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**Triadic parent-child play and toddlers' socio-emotional development: The role of
coparenting dynamics**

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Doctor of Philosophy in Psychology 2021

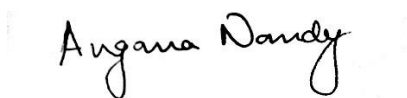
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Angana Nandy

31st March 2021

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Summary

Drawing on the family systems perspectives (Minuchin, 1985; 1988) this thesis aimed to make unique contributions to the field of developmental psychology by examining the role of the coparenting relationship in toddlers' social and emotional development. Given that family processes do not occur in isolation, examining families as an organized whole is important for strengthening our understanding of the developing child. The current research used observational methods for examining naturalistic parent-toddler interactions during play activities in dyadic (one parent and child) and triadic (both parents and child) contexts. Parent-child play has consistently emerged as a key behaviour that facilitates toddlers' emerging socio-emotional competencies. However, there is little understanding of the role of the interactional context in mothers' and fathers' play behaviours and more importantly the role of observed coparenting in triadic interactions. This thesis, therefore, aimed to (i) advance understanding of the coparenting construct and (ii) illustrate the importance of family-level interactions for toddlers' socio-emotional development through an extensive literature review and a series of empirical investigations.

Chapter 1 discusses the defining properties, models, measurement methods and factors associated with coparenting dynamics that also determine its stability over time. Chapter 2, at first, highlights the importance of focusing on the developmental period of toddlerhood. Following this, the chapter discusses the important role of parents in parent-toddler play and exemplified the need to adopt a systemic approach for examining parental play behaviours in relation to toddlers' socio-emotional development. Chapter 3 outlines the methodology of the empirical studies in detail.

In Chapter 4, the empirical studies are presented. Study 1 examined the role of child and parent characteristics, couple's dyadic adjustment and parental functioning in coparenting dynamics. Findings indicated that (i) less supportive coparenting dynamics were evident in families with older parents and (ii) more supportive coparenting dynamics in families were evident in families where fathers reported a higher parental sense of competence. Given that the child is the focus of the coparenting relationship, Study 2 examined the role of toddler temperament in the stability of coparenting dynamics from toddlerhood to the preschool years. Results showed that supportive coparenting remained stable when toddlers were reported as having less difficult and more positive temperamental traits.

Study 3 (part 1) examined contextual and parent gender based variations in parents' play behaviours. Results showed that both parents engaged in significantly less toy play (toy touch/manipulation) and verbal facilitation (using only language to guide play) in the triadic context in comparison with the dyadic context. Additionally, Study 3 (part 2) showed that maternal toy play was significantly positively associated with toddlers' socio-emotional development but only when this was embedded in a supportive coparenting context. Study 4 (part 1) examined contextual and parent gender based variations in the communicative functions of parents' child-directed speech (CDS). Results showed that both parents used significantly more facilitative speech (questions) in the triadic context and provided more gentle guidance (praise and encouragement) in the dyadic context. Fathers used more directives commands and prohibitions) than mothers but parents' referential CDS (labelling and describing speech) was not affected by either context or parental gender. Furthermore, Study 4 (part 2) showed that coparenting did not play a

significant role in these communicative functions of parental CDS. Results from this study also showed positive associations between higher verbosity in toddlers whose mothers asked more questions in the triadic context.

Study 5 examined direct associations between coparenting dynamics and toddlers' adaptive functioning and results showed that toddlers were reported as having poorer adaptive functioning in families with higher levels of coparenting undermining. Chapter 5 discusses the implications of the findings, strengths and limitations of the study and directions for future research. In summary, this thesis advances understanding of the coparenting construct and the role of coparenting dynamics in triadic-level family interactions and toddlers' socio-emotional development.

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List of abbreviations

DAS: Dyadic Adjustment Scale

PSI: Parenting Stress Index

PSOC: Parental Sense of Competence

ECBQ: Early Childhood Behaviour Questionnaire

BSID-III: Bayley Scales of Infant Development, 3rd Edition

CRS: Coparenting Relationship Scale

CDS: Child-Directed Speech

CHAT: Codes for the Analysis of Human Language

CLAN: Computerised Language Analysis software

List of publications

1. Nandy, A., Nixon, E., & Quigley, J. (2020). Parental toy play and toddlers' socio-emotional development: The moderating role of coparenting dynamics. *Infant Behavior and Development*, 60, 101465. doi:10.1016/j.infbeh.2020.101465
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(Study 4, Part 1)
3. Nandy, A., Nixon, E., & Quigley, J. (2021). Observed and reported coparenting and toddlers' adaptive functioning. *Infant and Child Development*. doi:10.1002/icd.2226
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(Study 5)

Chapter 1

The Coparenting Construct

Research on child development has focused on and demonstrated the importance of the parent-child dyad in relation to children's developmental trajectories (Ainsworth, Blehar, Waters, & Wall, 1978; Cabrera, Shannon, & Tamis-LeMonda, 2007; Cabrera & Tamis-LeMonda, 2013; Jacobs & Moss, 1976; Kochanska, Aksan, Prisco, & Adams, 2008; Lamb, 2010; Lewis & Feiring, 1989). A gradual shift from an exclusive focus on the mother-child dyad to include the father-child relationship showed that both parents play significant roles in child development. However, understanding an individual's development requires an understanding of the network of family relationships that goes beyond dyadic parent-child relations.

Evidence indicates that children spend more time in multipartite contexts as compared to dyadic ones (Belsky, Putnam, & Crnic, 1996; Dunn, 1991; McHale 1997). Favez, Frascarolo, and Tissot (2017) state that there is a true emergent effect when a family interacts as a triad. Triadic parent-child interactions constitute unique relational contexts that offer opportunities for development that are distinct from those offered by dyadic or collective forms of interaction (Molinari, Cigali, & Corsano, 2019).

The driving force in research on triadic interactions is the Family Systems Theory which propagated a shift from studying pairs of individuals to an examination of triads (interactions involving three persons). The family is viewed as a system which is made up of different parts or subsystems that make up the larger whole. This hierarchical organization of the family system in which each family sub-system (marital, parental and sibling) is dynamic and mutually interdependent (Minuchin, 1985; Stroud, Durbin, Wilson

& Mendelsohn, 2011) is important for understanding the structure of the entire system. One such important subsystem is the coparenting unit. With the systems theory proposition that parent-child dyads do not fully represent the child's reality, researchers began to take a closer look into this central sub-system of family functioning. The key idea is that a comprehensive understanding of the diverse and complex socialization environment of young children can be developed by examining children's interactions and relationship quality with one parent in the context of their interactions or relationship with the other parent. This in turn brings to the fore the dynamics that exist between parents that can potentially modify the nature of triadic parent-child interactions.

Defining coparenting

Viewed as the executive subsystem (Minuchin, 1974), coparenting refers to the coordination that exists between two parents who are raising their children together (Feinberg, 2003; McHale et al., 2004). Bonach (2005) further indicated that a strong coparenting partnership could be considered as an enduring, collaborative and mutually supportive relationship involving actively engaged parents who are fundamentally focused on raising their children. Although the coparenting relationship has been evidenced as being integrally linked with other aspects of the couple relationship such as the marital subsystem (Abidin & Brunner, 1995; Li & Liu, 2020; Maccoby, Depner, & Mnookin, 1990; Margolin, Gordis, & John, 2001), early investigations into this family system demonstrated that the coparental system exerted an independent influence on family relationships (Gable, Belsky, & Crnic, 1992). The importance of investigating the two subsystems separately is reflected in empirical evidence which shows coparenting as a stronger predictor of child

developmental outcomes than the couples' marital relationship (Bearss & Eyberg, 1998; Camara & Resnik, 1989; Frosch, Mangelsdorf, & McHale, 2000).

Van Egerens and Hawkins (2004) asked three pertinent questions that aided in the precise characterization of the coparenting construct: (i) who can be coparents; (ii) when does coparenting begin, and (iii) where does coparenting occur? They proposed an alternate definition to coparenting other than the one that considered this relationship to exist solely between two individuals who were married. They defined the coparenting relationship as *“when at least two individuals are expected by mutual agreement or societal norms to have conjoint responsibility for a particular child’s well-being”* (Van Egerens, 2004, p.166). This definition provides a broader context within which coparenting can be studied and has encouraged researchers to investigate the intricacies of this relationship further in couples who are unmarried, divorced or involved in same-sex relationships or even beyond romantic couples (e.g. grandparent and parent).

In relation to the question ‘when does coparenting begin’ Van Egeren and Hawkins (2004) proposed that the coparenting relationship begins to develop before the birth of a child in the family. Previous research has shown that expectant parents develop mental representations of themselves as parents and presumably as coparents as well (Shai, 2018; Shai & Bergner, 2021; Van Egeren 2003). As such, when couples begin discussions around issues such as division of child-care related duties, child-rearing philosophies and future goals they have already begun the coparenting process. They argued that such discussions can be seen as good predictors of subsequent coparenting which emerges as an explicit construct with the birth of the child in the family.

Concerning the question ‘where does coparenting occur’ the commonly held view is that coparenting occurs only in the presence of the child. However, the authors reported that this may not always be the case. McHale (1997) for instance found that a parent can promote or criticize the other parent to the child, whether present or absent, through, for example, indirect comments, triangulation and inclusion/exclusion.

