a specific type of parenting that appears to be trauma specific (Hesse & Main, 1999). For instance, in the current study FR parent behaviour was associated with trauma symptoms (such as dissociation and defensive avoidance), which are better explained by trauma history (Briere et al., 1995) than modelling. In addition, the association between childhood maltreatment and FR parent behaviours was weak, which disputes
the assertion that both are caused by the mothers’ parents’ FR behaviours. Unfortunately, a multigenerational study of FR behaviours was not feasible. Therefore any causal speculations should be made with caution until this possible confound can be addressed in future research.

**Future Research**

**Other maternal attachment orientations.** The current study focused on unresolved attachment because of its relationship to unresolved trauma; however, studying how other attachment orientations relate to history of childhood maltreatment and parenting outcomes is a promising direction for future research. One interesting finding in the literature is that unresolved mothers with a secondary autonomous (secure) classification on the AAI actually have been found to show less FR behaviours than mothers who are not unresolved (Schuengel, Bakermans-Kranenburg, & Van Ijzendoorn, 1999), and less FR behaviours than unresolved-insecure mothers (Jacobvitz et al., 2006). If mothers who have unresolved loss or trauma still find a way to have a generally coherent and balanced perspective with regard to attachment, perhaps they have the ability to be mindful enough of their own behaviour, and child’s experience, to avoid FR behaviours. Indeed, secure attachment has theoretically been linked to open acceptance of a range of emotional states (Cassidy, 1994).

**The next generational step.** The current study tested the hypothesized relationship between childhood trauma, integrative difficulties, and parental behaviours. The next generational step would look at the parent-child attachment relationship. If FR behaviours affect the relationship between trauma history/trauma integration, and attachment difficulties, FR behaviours can be thought of as one vehicle through which a parent’s history of childhood trauma (and subsequent integrative difficulties) is transmuted into attachment difficulties with his/her child.

The current study provides supporting evidence that underlying integrative difficulties are an intermediate variable influencing the link between childhood maltreatment, and parenting difficulties. To the extent that they continue to influence psychological and interpersonal functioning in adulthood, integrative difficulties also theoretically would be expected to hinder a parent’s ability to develop an organized and secure attachment relationship with her child. In both high and low-risk samples, mothers classified as unresolved are more likely to develop disorganized attachment relationships with their children, relationships in which infants evidence a breakdown in attachment strategy and are at risk for behaviour problems in later childhood (Bailey, Moran, Pederson, & Bento, 2007b; Lyons-Ruth & Jacobvitz, 1999; Schuengel, van
Ijzendoor, Bakermans-Kranenburg & Blom, 1998; van IJzendoorn et al., 1999). At least nineteen studies have confirmed the relationship between parental unresolved status and disorganized attachment relationship with the child (Hesse & Main, 2006).

Lyons-Ruth and colleagues’ (2005) research reinforces the notion that unintegrated parental state of mind is one route through which infants can develop disorganized attachment. The unavailability of a parent through his/her own hostile-helpless (similar to unresolved) state of mind can be conceptualized as relational trauma. This can lead to disorganized attachment by making the child feel unsafe and/or being unavailable to comfort the child and help the child work through traumatic experiences of the child’s own (which may be more likely to happen in such family situations; Lyons-Ruth et al., 2005). Lyons-Ruth and colleagues have theorized that the failure of hostile-helpless attachment figures to protect and help their children integrate traumatic experiences leads young children to experience more traumatic symptoms, such as dissociation, than he/she would have if the parent had shown more responsive caregiving.

In this model, integrative difficulties can be thought of as a variable that mediates the relationship between parental trauma, and later attachment difficulties with the child; the trauma history influences the parent-child relationship through integrative difficulties and the resulting FR parent behaviours. In future research, testing to see if maternal history of childhood maltreatment affects the parent-child attachment relationship through integrative difficulties and FR parent behaviours would provide important information regarding this line of research in general: What are the consequences of this developmental sequence for the parent and child in their current relationship?