McHale et al. (2002) proposed that for coparenting units to function effectively, parental figures have to collaborate in ways that signify to the child that the family is a safe and secure base in which parents are supportive of one another and are responsible for defining a predictable set of rules and standards. However, this does not have to mean that both parents who are involved in caregiving engage in similar styles of parenting or spend equal amounts of time with their children. The authors proposed some fundamental elements of effective coparenting beginning with an agreement between the two partners on the basic foundations of childcare and effective strategies for acculturation/socialisation of children. Second, for coparenting to be effective and successful, adults involved in the rearing of children need to experience support from each other for the contributions they make to the child and to the family.

Third, coparenting partners should be able to trust each other with the responsibility that they will carry out the agreed-on acculturation strategies in ways that children find logically consistent. Finally, coparenting partners should abide by the agreed-on rules while interacting with their children both in the presence and absence of the other partner. However, in order to develop a more comprehensive understanding of the coparenting relationship, an in-depth examination of coparenting domains is warranted.

A Multidimensional view of coparenting

Based on prior research in the area of coparenting, several different models of this family subsystem have been proposed. Most of these models have proposed multidimensional views of coparenting. The models share similar features in terms of the key aspects that define a coparenting alliance. For instance, Margolin et al. (2001) outlined three broad domains of the coparenting construct, namely: (i) coparental conflict; (ii) cooperation, and (iii) triangulation. Coparenting conflict is reflected by the extent to which parents disagree with each other on issues pertaining to childrearing. Coparental cooperation is reflected by the degree to which parents share a similar sense of responsibility for their child and respect each other's parenting effort and choices. Triangulation refers to the coalitions that parents form with their child to undermine their partners' parenting efforts. Similarly, Belsky et al. (1996) and McHale (1995) distinguished between supportive and undermining coparenting dynamics which have frequently also been labelled as cooperative and competitive coparenting.

Drawing from these models, Feinberg (2003) proposed a multidimensional framework of coparenting with the aim of informing further research in this area and informing practice and intervention plans targeted at improving family functioning. This framework encompassed four overlapping domains, namely: (i) supportive and undermining coparenting (cooperation, competition and triangulation) behaviours; (ii) agreement and disagreement on childcare related issues; (iii) division of labour, and; (iv) joint management of family interactions (interparental conflict, coalition and balance between parents in interactions). Although acknowledging that there may be considerable overlap between the different components in this model, Feinberg maintained that the

conceptual distinctions serve important functions in intervention planning. For example, intervention plans targeted at improving the coparenting relationship may not necessarily decrease coparental disagreement but may be effective in equipping parents with strategies that allow them to resolve those disagreements in a supportive manner. Evidently, there is considerable overlap between these models. Given that the majority of recent investigations into the coparenting construct are supported by, and embedded within the tenets of these models, the purpose of the following overview, therefore, is to provide a comprehensive understanding of the coparenting construct as it is investigated in contemporary research.

Supportive and undermining coparenting

The majority of research on coparenting in recent years has focused on the supportive and undermining aspects of the coparenting relationship. This domain of coparenting refers to the level of support that exists between parents when involved in caregiving related duties and to the practice of affirming and acknowledging the competency of the other partner as a parent. It involves respecting the parental decisions and contributions made by the other partner in childrearing. During triadic parent-child interactions, supportive coparenting can reflect the degree to which parents cooperate with and assist each other in teaching or playing with the child. Additionally, it can also reflect the extent to which each parent exhibits warmth towards the other in the presence of the child and pleasure in the other parent's relationship with the child. Undermining coparenting, on the other hand, can reflect the degree to which parents compete for the child's attention, appear distant or cold towards each other or exhibit displeasure in the other parents' relationship or interactions with the child. Westerman and Massoff (2001)

state that parents can either exhibit overt coparental undermining behaviours (e.g. name-calling) or covert undermining behaviours (e.g. interrupting one's partner).

Although supportive and undermining coparenting behaviours have often been reported as negatively associated, they are proposed as distinct dimensions of coparenting. For instance, evidence indicates that parents can simultaneously exhibit supportive and undermining coparenting dynamics in the same interaction (Margolin et al., 2001). In families where one parent assumes primary responsibility for caregiving and the other parent remains uninvolved, both competitive and cooperative coparenting behaviours can appear to be low (Umemura, Christopher, Mann, Jacobvitz, & Hazen, 2015). Conversely, in families where both parents are actively involved in the caregiving process both competitive and cooperative coparenting behaviours can appear to be moderately high such that at times parents support each other and at other times they compete.

There are several ways competitive coparenting can be evident in parent-child interactions: (1) when one or both parents vie for the child's attention; (2) when one parent undermines or disagrees with the other parent in the presence of the child, and; (3) when one parent attempts to create an alliance with the child against the other parent (Murphy, Jacobvitz, & Hazen, 2016). The third way relates to a key feature of competitive coparenting. Commonly referred to as 'triangulation', this process occurs when children become entangled in interparental conflicts due to the blurring of intergenerational boundaries. Frequently treated as allies within this conflict, children may be used for verbally attacking the other parent or coerced into taking sides. Such patterns have been found to have detrimental effects on children. For instance, Murphy et al. (2016) found

longitudinal positive associations between competitive coparenting exhibited in toddlerhood and children's externalising behaviours at 7 years of age.

Similarly, such competitive coparenting has been found to be directly associated with higher levels of aggression and internalising behaviours among both pre-school (McHale & Rassmussen, 1998) and school-aged children (Jones, Shaffer, Forehand, Brody, & Armistead (2003). Umemura et al. (2015) examined direct associations between competitive and cooperative coparental behaviours in toddlerhood and children's symptoms of psychological problems at age 7 *via* observations of triadic interactions. The study found that independent of cooperative coparenting and each parents' individual harsh parenting, competitive coparenting predicted children's symptoms of both attention-deficit hyperactivity disorder and oppositional defiant disorder.

It is suggested that competitive coparental behaviours create internal conflicts within children forcing them to take sides in deciding who to obey (Umemura et al., 2015). Competitive styles of interaction between parents might be internalised by young children who then engage in similar patterns of interaction with their peers and in school (Kochanska, Barry, Aksan & Boldt, 2008). In addition, parent-child relationships can suffer when children begin to question the helpfulness of their parents when they engage in competitive patterns of interaction (Cummings, Schermerhorn, Davies, Goeke-Morey & Cummings, 2006).

Overall, research consistently indicates that supportive and undermining coparental dynamics are linked with children's developmental outcomes. Greater supportiveness within the coparenting system has been consistently linked with higher quality parent-child relationships and child outcomes (Brown, Schoppe-Sullivan, Mangelsdorf, & Neff, 2015;

Talbot & McHale, 2003). Greater coparenting undermining, on the other hand, has been found to have detrimental effects on children's development (Belsky et al., 1996; Karreman, van Tuijl, van Aken, & Dekovic, 2008).

Coparenting conflict

This relates to the degree to which parents agree, disagree and argue on childrearing practices and parenting strategies (Margolin et al., 2001; McHale, 1995). Disagreements between partners over child-rearing practices can lead to the increased undermining of one another's parenting practices and overt conflict. Feinberg indicated that disagreement over child-rearing practices may not be problematic in itself as parents who generally follow the strategy of agreeing to disagree may continue to enjoy high levels of coparenting support and coordination and may not be vulnerable to the detrimental effects of childrearing disagreement. Similarly, Van Egeren and Hawkins (2004) suggest that the best predictor of coparenting quality is of course the joint solution that both partners devise to overcome these differences.

However, persisting disagreements and conflicts arising from them between parents may have adverse effects on children's development. For instance, child-rearing disagreements were found to be strongly associated with child behavioural problems (Jouriles, Bourg, & Farris, 1991; Lindsey & Caldera, 2005). Teubert and Pinquart (2010), in their meta-analysis examining the relationship between coparenting and child adjustment, found coparenting disagreements to be strongly associated with internalizing and externalising behavioural problems in children. Research indicates that children in families with high levels of coparenting conflict show greater socio-emotional and behavioural difficulties (Jouriles et al., 1991; Katz & Low, 2004; Rutter, 1994). Such

associations were mainly reported in studies that examined interrelations between interparental conflict, coparenting hostility and child adjustment. For instance, Katz and Low (2004) examined the ways in which interparental or marital conflict and coparenting dynamics interacted in affecting children's adjustment. They discussed the possibility that despite being interrelated, marital hostility and coparenting processes exerted their independent influences on preschool children's psychological adjustment.

Findings from this study indicated that couples who experienced interparental or marital conflicts engaged in more conflictual and less supportive coparenting behaviours. Within the context of high interparental conflict, parents were also less likely to engage in family-level interactions that were fun, cohesive or flexible. Such withdrawn and disengaged patterns of coparental engagement were in turn associated with increased risk in children for anxious and depressive symptoms. Parents' inability to work cohesively (observed during a free-play interaction with children in the study) signified a lack of togetherness which was suggested as a possible reason for increased levels of anxiety and depression in the pre-schoolers.

Zemp, Johnson, and Bodemann (2018) provided some support for this "spillover" (Erel & Burman, 1995) effect of emotions from one subsystem to another. Results from their examination of 'between-family' interrelations among interparental conflict, coparenting conflict and child adjustment showed coparenting as a process through which family spillover evolved. Coparenting conflict was found to be significantly associated with interparental verbal aggression and child problems. These results were in accord with previous findings in this line of investigation (Feinberg, Kan, & Hetherington, 2007). However, findings from their 'within-family' analyses lent support to the "compensatory"

hypothesis wherein high levels of coparenting conflict within a given family predicted fewer externalising problems in children. The authors suggest that such findings could indicate that within a highly conflictual coparenting context, parents may engage in compensatory parenting behaviours (e.g. devote more attention to the child/parent-child relationship) which, in turn, might be linked with fewer externalising problems in children.

Coparenting balance

This domain of cooperating refers to the level of balance that parents exhibit while interacting with their children. While it is common for mothers and fathers to engage with their children in different ways, the model proposes that interactional balance is more concerned with the amount of time each parent interacts with the child in triadic situations (when all three participants are present). Studies that have looked at the proportions of engagement time in dyadic situations have not managed to correlate it with interactional balance in triadic situations (McHale, Kuersten-Hogan, & Lauretti, 2001). This was attributed to the lack of continuity across contexts to systemic shifts in interactional processes. While mothers appear to be more secure and engaged, fathers appear less engaged in triadic compared to dyadic contexts and such variations have been evidenced as being vital for children's developing competencies (Goldberg, Clarke-stewart, Rice, & Dellis, 2002; Stoneman & Brody, 1981).

Division of labour

While the division of labour can simply refer to the distribution of daily household duties between the two partners (Van Egeren & Hawkins, 2004), a better predictor of family functioning is whether couples are satisfied with their negotiations and share of the childcare-related tasks (Hackel & Ruble, 1992; MacDermid, Huston, & Mchale, 1990).

Research indicates that disputes relating to the division of labour can have negative implications for family functioning. Maternal perceptions of the division of labour, in particular, are considered to be crucial because although paternal involvement in childcare has increased, mothers even in dual-earner families continue to perform the majority of tasks related to child-care (Kotila, Schoppe-Sullivan, Kamp-Dush, 2013; Yavorsky, Dush, & Schoppe-Sullivan, 2015).

Another aspect relating to the division of labour is the amount of flexibility and rigidity parents permit while negotiating childrearing related tasks. While some couples set rigid expectations and boundaries about who is responsible for which task, others are more flexible in their approach and switch roles around as and when situations change. However, some studies have reported that parents tend to favour a particular approach depending on the circumstance as well as the dynamics that exist between them in their parenting roles. For instance, during stressful times such as transition to parenthood or transition to school a flexible approach has been found to be more suitable for meeting needs that a structured approach would otherwise not be able to fulfil (Guelzow, Bird, & Koball, 1991). A structured approach, however, may be more useful for parents who generally find it difficult to negotiate tasks and responsibilities and engage each other with reflexive hostility (Feinberg, 2003).

Overall, multidimensional models of coparenting have facilitated a comprehensive conceptualization of the coparenting construct and highlight the central role of coparenting in parenting and child development.

Measurement of coparenting

With the growing interest in coparenting, researchers have developed several measures for examining this relationship. Even with this growing interest, there is a general lack of consensus on how to best measure and evaluate the coparenting relationship. Coparenting has been researched using a variety of measures ranging from observational methods, parental self-reports, child reports as well as various other domain-specific measures. However, the possibility of examining coparenting using a wide range of measures inevitably means that there are different ways of understanding the fundamental concept.

Observational measures allow for an in-depth understanding of family interactions as through such methods one can assess how parents manifest and navigate the intricacies of their coparental relationship in real-time in the presence of their child. Such observations allow us to directly examine the dynamic facets of coparenting behaviours of interest and thus have high face validity. Cusi et al. (2020) suggested that observational methods can function as a setting in which triadic interactions can be evaluated by experts. Moreover, the authors indicate that observational instruments for capturing coparenting dynamics have been particularly well validated for use in intact families. A possible limitation of this method is that parents can behave differently when they are being observed. However, given that most observational studies incorporate play-based activities for examining coparenting dynamics, particularly in families with young children, coparenting and parenting behaviours may not be overly susceptible to observer effects.

Self-report measures of coparenting allow us to access parents' beliefs, thoughts and feelings about the integrity of their coparental relationship, specifically, the extent to

which both mothers and fathers feel supported and validated in their role as parents. Thus, self-reports give researchers access to a broad range of coparenting beliefs that occur in a variety of interactional contexts and over a longer period. However, as observed within the literature on the construct of parenting, self-reports may be influenced by factors such as social desirability leading to the increased likelihood of distortions in self-report scores (Hendriks, Van der Giessen, Stams, & Overbeek, 2018). Sole reliance on self-reports of coparenting may not be ideal as evidence indicates that parents are limited in their ability to objectively evaluate their own behaviours, particularly their negative behaviours (Ahrons, 1981).

Given that coparenting is an evolving concept with little consensus relating to a unified perception of this family subsystem, there exists a large degree of heterogeneity in the available measures and instruments (Cusi et al., 2020). In order to promote future study in this area, it is important to aim for greater consensus on the construct of coparenting.

Predictors of coparenting

So far, a great deal of research attention has been devoted to investigating and explaining the factors that influence individual parenting behaviours with very little importance given to the coparenting relationship. Given that a growing body of research indicates that coparenting has the potential to impact overall family functioning and has been consistently reported to explain variance in children's developmental competencies (Katz & Low, 2004; Kwon, Jeon, & Elicker, 2013; Lam, Tam, Chung, & Li, 2018; Mack & Gee, 2018; Mangelsdorf, Laxman, & Jessee, 2011; McHale, Kuersten-Hogan, Lauretti, & Rasmussen, 2000), it is important to determine the factors that influence this relationship.

The following discussion on the factors affecting observed coparenting dynamics is situated in Feinberg's proposition that coparenting dynamics are likely to be influenced by child and parent characteristics. This aligns with the developmental contextualist view of the person-context interaction which suggests a relationship between the personal characteristics of the interacting family members and the nature of the interactions between the members (Lerner, 1989). Additionally, family-level influences (for example, the couple's dyadic adjustment) and extrafamilial influences (for example, stress associated with parenting, parental sense of competence) have been proposed as important factors influencing the dynamics of coparents.

This section first orients our attention to characteristics of the child, specifically gender and temperament, that can drive observed coparenting dynamics. Following this, attention is devoted to developing a better understanding of the roles of parent age, education, dyadic adjustment (relates to the couple's relationship quality outside of their roles as parents), parenting stress and parental sense of competence in determining the nature of coparenting dynamics.

Child gender

Research investigating the role of child gender in observed coparenting dynamics is limited. Given that child gender plays an influential role in determining the quality of other family subsystems such as the marital and parent-child subsystems (Davies & Lindsay 2001; Marsiglio, 1991; Manlove & Vernon-Feagans, 2002; Katzev, Warner, & Acock, 1994), it is surprising that very little research, so far, has addressed the role of child gender in observed coparenting dynamics. While some findings from these few empirical studies suggest that the dynamics of the coparenting system are altered by the gender of the child,

others report no such child gender effects. For instance, McHale (1995) examined the roles of child gender and marital distress in the coparenting relationship. They found that parents who experienced marital distress exhibited more undermining coparental behaviours (hostile and competitive coparenting) during triadic interactions involving boys and more discrepant levels of involvement in interactions with girls. Lindsey, Caldera and Colwell (2005) and Stright and Bales (2003), on the other hand, reported no significant association between child gender and observed coparenting quality in families with infants and pre-schoolers respectively.

Child temperament

Children bring unique traits to the family that are likely to impact coparenting dynamics over time. One such trait relates to the child's temperament. Research investigating the role of children's temperamental traits in the functioning of family subsystems like the marital relationship indicates that more difficult temperamental traits are associated with poorer marital quality (Leve, Scaramella, & Fagot, 2001; Mehall, Spinrad, Eisenberg, & Gaertner, 2009; Porter, Wouden-Miller, Silva, & Porter, 2003). Children with more difficult or negative emotionality traits may demand more parental time and energy resulting in less attention being directed to the marital relationship (Mehall et al., 2009). Evidence suggests that parents who perceived themselves as experiencing more parenting problems also experienced less marital intimacy (O'Brien & Peyton, 2002).

While research has established clear associations between child temperament, parenting and couple adjustment, relatively little attention has been devoted to understanding the contributions of child temperament to the coparenting relationship. With the interdependence of family subsystems (Minuchin, 1985), it is plausible that a

relationship exists between child temperament and coparenting dynamics. However, findings from studies examining this relationship are mixed. In a recent study, Gallegos, Jacobvitz, Sasaki and Hazen (2019) found parental perceptions of their spouses' parenting and infants' (8-month-olds) temperament to be predictive of observed child-centred coparenting during toddlerhood. Specifically, high maternal perceptions of their partners' parenting predicted high levels of paternal warmth and more child-centred coparenting in families with more temperamentally reactive infants. High paternal perceptions of mothers' parenting marginally predicted high maternal warmth and child-centred coparenting in families with low temperamentally reactive infants.

Van Egeren (2004) reported an association between infant temperament and fathers' experiences of the coparenting relationship. Specifically, fathers of temperamentally difficult infants (aged 6 months) experienced poorer coparenting relationships overall. In a similar vein, Lindsey et al. (2005) found that fathers of infants (aged between 11 to 15 months) with difficult temperament exhibited more intrusive coparenting behaviours during a triadic play episode. Such findings are also indicative of parental gender differences in susceptibility to difficult child temperament. As suggested by Gordon and Feldman (2008), paternal coparenting behaviours may be impacted more by child characteristics than maternal coparenting behaviours. Decreased involvement of fathers in interactions with temperamentally difficult infants may lead to a decline in supportive coparenting behaviours (Davis, Schoppe-Sullivan, Mangelsdorf, & Brown, 2009). A reciprocal relationship was also suggested such that fathers who received more coparental support invested more in their parenting role which in turn predicted less difficult behaviours in young children (Davis et al., 2009).