**Clinical Implications**

Childhood maltreatment subtypes were analyzed separately at several points in this study because they are associated with different parenting outcomes (Ballen et al., 2006). Different types of childhood maltreatment were associated with different outcomes in the current study; however, when controlling for the other types of maltreatment, all indirect effects between childhood maltreatment and FR through integrative difficulties became non-significant. This is believed to be due to power constraints (i.e., small sample size) and, more importantly, multicollinearity. Different types of childhood maltreatment frequently co-occur, and once other types of maltreatment are controlled, the ability for a single type of childhood maltreatment to account for unique outcomes is reduced (Briere, 1992; Briere & Runtz, 1990). Conceptually it is
difficult to imagine certain types of maltreatment without the effects of other types of maltreatment (e.g., is there such a situation as physical or sexual abuse without an emotional component?). So, while it is important to look at the different effects of different types of childhood maltreatment, researchers and clinicians should also be cognizant of the fact that types of childhood maltreatment are highly interrelated, and it is difficult to disentangle the effects. In fact it may even be the broader maltreating and invalidating context that is more harmful to physically and sexually abused children than the abuse experiences per se (e.g., Bailey et al., 2012; DeOliveira et al., 2004). A broad approach to assessment and treatment that covers several possible maltreatment experiences and their sequelae is warranted.

This study also contributes to a body of research that demonstrates a difference between self-report and behavioural measures (Westen, 1999), particularly in regards to parenting (e.g., MetsÄapelto & Pulkkinen, 2005; Morsbach & Prinz, 2006). Also, when individuals are likely to have greater integrative difficulties and self-perception biases, the disparity between self-report and behaviour would be expected to be greater (Bailey et al., 2007a). In the current study, the relationships between self-reported symptoms and behavioural and discourse observations were not as strong as expected. For researchers and clinicians, this speaks to the importance of assessing trauma-related variables, and parenting behaviour, through multiple methods in order to get a fuller picture of the situation (i.e., not just relying on self-report). It is also important to keep in mind that overt trauma symptoms assessed through self-report, and unresolved attachment assessed through discourse analysis, were both important for predicting FR parent behaviours. A check-list of trauma symptoms is not sufficient for assessing abuse history or outcomes of childhood maltreatment. Overt trauma symptoms may not exist, or clients in the clinic (or participants in the lab) may be unaware of their own symptoms. Therefore, it may be helpful for clinicians to learn how to detect lapses in discourse that may indicate unresolved attachment, and to find other creative ways of assessing maltreatment.

In its focus on parenting outcomes, this research has important theoretical and practical implications, because it contributes to our understanding of the processes involved in perpetuating familial patterns. This study provides preliminary evidence that mothers, and by extension, parents, must resolve certain attachment relevant traumatic experiences, and work through their trauma symptoms, in order to avoid particular harmful parenting behaviours. In the words of the classical attachment researcher John Bowlby, “If a community values its children it must cherish their
parents (Bowlby, 1951, p. 84).”
References


Trocme, N. M., Toufigny, M., Maclauffin, B., & Fallon, B. (2003). Major findings from the Canadian incidence study of reported child abuse and neglect. *Child Abuse & Neglect,


Appendix A: Parent-child Attachment Relationships

It has long been assumed that infants enact attachment behaviours that are evolutionarily adaptive: Survival depends on maintaining closeness with caregivers (Main, 2000). Attachment theory, beginning in the 1930s with Bowlby, primarily concerned itself with mother-child bonds (Bretherton, 1992). Subsequently, Ainsworth conceptualized the attachment figure as a secure foundation, from which the child can discover his/her environment (Bretherton, 1992). A child’s attachment relationship with a particular caregiver is often assessed by Ainsworth’s Strange Situation, which is a laboratory task in which the parent-child attachment system is activated through a series of separations and reunions (Ainsworth, Blehar, Waters, & Wall, 1978). Adult attachment orientation (applied broadly instead of attachment toward a particular person as in the Strange Situation) is measured using Main’s Adult Attachment Interview in which different discourse styles when talking about attachment-relevant history are thought to indicate attachment representations (AAI; Main & Goldwyn, 1998). The four parent-child attachment relationship classifications are secure, avoidant, ambivalent, and disorganized. The adult attachment orientations (which are analogous to the parent-child attachment relationship classifications respectively) are autonomous, dismissing, preoccupied, and unresolved.