A few other studies have reported contrasting findings. For instance, Stright and Bales (2003) reported no significant association between children's (aged between 3 to 5 years) temperament and observed coparenting dynamics. Similarly, Metz, Majdandzic and Bogels (2016) found concurrent but no predictive associations between toddlers' temperament and coparenting dynamics. Relatively more research has focused on examining the associations between temperamental traits and coparenting dynamics in the developmental stage of infancy and the pre-school period. We have less understanding about the nature of this association in relation to the toddlerhood years.

Toddlerhood is a developmental period wherein the evolving parenting and coparenting subsystems are likely to be challenged by infant characteristics. Parents of toddlers with difficult temperaments may require additional resources to coordinate their efforts and maintain a supportive coparenting relationship over time. Stright and Bales (2003) suggest two possible mechanisms by which child temperament may be associated with coparenting dynamics. One possible mechanism relates to the compensatory effect wherein parents compensate for their children's difficult temperament by devoting more effort to maintaining a supportive coparenting relationship. Another possible mechanism is that parents of temperamentally difficult children experience greater levels of parenting stress which in turn leads to a disintegration of the coparenting relationship.

It is to be noted that the majority of research in this area has focused on only one dimension of child temperament, primarily difficult temperament (e.g. negative affectivity such as fussiness, unpredictability, distress to novel stimuli). Relatively little is understood in relation to other broad domains of temperament such as those traits associated with high levels of positive affect (known as surgency; Rothbart, Ahadi, & Evans, 2000) or those

associated with the child's ability to self-regulate emotions and inhibit behavioural responses (also known as effortful control; Rothbart et al., 2000). Given this gap in the literature, further research in this area is needed that takes into consideration multiple dimensions of toddlers' temperament in relation to observed coparenting dynamics.

Parent age

Very little research, to date, has examined the association between parent age and coparenting dynamics. Studies on coparenting have often included parent age as a covariate thereby limiting the possibility of a discussion about the nature of this relationship. However, preliminary findings from a limited body of research suggest a relationship between parental age and maternal coparenting behaviours. For instance, Lindsey et al. (2005) reported a negative association between parent age and maternal reports of intrusive coparenting. Given that parent age was then controlled for in the analysis, this finding was not further discussed. Factors such as social support, parental income and number of children in the family could be further investigated to explain this association.

Parent education

A personal resource that is central to understanding coparenting dynamics is parental education. Education may equip parents with specific skills (e.g. perspective-taking), attitudes and knowledge about successful parenting strategies that contribute to a more successful coparenting system (Stright & Bales, 2003). Such skills and knowledge can allow parents to resolve coparental conflicts using supportive techniques while working towards the common goal of raising a child together. However, limited research has addressed the role of parental education in the coparenting relationship. While Gable, Belsky, & Crnic (1995) reported no relationship between parental education and the

coparenting relationship, Stright and Bales (2003) found parental education to be predictive of the quality of coparenting. Specifically, mothers with higher levels of education exhibited more supportive coparenting behaviours as compared to mothers with less education.

Dyadic adjustment

Family subsystems are distinct (Schoppe-Sullivan, Frosch, Mangelsdorf, & McHale, 2004) yet interlinked (Van Egeren, 2004), and research has consistently demonstrated an association between couple's dyadic adjustment and their coparenting relationship (Cabrera, Shannon, & Taillade, 2009; Pedro, Ribeiro, & Shelton, 2012). Feinberg (2003) highlighted the bidirectional nature of the relationship between marital functioning and the coparenting relationship. For instance, Feinberg (2003) suggested that during the transition to parenthood and the formation of the new coparental system, couples use their existing skills to support and respect each other and resolve disagreements amicably. The functioning and quality of this coparenting system, in turn, influence the nature of the overall marital relationship.

McHale (1995) observed parents interacting with infants in their first year and found that parents who experienced marital conflict displayed more hostile-competitive coparenting dynamics during the triadic interaction. Along similar lines, a decline in fathers' marital satisfaction was found to be associated with higher competitive coparenting during a triadic family interaction involving 24-month-old infants (Umemura et al., 2015). Schoppe-Sullivan, Mangelsdorf, Brown, and Sokolowski (2007) found high marital quality to be associated with more optimal coparenting particularly when raising a child with a difficult temperament. Kopystynska, Barnett, and Curran (2019) found destructive conflict

in the marital subsystem to be related to lower levels of coparenting alliance and constructive conflict to higher levels of coparenting alliance. Although there is a limited body of research in this area, these significant associations draw attention to the interdependence of the family subsystems which can potentially influence coparenting behaviours and child outcomes. Further research in this area is thereby warranted to explore such associations further.

Parenting stress

While research indicates a bidirectional relationship between the marital relationship and parenting stress (Camisasca, Miragoli, & Blasio, 2014; Lavee, Sharlin, & Katz, 1996), relatively little is known about the nature of the association between the coparenting subsystem and parenting stress. However, findings from a limited body of literature suggest the presence of a relationship between the two. For instance, McDaniel, Teti, and Feinberg (2018) found daily fluctuations in coparenting to be predicted by fluctuations in parenting stress (among other factors such as fathers' work hours, parents' negative mood). Kanter and Proulx (2019) provide some support for this. In their longitudinal study spanning over eight years, perceived supportive coparenting was positively associated with maternal parenting stress when the child was 1 year old but negatively associated with maternal parenting stress when the child was 3 and 5 years old. However, beyond 5 years of age, the association between maternal parenting stress and mothers' perceived coparenting supportiveness was no longer significant. In light of these important but limited findings in the literature, there is a need to conduct further investigations into the role of parenting stress in coparenting dynamics.

Parental sense of competence

Relatively little research, to date, has documented the role of parental cognition in coparenting processes. One vital cognition relates to parenting sense of competence which prior research has found to impact parenting behaviours in parent-child interaction (Coleman & Karraker, 1998). In comparison to other factors affecting the coparenting relationship, reviewed thus far, research on the association between parental sense of competence and coparenting dynamics has yielded more consistent findings. Parental sense of competence is reflected by mothers' and fathers' evaluations of themselves as parents and encompasses two components, namely, self-efficacy in parenting and satisfaction with parenthood (Gibaud-Walston & Wandersman, 1978; Johnston & Mash, 1989). Parental self-efficacy refers to parents' confidence in their ability to respond to their children's needs effectively (Teti, O'Connell, & Reiner, 1996) and positively influence their developmental competencies (Coleman & Karraker, 1998). Parental satisfaction is reflected by the degree to which parents feel motivated, anxious, bored or frustrated in their roles as parents (Johnston & Mash, 1989).

Within the context of coparenting, evidence suggests that parents' self-report of higher-quality coparenting is associated with a higher parental sense of competence (Latham et al., 2018). However, Favez, Tissot, Frascarolo, Stiefel, & Despland (2016) reported differential patterns of association between mothers' and fathers' sense of competence and observed coparenting dynamics. In a triadic interaction involving 3-month old infants, maternal sense of competence was positively associated with supportive coparenting whereas paternal sense of competence was positively associated with coparenting conflict.

The authors posit that if mothers feel more competent and take the lead in a triadic interaction, more supportive coparenting dynamics can be observed. On the other hand, if fathers feel more competent and engage more actively with infants, greater coparental undermining is observed with each parent interfering in the interaction between the other parent and the infant. With specific reference to parental self-efficacy, Solmeyer and Feinberg (2011) found that parents in undermining coparenting relationships exhibited consistently low self-efficacy with elevated depressive symptoms. In a related study, Korja et al. (2015) found a significant positive association between parental self-efficacy and family coordination in a triadic interaction involving 18-month old infants.

As evident from this discussion, there is a dearth of research investigating factors that contribute to the quality of coparenting dynamics. Moreover, given the inconsistent findings in the literature on some of the factors (e.g. child temperament, parenting stress) affecting the coparenting relationship, it is important that further research is undertaken to broaden our understanding of sources of variability in relation to coparenting.

Coparenting across time

Given the consistent finding that coparenting exerts a unique influence on children's development, attention has been directed at understanding the development of the coparenting relationship itself. As children grow older and gain more autonomy, parents find themselves in a position where they must encourage the development of their children's nascent skills while ensuring that this takes place within a safe environment. In addition, limit-setting and enforcing become issues of central importance as parents must coordinate their efforts and reach an agreement on childrearing issues. As such, the child's

developmental level is essentially a context for coparenting and the dynamics parents exhibit are to a great extent contingent on the child's repertoire of behaviours.

Schoppe-Sullivan et al. (2004) highlight the following crucial points pertaining to the development and stability of coparenting. They note that based on the developmental period under review, the coparenting difficulties encountered by parents are likely to differ. When children transition from one stage of growth to another the emphasis must shift from working together to ensure that the basic needs of young children are met to ensuring that older children learn and use their skills appropriately. In the early stages, Schoppe-Sullivan et al. (2004) address two potential outcomes for parents who organize their parenting strategies. On the one hand, parents who coordinate their activities successfully when their children are young may be able to utilise those skills acquired at another developmental stage when the children are older. On the other hand, there appears to be no assurance that the skills parents acquire during the early developmental years will be carried forward to another developmental stage.

Results from the limited body of literature examining the stability of the coparenting relationship indicate that coparenting dynamics remain stable across the first three years of development (Gable et al., 1995; Van Egeren, 2004). For instance, McHale and Rotman (2007) evaluated coparenting adjustment at multiple timepoints (3, 12 and 30 months postpartum) and reported that early emerging coparenting dynamics predicted longer-term coparenting adjustment. While moderate coparenting stability was established on the basis of rank-order stability (the extent to which the ordering of parents on the basis of their coparenting dynamics is maintained over time) across these studies, Schoppe-Sullivan et al. (2004) pointed out that mixed results were yielded by researchers who

looked at mean level (the extent to which the absolute levels of supportive and undermining coparenting dynamics change on average with time) stability (Davis et al., 2009; Gable et al., 1995; Van Egeren, 2004). Their study which extended to examining both rank-order and mean-level stability of coparenting reported moderate stability across 13 months to 3 years of child age (Schoppe-Sullivan et al., 2004).

The understanding that young children affect the behaviours of parents is rooted in the transactional development model which states that reciprocal influences exist between the child and the context (Sameroff, 1975; 2009). Much as parents influence their children, children often influence the actions of their parents. Given that the child is the focus of the coparenting interaction, it is likely that the temperamental traits that children bring to the dynamic are going to influence the development of the coparenting alliance.

As noted previously in the chapter, relatively few empirical investigations have addressed the role of child temperament in the development of the coparenting relationship and these studies have yielded mixed results. Some findings suggest that more difficult child temperaments lead to compromised coparenting quality (Gordon & Feldman, 2008; Lindsey et al., 2005; McHale & Rotman, 2007; Van Egeren, 2004). Berkman, Alberts, Carleton, and McHale (2002) documented novel associations that indicated that infants classified as more temperamentally negative and inhibited had parents who participated in more positive coparenting activities during triadic parent-child interactions.

Schoppe-Sullivan et al. (2007) observed no direct associations between infant (3.5 months old) temperament and the coparenting relationship. It is likely that more time is required for the role of child temperament to become evident in coparenting dynamics. Longitudinal studies that track the impact of child temperament on coparenting dynamics

over the early developmental stages are therefore needed. Given these mixed findings, evaluating the circumstances under which coparenting dynamics in the toddlerhood years foreshadow those observed in the preschool years is important for informing research and practice.

As evidenced previously, the challenges posed by children's difficult temperamental traits are likely to impact both parenting and coparenting behaviours in infancy and toddlerhood (Belsky, 1984; Davis et al., 2009; Laxman et al, 2013; Micalizzi, Wang, & Saudino, 2017). While the role of infant temperament in the stability of coparenting dynamics has been investigated and established in the developmental periods of infancy and toddlerhood, relatively little is known about the role of different dimensions of toddlers' temperament in coparenting dynamics across the toddlerhood and the preschool years. For instance, temperamental traits reflective of high levels of negative affectivity may contribute to a less stable coparenting relationship as parents may be required to frequently re-evaluate their parenting and coparenting strategies to meet the challenges of raising a child with these "difficult" temperamental traits (Putnam, Sanson, & Rothbart, 2002).

In families with toddlers with high levels of surgency, high levels of impulsivity may demand more reassessments of coparenting strategies. However, given the high levels of positive affect, coparenting dynamics may be less prone to instability as compared to negative affectivity. Toddlers with high levels of effortful control may be less challenging for parents to manage thereby requiring less reassessment of their coparenting strategies and greater stability over time. Further investigation that extends prior research by

examining the role of these broad dimensions of toddlers' temperament in the stability of coparenting dynamics across toddlerhood to the preschool years is warranted.

Overall, this chapter aimed to: (i) provide an overview of the evolution of the coparenting construct; (ii) identify gaps in the literature pertaining to the factors that can influence coparenting dynamics, and (iii) determine its stability across time.

Chapter 2

Coparenting dynamics and toddlers' socio-emotional development

Aside from the need to identify and examine factors predicting the dynamics of the coparenting relationship, there is also a need for further research on understanding the role of the coparenting relationship in triadic parent-child interactions and child developmental competencies. To date, a handful of studies investigating factors influencing children's social and emotional development have adopted a systemic approach that draws attention to the important role of the coparenting relationship. In accordance with this, the first section of this chapter discusses (i) the need to examining coparenting dynamics in toddlerhood and (ii) provides a comprehensive review of literature that illuminates the unique relations between coparenting dynamics and toddlers' social and emotional development.

Toddlerhood as an important developmental stage for examining coparenting

Toddlerhood (children aged between 16 to 36 months; Lally et al., 2003) is a developmental stage during which children's skills required for functioning independently in a social world are continuously expanding. Early parent-child interactions serve as an important context within which toddlers are afforded the opportunity to develop social and emotional competencies. Social competence is defined as "the ability of young children to successfully and appropriately select and carry out their interpersonal goals" (Guralnick, 1990, p.4) while their emotional competence refers to "the ability to understand the emotions of self and others, read emotional cues and react to others' emotions, regulate one's own emotions, and understand the consequences of one's own emotional expressiveness (Halle & Darling- Churchill, 2016, p.10).

Closely linked with toddlers' core social and emotional competence is the development of adaptive skills. Toddlerhood is characterised by the development of significant adaptive skills required for gaining autonomy and independence in day to day living. Adaptive skills pertain to children's acquisition and implementation of conceptual, social and practical skills to function independently and to meet environmental demands (Bayley-III; Bayley, 2006). Adaptive skills that are vital to toddlers' development of social and emotional competence relate to their abilities in establishing and maintaining social and emotional relationships with others, understanding and regulating one's own emotions, recognising emotions in others, following instructions, adapting to new situations as well as engaging in verbal and non-verbal communication. In addition, adaptive skills also relate to personal care such as feeding, bathing, dressing oneself and motor skills required for running, jumping, climbing (Bayley, 2006). Advances in skills that are required to perform the activities of daily living across early childhood to adulthood facilitate the attainment of independence in adulthood (Sparrow, Cicchetti, & Balla, 2005).

It is within a family context that very young children are afforded opportunities to develop socio-emotional competence and become familiarized with the social and emotional rules governing successful interactions. Parents model appropriate social and emotional behaviours and the emotional climate created by them in the family context has an impact on children's social and emotional development (Morris, Silk, Steinberg, Myers, & Robinson, 2007). This familial influence on toddlers' social and emotional development is best understood in the context of a bioecological model of human development (Bronfenbrenner & Morris, 2006). This theoretical paradigm posits that child development is influenced by the reciprocal interactions between the child and the environment.

Such reciprocal interactions also called “proximal processes” (Bronfenbrenner & Morris, 2006, p.795), form the core of this model and can vary in their degree of complexity, between the child and the environment that, in turn, shape children’s development. Examples of such proximal processes in a child’s life are parent-child activities, interactions with peers as well as interactions with other objects and symbols in the environment that child encounters. The key to understanding these proximal processes is that there exists a bidirectional relationship between the child and the environment. In that sense, proximal processes are truly interactive: the child influences, and is influenced by, interactions with individuals and organisations.

Within the theoretical underpinnings of this model, the need to understand the role of the family context in relation to toddlers’ social and emotional development is highlighted. While there is an extensive body of literature highlighting the contributions of individual parenting behaviours (e.g. warmth, unemotional behaviour, and talk) to toddlers’ socio-emotional adjustment (Girard, Doyle, & Tremblay, 2017; Senehi, Brophy-Herb, & Vallotton, 2018; Spinrad et al., 2007; Waller et al., 2014), relatively little is known in relation to the importance of examining coparenting behaviours specific to the toddlerhood period. The emerging developmental competencies of very young children are reliant on family systems that go beyond individual parenting practices (Minuchin, 1985).

Given that toddlerhood is marked by increasing social awareness, children in this developmental stage are likely to be attuned to the dynamics between their parents (Thompson, 2006). For instance, Umemura et al. (2015) stated that children around the age of 2 are cognizant of whether their parents are supportive and united in their roles as coparents and that this has important implications for their later development. They

demonstrated this in their study which found that toddlers exposed to more competitive coparenting exhibited more psychological problems at age 7 (based on teacher and parent reports). Greater social awareness increases the likelihood that toddlers will model the affective displays of their mothers' and fathers' interactions with each other to guide their own behaviours and manage their emotions and emotional reactivity (commonly referred to as emotion regulation).

This social referencing, although rarely examined in the context of coparenting, is a possible mechanism by which coparenting dynamics can directly impact toddlers' social and emotional development. By displaying coparenting dynamics characterized by less supportive and more undermining behaviours (low level of coparental warmth/high level of coparental displeasure for example) parents can inadvertently model maladaptive strategies that toddlers can emulate for managing their own social and emotional responses. Another possible mechanism relates to relates toddlers' emotional security within the family. For instance, coparenting dynamics characterized by more cooperative behaviours have also been found to be essential for promoting a sense of security in young children which gives them the opportunity to focus on their own and others' emotional states and behaviours (Davies & Cummings, 1994; McHale & Rassmussen, 1998).

Direct and indirect associations among coparenting and toddlers' social and emotional development

As noted in the previous chapter, several studies have highlighted direct associations between coparenting and children's social and emotional development. For instance, Kolak and Vernon-Feagans (2008) and Schoppe-Sullivan et al. (2001) reported fewer externalising and internalising behavioural problems in toddlers whose parents

engaged in more cooperative coparenting during play. Belsky et al. (1996) found coparenting relationship quality to be associated with children's social and emotional development even after controlling for individual parenting behaviours. Barnett, Scaramella, McGoron and Callahan (2012) found that mothers' perceptions of the levels of cooperation in their coparenting relationship independently predicted increases in toddlers' and older children's social competence. Such positive parenting in turn was found to be associated with better social competence in both younger and older children, also highlighting the indirect links between coparenting and child socio-emotional outcomes.