Whereas infants are predisposed to develop an attachment relationship as long as a caregiver is consistently available, the quality of the attachment relationship differs substantially. Three organized (and one disorganized) infant-attachment relationships have been identified and each of these have been associated with certain parental behaviours. Securely attached infants tend to have parents who are sensitive to infant communications and signals, and are quick to comfort in times of distress (Ainsworth et al., 1978). Parents who are classified as Autonomous (secure) on the Adult Attachment Interview (Main & Goldwyn, 1998) have been found to respond more sensitively to their infants’ emotional and physical needs, and this sensitivity in turn has been associated with infant attachment security (Pederson, Gleason, Moran, & Bento, 1998). Infant security is also associated with synchronous interactions, and gentle holding (Main, 2000). It is assumed that with a parenting style that is consistently sensitive and comforting, children will learn to expect such responses from their caregivers. Although sensitive-responsiveness of the caregiver does contribute to the strong association between parents’ attachment representations and their attachment relationships with their children, meta-analyses have revealed that these
associations are relatively modest (Atkinson et al., 2000), suggesting that other mechanisms also may account for attachment transmission from parent to child (see van Ijzendoorn, 1995).

In the absence of rejection a child can learn to convey appropriate dismay when separated from the caregiver, and find comfort and relief when the caregiver returns. Conversely, when parents routinely reject infant attachment behaviours (both verbally and behaviourally), infants tend to show avoidance behaviours toward their caregivers (Ainsworth et al., 1978). Avoidance appears in toddlerhood as lack of visible signs of emotional changes in the Strange Situation – the child does not appear overly distressed when the parent leaves, and does not appear particularly relieved when the parent returns (Main, 2000). Despite this apparent lack of affect in the Strange Situation, avoidant children tend to appear anxious (Ainsworth et al., 1978) or angry at their mothers (Main, 2000) when observed in the home. Theoretically this is taken to mean, by both Ainsworth and Main, that avoidant attachment behaviours in the Strange Situation are a strategy to cope with the anger and anxiety evoked by the stressful Strange Situation (Main, 2000). The child directs his/her attention to toys and other objects in order to avoid paying attention to the stressful situation, and the rejecting parent (Main, 2000).

Avoidant children were more likely than other children to look away from pictures of a mother interacting with a child, and remembered stories in which the mother was responsive to her child less than secure children, showing attachment relevant attention and memory biases (Kirsh & Cassidy, 1997). When a child is accustomed to being rejected by attachment figures, averting his/her attention and memory from attachment-relevant stimuli which might have been distressing in the past becomes a functional anxiety-reducing strategy. Avoidant attachment can be thought of as a psychological defense which becomes apparent even in a simple motor task. Individuals higher in avoidance pushed a lever away from themselves more quickly when primed by the attachment-related word ‘mom’ (Fraley & Marks, 2011). Several empirical studies have shown that children mask their emotions when in the presence of a parent with whom they have an avoidant attachment strategy (Cassidy, 1994). For example, even though infants with avoidant attachment strategies show less distress than infants with secure strategies after a brief separation from the caregiver, both groups of infants show similar elevated heart rates (Spangler & Grossmann, 1993). Avoidant infants also showed elevated cortisol levels compared to secure infants. Avoidant attachment can be thought of as an emotion regulation strategy that minimizes negative emotions to serve two functions; helping the parent to maintain his/her own attachment-
representation if the parent is also avoidant, and to minimize the chances of rejection from the parent as a result of the child’s emotional expression (Cassidy, 1994). By minimizing the expression of his/her own emotions, the avoidant child communicates to the parent that the child will not demand care, thereby maintaining an attachment relationship that has been dismissive thus far. In adulthood an avoidant attachment strategy can appear as dismissiveness of others, dissociation, and dependence on self-regulation (Silverman, 2011).

Another form of insecure attachment is ambivalence, characterized by children’s display of intense negative emotion upon separation followed by a lack of comfort upon reunion. Resistant/ambivalent attachment is the least understood organized attachment strategy, largely because it is less prevalent than the other two forms of organized attachment; however, the configuration found repeatedly in the research is characterized by over-dependence, preoccupation with and ambivalence toward attachment figures (Cassidy & Berlin, 1994). The child’s attention is focused strongly on the parent, keeping the child from exploring his/her environment (Main, 2000). This behavioural pattern is thought to arise when parents are insensitive to infant signals and unpredictable with their responses (Ainsworth et al., 1978). Parents are observed to hold the infant clumsily, and have inharmonious interactions with the child (Main, 2000). When a parent is unavailable, or inconsistently available, the strong emotional expression typical of ambivalent attachment relationships can be understood as a strong bid for attention that has thus far been difficult to elicit (Cassidy, 1994). Parents of ambivalent infants might also fail to teach them how to soothe emotions (Ainsworth et al., 1978) thereby maintaining the relationship pattern (Cassidy, 1994).

Children may selectively attend to more fearful stimuli in order to stimulate the intense emotionality, and indeed several studies show that ambivalent children are more fearful (Cassidy, 1994). Consistent with this research, mothers in ambivalent relationships with their children rated their children as more disposed to distress when compared to mother-ratings of children in secure or avoidant relationships (Moran & Pederson, 1998). Mothers in ambivalent relationships with their children reported their children as sources of parenting stress, especially in the domains of child-reactivity and flexibility, and child negative mood.

Whereas secure, avoidant, and ambivalent patterns constitute organized (and relatively functional) attachment strategies, disorganized attachment is characterized by a breakdown in the infant’s strategy for using their caregiver to regulate distress. Disorganized behaviour can be
observed as incongruous behaviour, extended freezing, misallocated or repetitive behaviours, and/or trepidation related to the parent (Main & Solomon, 1990). Although behaviourally dissimilar, these behaviours collectively are thought to indicate a lack, or failure, of coping strategy when faced with attachment-related stressors (Hesse & Main, 2000). When a parent is insensitive to his/her child, and is either rejecting or inconsistent, the child can still often form organized, albeit insecure, attachment behaviours (i.e. avoidant or ambivalent). However, maltreatment or more subtle frightening caregiver behaviours can lead to disorganized/disoriented attachment behaviour (Hesse & Main, 2000).

Physiological studies provide evidence that disorganized behaviours indicate a breakdown of attachment strategy. Infants in disorganized attachment relationships showed elevated cortisol levels, and highest heart-rate after a brief separation from the caregiver when compared to infants with organized attachment strategies (Spangler & Grossmann, 1993). This is thought to indicate sympathetic nervous system arousal because the separation feels so intense that an attachment strategy cannot be initiated, and disorganized behaviour results.
Appendix B: Information Letter, and Consent Form

Exploring the Nature and Origins of Parent Child Relationships

Dear Parent

We are conducting a study with new mothers and their firstborn babies to learn more about how babies develop social and emotional relationships with their mothers. We want to understand how a mother’s past and present experiences influence the growing relationship with her baby. We will be asking parents about many different types of experiences which may or may not apply. You are always free to not answer any questions should you not feel comfortable.

Our study will last 2 years and will involve 6 visits. Some of the visits will be in your home; others will be at the university. We are interested in your opinions about why your baby behaves as he/she does in different situations with you. We are also interested in the demands and rewards of parenting.

If you agree to participate in the study:

- **Visit One:** The first visit will be about two hours in your home when your baby is about 3 months old. At that time we will interview you, asking questions about your childhood experiences, your early relationship with your parents, any experiences of major separation, loss, or trauma, and your thoughts about how these experiences have affected your role as a mother. Some mothers may find aspects of the interview sad or upsetting because some of the questions are about sad or stressful events. Should you feel uncomfortable with any of the questions, you will not have to answer them. The interview will be audiotaped and later transcribed. We would also like to videotape you and your baby playing. After this we have a questionnaire about parenting experiences for you to fill out.

- **Visit Two:** When your baby is 3-4 months of age, (maximum 2 hours in total): We will visit you and your baby when your baby is awake. For about 20 minutes, we will ask you to play with your baby. The play session will be videotaped. After the play session we will have you watch the video and ask you about what you think your baby is feeling. Afterwards, we will ask you to fill out questionnaires about your experiences as a parent,
any stresses associated with being a mother and the people you turn to for help and support. We would also like to ask you specific questions about your parenting experience so far, what your baby can do and who is helpful to you. This interview will be audiotaped.