Karreman et al. (2008) examined relations among coparenting, parenting and toddlers' effortful control (relating to the self-regulatory domain of temperament) during a play interaction. Results indicated that coparenting dynamics played a significant role in predicting children's effortful control over and above individual maternal and paternal parenting behaviours including nurturance, responsiveness, consistency and their use of different types of discipline strategies. More hostility and competitiveness within the coparenting relationship was associated with more emotion-regulation and behaviour-regulation difficulties in children. Similarly, McHale and Rasmussen's (1998) study reported direct links between coparenting quality and children's aggression (even after controlling for marital quality and parental well-being).

Teubert and Pinquart (2010) found that independent of individual parenting, coparenting was associated with children's social functioning as well as internalising and externalising symptoms. However, after controlling for marital relationships, coparenting was no longer significantly associated with overall social functioning but remained associated with children's internalising and externalising symptoms. In line with the

emotional security hypothesis (Davies & Cummings, 1994), the authors suggest that coparenting undermining behaviours foster emotional insecurity via increased negative emotional arousal. Even within the context of consistent parenting, coparenting undermining behaviours create a less favourable environment for children to internalise rules (Karreman et al., 2008). However, research suggests that when parents can strategically manage their conflict (such as deal with their conflicts when not in the presence of the child), children do not exhibit any negative behaviours (Feinberg, 2003).

In addition to the studies demonstrating direct associations between coparenting and toddlers' socio-emotional development, many have reported indirect/mediational links (Baptista, Sousa, Soares, & Martins, 2018; Ren & Xiu, 2019). Lindsey and Mize (2001) discuss the possibility that parents who share similar beliefs, engage in similar parenting behaviours and are warmer towards each other generally tend to form more harmonious and responsive relationships with their children. It can be assumed from this then that parents who display higher levels of competition and less cooperation and warmth towards each other while caregiving might engage in more undermining parenting behaviours when interacting with their children.

Support for this notion comes from the spillover effect such that disruptions in marital life tend to seep into parenting, coparenting and parent-child relationships which in turn adversely affect children's developmental outcomes ((Erel & Burman, 1995; Katz & Gottman, 1996). For instance, stress (created by marital problems) was found to be a factor that compromises parenting and coparenting behaviours (Erel & Burman, 1995; Kitzmann, 2000). Cox, Paley and Harter (2001) found marital distress to have a negative impact on triadic interactions by interfering with effective coparenting behaviours. More recently,

Peltz, Rogge and Sturge-Apple (2018) reported reciprocal associations between marital functioning and supportive coparenting behaviours (e.g. coparental cooperation) and undermining coparental behaviours (e.g. coparental conflict). Additionally, father-reported coparenting conflict mediated the association between father-reported marital satisfaction and mother-reported parent-child relationship (cross-parent mediation).

These findings from studies examining marital relationships thereby raised the question of whether the ‘spillover’ hypothesis could also be applied to coparental relationships. In accordance with this, Kwon et al. (2013) investigated the links between coparenting, parental gentle guidance and toddlers’ social-emotional competencies. Results showed a mediational role of maternal gentle guidance that accounted for the association between coparenting and child socio-emotional development. Mothers who reported receiving more coparental support used higher levels of gentle guidance as a parental control strategy. This finding provided support for the spillover effect for positive emotions across family sub-systems. Mothers who feel more supported in their parenting roles are more emotionally fulfilled and are thereby more likely to use gentle guidance strategies in their interactions with young children. This in turn contributes to higher levels of social and emotional competencies in toddlers.

Fewer studies have assessed the moderational role of coparenting in triadic parent-child interaction and toddlers’ social and emotional development. Results from studies including an older child cohort suggest that coparenting can act as a moderator that can modify the relationship between specific parent/child behaviours/characteristics and children’s social and emotional adjustment. For instance, Kolak and Volling (2013) conducted a longitudinal investigation that examined the moderating role of coparenting in

the association between children's temperament and problem behaviour during their transition to siblinghood. Results from the play-based observation showed that at high levels of undermining and low levels of supportive coparenting, negatively reactive first-born children displayed more externalising behaviours across their transition to siblinghood.

In a similar vein, Scrimgeour, Blandon, and Stifter (2013) examined whether coparenting dynamics (observed during triadic play-based interaction task) moderated the association between maternal inductive reasoning and children's prosocial behaviour. The study found that at low levels of coparental cooperation, mothers' infrequent use of inductive reasoning predicted fewer prosocial behaviours in children. Such findings demonstrate that coparental cooperation can act as a buffer against children's development of low levels of prosocial behaviours when their mothers exhibit infrequent inductive reasoning behaviours. High levels of coparental cooperation most likely provide a stable emotional environment that supports children's well-being.

Overall, this discussion highlights toddlerhood as a period of rapid socio-emotional growth and development. Toddlers' ability to engage in meaningful and effective social interactions with others, to recognise one's own emotional state and that of others, and to regulate emotional and behavioural responses is important for overall wellbeing. Early interactions with coparents and the dynamics that exist between them in this developmental stage are vital as they set the stage for future socio-emotional competencies.

Parental play behaviours and toddlers' socio-emotional development: The role of the interactional context and coparenting dynamics

As observed from the literature reviewed thus far, one common feature of observational studies on coparenting is the inclusion of object (toy) play tasks and activities in triadic parent-child interaction. Among the multitude of familial factors influencing children's development, parent-child play consistently emerges as a key factor that aids toddlers' social, emotional, language, cognitive and executive functioning skills (Lindsey, Mize, & Pettit, 1997; Menashe-Grinberg & Atzaba-Poria, 2017; Runcan, Petracovschi, & Borca, 2012).

During early childhood, parents are typically the first playmates. Object play with parents creates a stimulating environment that allows children to benefit from their parents' knowledge and experience and learn about how the world works around them. This is primarily because parents scaffold children's play which allows them to develop skills and knowledge that would otherwise be difficult for young children to master by themselves (Vygotsky, 1978). Evidence for this comes from empirical research which suggests that children play at higher levels when interacting with parents than when playing alone (Fiese, 1990; O'Connell & Bretherton, 1984).

However, so far, there has been little detailed investigation of parental play behaviours that can facilitate toddlers' social and emotional development. Most studies that have incorporated play tasks in their methodology have examined *parenting* behaviours or styles (e.g. nurturance, intrusiveness). In addition, little is known about how such behaviours can vary based on context (dyad versus triad) in which the play occurs. Despite the family being recognised as an important context for toddlers' social and emotional

development, most investigations on parent-child play have been conducted through observations of parent-child dyads. An exclusive focus on the parent-child dyadic interactional context overlooks the reality that very young children frequently engage in play with both parents whose behavioural patterns can be altered based on the context in which they are observed.

Triadic parent-child play interactions are an important context for examining coparenting dynamics which can lead to a better understanding of family functioning. Therefore, research that uses a systemic approach to understand parental play behaviours by extending the analysis from a dyadic to a triadic or whole-family level is important. This section of the chapter discusses the importance of parental play (focus on object play) with toddlers and focuses on highlighting the necessity to use a systemic lens for examining parental play behaviours in relation to toddlers' social and emotional development.

Parental play behaviours in parent-toddler object play

In comparison to research examining the characteristics of toddlers' play in interactions with parents, relatively little attention has been directed at examining parental play behaviours. Current conceptualisations of parental play are centred on a handful of empirical investigations that focus on parents' ability to engage in rough and tumble play and symbolic/pretend play with objects. Minashe-Grinsburg and Atzaba-Poria (2017) and Cabrera and Roggman (2017), for instance, conceptualised mothers' and fathers' "playfulness" (p. 2) as the extent to which parents exhibited creativity, imagination, pretend play and humour during object play with infants and toddlers. Both studies reported significant positive effects of parental playfulness on children's social and emotional competence.

Object play has often been characterised as extra-dyadic play owing to the focus turned outward towards the object as compared to interpersonal play which focuses on face-to-face interactions, social games (e.g., peek-a-boo/pat-a-cake) and physical play (tickling) (Bornstein & Tamis Le-Monda, 1990). While play in infancy is characterised by sensorimotor exploration and simple manipulation of objects, play with toys in toddlerhood is more functional and elaborate (Campbell, Leezenbaum, Mahoney, Moore, & Brownell, 2017). During this developmental period, toddlers are beginning to use toys in accordance with their intended function (e.g., stacking blocks, rolling cars on the ground). Through this, young children are beginning to make sense of the world around them.

Object play facilitates the development of infants' and toddlers' sustained attention (visual examination of a single object such as a toy with a sustained look) which increases from an average of 3 seconds in 1-year-olds to 9 seconds in 3-year-olds (Ruff & Lawson, 1990). Sustained visual attention has been previously evidenced as being strongly related to visual learning about the attended object during infancy (Lansink & Richards, 1997; Ruff, 1986) which then predicts children's later inhibitory control and self-regulation capacities (Kochanska, Murray, & Harlan, 2000; Reck & Hund, 2011; Ruff, 1986). While some evidence suggests that the ability to sustain attention is an intrinsic and stable attribute of the child related to their temperament (Posner & Rothbart, 2000), others show that factors like parent-child object play, also play crucial roles (Diamond, 2013; Yu & Smith, 2016).