- Visit Three: When your baby is between 9 and 10 months old, (maximum 2 hours): We will again visit you at home. We would like to observe how your baby plays with you. We will arrange this visit to take place at a feeding time so that we will be able to see how your baby communicates his/her wants. Certain parts of this visit will be videotaped. We are also interested in seeing how different people tell stories about relationships. You will be given the title of the story and then lists of words to help you make up a story. We will ask you about your early experiences in other relationships. This portion of the visit will be audio taped. Once again we have questionnaires for you to complete about your experiences as a parent.

- Visit Four: When your baby is 13 months old, (about 1 hour): You will visit us at the Child Development Centre at UWO. For this visit, we are interested in how your baby plays in new surroundings both when you are with your baby and when you are away. We will ask you to leave your baby for two brief periods (no more than 3 minutes each) during this part of the procedure. If your baby becomes upset, we will send you back in immediately. This visit will be videotaped. Parking costs at the university will be covered, or we can provide transportation for you and your baby.

- Visit Five: When your baby is about 21 months of age, (maximum 2 hours): We will visit you at home. We will give the baby some activities to do with the visitor to observe how your baby interacts with strangers and observe how he/she plays with you. We will interview you about your experiences as a mother (the interview will take about one hour, and will be audiotaped). Certain parts of this visit will be videotaped. We will also ask you to fill out questionnaires about your experiences.

- Visit Six: When your baby is about 24 to 30 months of age, (maximum 90 minutes): You will visit us at the Child Development Centre at UWO. We will observe how your toddler interacts and plays in different surroundings and how he/she reacts to an interesting but unusual remote-controlled toy. This visit will be videotaped. We will ask you about your experiences with your toddler since we last saw you and ask you to fill out some questionnaires.

All information collected from you for the study will be kept confidential. All written, audiotaped, and videotaped records and questionnaires will be assigned numbers to maintain confidentiality. Audiotapes are erased after transcription. Any identifying information such as names and place of birth will be changed to maintain confidentiality. Only those directly involved in the study will see the transcripts and videotapes unless you agree that fragments can be used for professional training. The family names will only be available to direct members of
the research group. Absolute confidentiality cannot be guaranteed as we may have to disclose certain information as required by law according to provisions under the Child and Family Services Act. This includes any suspicion that a child under the age of 16 years is or has been abused or if you are in imminent danger of hurting yourself or another person. If the results of the study are published, your name will not be used and no information that discloses your identity will be released or published.

Participation in this study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at any time. Even if specific questionnaires request that you answer every question you do not have to do so. There are no known risks associated with any of the procedures. This study will not result in any direct benefit to you or your baby but may help us to further understand factors that may have an impact on the social and emotional development of infants and how relationships develop. In appreciation for your assistance with the study you will receive $25.00 for each visit or $150.00 over the course of the study.

If you wish, you will have the opportunity to receive the results of the study. You may receive a copy of the videotape of the home visits if you wish. Throughout the study we will ask you if you have any questions about any of the procedures. We would also appreciate any ideas or advice about your experience as a participant. We hope that participating in this study will be an interesting time for you and your baby. If at any time you have questions or concerns, please do not hesitate to let the researcher know or you can contact the principal investigators or research coordinator listed below:

Dr. Greg Moran
Department of Psychology
University of Western Ontario
661-2111 extension 83109.

Dr. David Pederson
Department of Psychology
University of Western Ontario
661-2111 extension 84672

Sandi Bento
Research Coordinator
Child Development Centre
661-2111 extension 84660

Dr. Heidi Bailey
Department of Psychology
MacKinnon Building
University of Guelph

If you have questions about the conduct of this study or your rights as a research subject you may contact:

The Director
Office of Research Ethics
The University of Western Ontario
519-661-3036
Or email at: ethics@uwo.ca
Exploring the Nature and Origins of Parent Child Relationships

I have read the Letter of Information, have had the nature of the study explained to me and I agree to participate. All questions have been answered to my satisfaction

________________________________________
Parent’s Name (Please Print)

________________________________________
Parent’s Signature

________________________________________
Name of Person Obtaining Informed Consent

________________________________________
Signature of Person Obtaining Informed Consent

Date