Young children not only learn through their actions but also through their social interactions with parents who introduce and demonstrate interesting objects and actions in the play environment. Early parent-child play interactions expand to include toys by the middle of the first year of a child's life and as children become more competent at directing

their attention to external objects during play, mothers begin to adjust by creating “spectacles” for their child (Tamis Le-Monda, Użgiris, & Bornstein, 2002, p. 224). The inclusion of toys in parent-child play can help to both stimulate and prolong play. It allows parents to familiarise toddlers with novel concepts and functions of different objects. This playful environment is conducive to children’s learning of how the world works. During parent-child play, parents frequently model to their children ‘right’ ways of performing specific tasks. Research indicates that children learn to use toys in functionally expected ways when playing with mothers as compared to when playing alone (Fiese, 1990). Since toys are essentially cultural objects, the parent-child play context allows children to learn conventional ways of playing with these toys (Tamis Le-Monda et al., 2002).

Research indicates that parents engage in multimodal behaviours during play which can serve as an important context for the development of joint attention skills in infants and toddlers. Given that the goal of joint attention behaviours is to share an experience through an object or an event (Bruner, 1981), it is no surprise then that parents’ play behaviours serve important functions for young children’s social and emotional competencies. For instance, Suarez-Rivera et al. (2019) state that when parents play with their infants, they engage in behaviours beyond just looking at the targeted objects or their infants. Their behaviours might extend to touching or handling objects as well as talking about objects (Tomasello & Farrar, 1986; Yu & Smith, 2012; Yu & Smith, 2013) which serve important functions for organising infants’ visual attention to objects (Yu & Smith, 2013).

Additionally, through such multimodal play behaviours, parents can help toddlers share their affective states, regulate their emotional responses such as frustrations and excitement, focus and refocus attention on a specific task, control impulses and

communicate their needs and ideas. Yu and Smith's (2016) study, for example, showed that parent visual attention to a toy increased infants' interest in the object and they looked at the object longer than they would otherwise. The authors suggest that such periods of shared interest if repeated daily would facilitate the development of self-regulation of attention in young children.

While parents' visual attention to the toy/play activity is beneficial for toddlers' developmental outcomes in many domains, other parental play behaviours such as physical manipulation of toys and facilitation of play using language are not yet very well-defined behaviours. For instance, is parents' physical manipulation of toys important for toddlers' social and emotional skills? Does this toy play create more opportunities for toddlers to engage in more social interactions with parents (e.g. sharing toys/turn-taking/cooperating)? Or in the absence of toy play, is verbal facilitation of play sufficient to promote toddlers' social and emotional skills? Additionally, would the predominance of either of these play behaviours (e.g. more time engaged in verbal facilitation) have implications for toddlers' socio-emotional development? Investigating and answering such questions may contribute to a better understanding of the role of parents in toddlers' object play.

Systemic view of parental play behaviours

While we have some understanding of the importance of parental play with children, the context within which this play occurs plays an important role in influencing parents' play behaviours. One contextual factor relates to the number of interacting participants. Much of the research up to now has investigated parent-child play interactions in a dyadic context involving only one parent and the child (Cabrera et al., 2017; Crawley & Sherrod, 1984; John, Halliburton, & Humphrey, 2013; Lovass, 2005; Menashe-Grinberg

& Atzaba-Poria, 2017; Tamis-LeMonda et al., 2004). For instance, John, Halliburton and Humphrey (2013) examined quantitative and qualitative differences in mothers' and fathers' play behaviours (in separate dyads) with their preschool children. Results indicated that while mothers tended to structure, guide and converse empathically with their children, fathers tended to engage more in physical play, follow the child's lead and challenge them.

Additionally, Bright and Stockdale's (2010) study found that mothers were quieter than fathers during their play interactions with pre-schoolers. Among a younger child cohort, Power and Parke (1983) examined parental play behaviours with 8-month-old infants and found that mothers were more responsive than fathers to infants' attentional cues. Mothers were more likely than fathers to shift their focus to the toy in accordance with the infants' looking behaviour. Fathers, on the other hand, were more likely to miss such cues and to introduce new toys when infants were already playing with and manipulating a different toy.

However, within most two-parent families, parents frequently interact with their children in the presence of each other. The need to study families as units is also reflected in the understanding and evidence that such triadic level family interactions play an important role in the socialisation of the young child (Kwon, Jeon, Lewsader, & Elicker, 2012). The triadic context affords a more diverse and complex emotional environment (Lindsey & Caldera, 2006), within which the play behaviour of one parent can be modified by the presence of the other parent.

It is important to point out that contextual variations in parents' play behaviours can also interact with or be intensified by parents' gender and gender-role orientations respectively. The gender-role stereotypical and traditional view of mothers is as the primary

caregiver who regulates the extent to which fathers are involved with their children. For instance, mothers may be more reluctant to give up control to fathers in a domain in which they hold predominance (DeLuccie, 1996) and alternatively, fathers may feel less responsible for interacting with their children in the presence of mothers irrespective of mothers' behaviour (Pleck, 1997). However, given that these studies were conducted over two decades ago, it is possible that these dynamics have changed and further research examining contextual variations in parents' play behaviours is warranted.

Research examining contextual variations in mothers' and fathers' behaviours during parent-child play has yielded inconclusive results. While some studies have observed dyadic interactions to be correlated with triadic ones (e.g. Johnson, 2001; Klitzing, Simoni, Amsler, & Burgin, 1999), others have reported both quantitative and qualitative differences in the patterns of interaction across the two contexts. For instance, Clarke-Stewart (1978) observed a decline in the frequency of mothers' engagement in toy play as well as conversations and responsive behaviours in the presence of fathers. Goldberg et al. (2002), on the other hand, observed fewer paternal vocalisations, and less affection and engagement in play in the presence of mothers.

Lindsey and Caldera (2006) observed mother-father-child triads and mother-child dyads in 15-minute play interactions and reported several qualitative differences in parental behaviours across the two contexts. Mothers were observed as being less involved, less sensitive and more negative towards children during triadic interactions. However, their level of involvement was higher than that of fathers in the triadic context. Kwon et al.'s (2012) study contributed unique insights into such contextual variations in mothers' and fathers' interactive behaviours during play with toddlers. Their results indicated that

mothers exhibited higher levels of sensitivity, positive regard and lower levels of negative parenting than fathers in both dyadic and triadic contexts. This was attributed to the differences in the duration of time that mothers and fathers spend with their toddlers. The authors posit that as fathers spend less time with their children they may struggle with or be less likely to read and appropriately respond to children's behavioural signals. However, both parents exhibited higher levels of sensitivity and positive regard and were less detached in the dyadic as compared to the triadic context. This was attributed to the fact that a dyadic context allowed parents to devote their full attention to the child. Additionally, within a triadic context, parents may feel less responsible for leading the interaction when the other parent is present.

Overall, these findings suggest that the interactional context plays an important role in determining the quantitative and qualitative nature of mothers' and fathers' play behaviours which contributes to a broader understanding of how the family functions as a unit. However, what is still missing is an understanding of not just how each parents' play behaviours may or may not differ on the basis of the presence or absence of the other parent, but how the extent to which both parents coordinate and support each other in their interactions with the child can modify the effects of parental play on toddlers' socio-emotional development.

Parent-child play interactions within a triadic context are likely to be influenced by coparenting dynamics. Aside from engaging with their children during triadic parent-child interaction, parents interact with each other in ways that signify coparental supportiveness or a lack thereof. While parents' engagement in play serves crucial functions for toddlers' socio-emotional development, the extent to which parents support each other's playful

interactions with their child is likely to have significant consequences. Parents who display positive emotions towards each other create a positive and safe environment for their toddlers to observe and learn social and emotional skills. Parents who exhibit cooperative and warm coparenting behaviours and take pleasure in their partners' interactions with the child lay the foundation for toddlers to replicate such positive behaviours in other, more complex social situations. Despite the important role that coparenting can play in early parent-child interactions, it is not yet known whether coparenting can potentially alter the effects of parental play on toddlers' social and emotional development. For instance, do parental play behaviours that are embedded in a more supportive coparenting context confer more benefits on toddlers' social and emotional development? Given that early parent-child play interactions are the foundations of learning, it is vital that more research attention is devoted to understanding these associations further.

Parents' child-directed speech during play and toddlers' language

development: The role of the interactional context and coparenting dynamics

Parent-child play is a rich context that allows for an examination of a relatively underresearched area of parental play behaviours. Given that parents facilitate children's play through speech, examining the functions that parents' child-directed speech (CDS) serve is important for advancing knowledge on child language development. Parent-child play provides a context within which toddlers are afforded opportunities to communicate with their play partners, either verbally or non-verbally, which in turn allows children entry into an assortment of culturally scripted events and to build upon their lexicon (Tamis LeMonda et al., 2002). The period of toddlerhood, in particular, is marked by an explosion in

vocabulary which equips toddlers with new strategies to regulate their own emotions (Zemann, Cassano, Perry-Parish, & Stegall, 2006).

Evidence indicates that expanding linguistic skills act as a symbolic tool that allows toddlers to express their own emotions, needs, wants and to identify emotional states in themselves and others (Cole, Armstrong, & Pemberton, 2010; Eisenberg, Sadovsky, & Spinrad, 2005). As toddlers become more competent language users, they engage in more verbal interactions that allow them to initiate and maintain social relationships, express their emotional states, make their intentions apparent to others and rely less on non-verbal behavioural expressions such as anger (Roben, Cole, & Armstrong, 2013).

Parents' child-directed speech, in addition to observed parental play behaviours, makes unique and independent contributions to the parent-child relationship and child developmental competencies. A substantial body of research indicates that parent-child conversations observed within the context of play are significantly associated with language development in toddlers (Kwon, Bingham, Lewsader, Jeon, & Elicker, 2013; Rowe, Coker, & Pan, 2004; Tamis-LeMonda, Baumwell, & Cristofaro, 2012).

The majority of research so far has analysed the linguistic characteristics of CDS and how they may be associated with child language outcomes (Hsu, Hadley, & Rispoli, 2017; Montag, Jones, & Smith, 2018; Song, Spier, & Tamis-LeMonda, 2013; Stern, Spieker, Barnett, & MacKain, 1982). Parental child-directed speech (CDS), for instance, has been extensively researched from its acoustic and prosodic aspects (Rowe & Snow 2020) to debates over the relative importance of quantity versus quality for child outcomes (Genovese et al., 2020; Montag et al., 2018). In comparison to this, fewer studies have

focused on the functions of parental CDS (Paavola-Ruotsalainen, Lehtosaari, Palomaki, & Tervo, 2018; Rowe, Leech, & Cabrera, 2017; Tamis-LeMonda et al., 2012).

Language serves many functions (Bruner, 1981) and parents use speech that facilitates children's engagement in conversation, regulates their emotions, encourages them to vocalise, directs their attention and provides information to the child (Kuchirko, Schatz, Fletcher, & Tamis Le-Monda, 2020; Masur, Flynn, & Lloyd, 2013; Tamis-LeMonda et al., 2012; Yu, Bonawitz, & Shafto, 2018).

One primary function of parental CDS is to facilitate children's verbal interactions. This form of speech as reflected by the use of open-ended (e.g., *where is teddy's coat?*) and yes/no and prompt questions (e.g., *do you like this puzzle? what colour is teddy's coat?*) permit children to express themselves and share their needs and ideas with parents (Menashe & Atzaba-Poria, 2016). By inviting children into conversations, such parental utterances have been found to confer considerable linguistic advantages on children. Leech, Salo, Rowe, & Cabrera (2013), for instance, found fathers' use of 'wh' questions was related to 24-month old children's vocabulary skills. Along similar lines, Rowe et al. (2017) found that fathers 'wh' questions to children aged 24-months contributed to children's vocabulary as well as their verbal reasoning skills measured at age three years. 'Wh' questions are challenging as they demand new information from children thereby building their linguistic abilities.

While some forms of parental CDS facilitate verbal responses, others restrict children's engagement in discourse. Parental use of commands and prohibitions, also known as directives, have mostly been found to confer limited linguistic benefits on toddlers (Hoff & Naigles, 2002; Masur, Flynn, & Eichorst, 2005; Paavola, Kunnari,

Moilanen, & Lehtihalmes, 2005). Research indicates that parents' use of directive speech such as commands (e.g., *put the toy away*) and prohibitions (e.g., *stop throwing your toys*) serves to guide or direct children's behaviours (Hoff, 2006). However, despite its regulatory functions, directive speech has been reported as being controlling or restrictive in nature. Given that directives are relatively short and do not provide much new information, their frequent use with children who are capable of responding verbally may not confer any linguistic benefits (Hoff, 2006) and may even be negatively associated with children's language development (Tamis Le-Monda, Song, Leavell, Kahana-Kalman, & Yoshikawa, 2012). For instance, Paavola-Ruotsalainen et al. (2017) found maternal directiveness was negatively associated with one-year-old children's comprehension skills. No significant relations were observed with children's later linguistic skills measured a year and a half later. However, further research on this functional aspect of parental CDS is warranted given that some studies have reported contrasting evidence (Akhtar, Dunham, & Dunham, 1991; Callanan, Akhtar, & Sussman, 2014).

Parental CDS also serves to praise, encourage and engage children within a multitude of interactive contexts. Such gentle guidance strategies are non-assertive and encourage children to communicate through verbal means and build upon their confidence and motivation. Parents' use of suggestions (e.g., *maybe we should put the blocks on top of each other*), praise and encouragement (e.g., *good job dressing the teddy*) can be proposed as a type of speech that creates a safe and warm emotional environment (Conway et al., 2018) and that encourages and supports young children's verbal and non-verbal attempts to communicate their needs and express themselves.

Parental use of gentle and positive speech for guiding toddlers' actions and behaviours during play has mostly been examined in relation to children's socio-emotional competencies (Bandon & Volling, 2008; Kwon et al., 2013; Volling, Bandon, & Gorvine, 2006). While results from these studies suggest a positive association between parental use of gentle speech and children's social and emotional development, we have yet to examine associations in relation to toddlers' language development.

Parental CDS also functions to familiarise toddlers with different properties of objects (labelling and describing) and to provide information about ongoing events during play and in other contexts. Referred to as 'referential' or 'didactic' speech, statements such as "*this is a blue fish*" or "*the teddy is feeling cold*" expose children to different word types and classes (Kuchirko et al., 2020), thereby contributing to their vocabulary growth (Huttenlocher et al., 2010; Rowe, 2012). Tamis Le-Monda et al. (2012) found that maternal use of referential speech with infants aged 14 months significantly predicted toddlers' expressive language skills at age 2. It is suggested that such an association could be explained by the semantic richness of referential speech. This form of speech appeared to orient/ direct infants' attention to specific characteristics of objects and events such as their colour, shape, number and other attributes.

Communicative functions of parental CDS across dyadic and triadic contexts

Within the family system, numerous contextual factors can influence parental CDS. As discussed in relation to parental play behaviours, one such contextual factor relates to the number of family members interacting (dyadic versus triadic contexts). The triadic context provides unique information that goes beyond the combined effects of mother-child and father-child interactions (Fosco & Grych, 2012) and therefore must be analysed as a

separate context (Favez, et al., 2017). Even though families have long been regarded as dynamic, integrated systems (Cox & Paley, 2003; Minuchin, 1985) there is a dearth of literature that looks at families *as* systems (Hollenstein, Allen, & Sheeber, 2016). Research in the area of parental CDS has focused mainly on the dyadic context (Menashe & Atzaba-Poria, 2016; Rowe et al., 2004; Rowe, 2008; Tamis Le-Monda et al., 2012a, b). This disregards the evidence that children acquire language not from two independent contributors but via the shared experience created by interdependent communications (Renzi, Romberg, Bolger, & Newman, 2017).

While some early work offered comparisons of parents' child-directed speech across dyadic and triadic contexts (Golinkoff & Ames, 1979; Hladik & Edwards, 1984), few studies in recent years have examined context-dependent variability in mothers' and fathers' CDS. Similar to parents' play behaviours, it is important to note that when examining parental CDS in a triadic context, the interactions of one parent with the child can be constrained or influenced by the interactions of the other (Pancsofar, Vernon-Feagans, Odom & Roe, 2008). For instance, Bingham, Kwon, & Jeon (2013) reported that while both mothers and fathers produced fewer utterances in the triadic context, the difference was significantly greater for fathers.

However, we know relatively little about whether such trends would be observed in relation to the communicative functions of parental CDS. For instance, would a dyadic context offer a more intimate interactional environment that evokes more supportive and collaborative parental CDS? Would a triadic context that involves more interactive participants provide fewer opportunities for parents to use speech that facilitates conversation in children? Given that parents engage with children in the presence of each

other as well as in one-to-one interactions, an examination of the contextual influences on parental CDS will provide a more ecologically valid understanding of the family linguistic environment.

Research indicates that the communicative functions of CDS vary as a function of parent gender. The majority of this research, with the exception of Pancsofar and Vernon-Feagans's (2006) study, suggests that fathers consistently use more questions than mothers (Leaper, Anderson, & Sanders, 1998; McLaughlin, White, McDevitt, & Raskin, 1983). For instance, Rowe et al. (2004) found that fathers placed more linguistic demands on their toddlers by asking significantly more questions than mothers. The authors suggest that such use of facilitative speech led to toddlers assuming more communicative responsibility. Findings are more mixed in relation to parental CDS that limits children's engagement in conversation. For instance, Brachfeld-Child, Simpson and Izenzon (1988) and later Goldberg et al. (2002) found fathers to be more directive such that they used more commands and prohibitions in their speech directed at children than mothers. Rowe et al. (2004), on the other hand, reported no such differences.

Research on such parental gender effects in relation to gentle guidance and referential CDS is sparse. However, findings from prior research suggest that fathers use more referential speech with toddlers and preschoolers than mothers (Masur & Gleason, 1980). Similarly, a meta-analysis by Leaper et al. (1998) showed that mothers tended to produce more supportive CDS (praise and encouragement, collaborative language) whereas fathers produced more referential speech. Such findings were taken to indicate that mothers and fathers provided gender-typed communicative role models for their children. Overall, this research highlights some important ways in which mothers' and fathers' speech

functions can differ. However, we have little understanding about whether these observed gender differences can interact with the context (dyad versus triad) in which play occurs which is likely to give us unique insights into family functioning and child linguistic development.

Coparenting dynamics in relation to parental CDS

An important source of variability in the communicative functions of parental CDS within the triadic play context that has so far received limited attention pertains to the role of the coparenting relationship. Research that has examined associations between family functioning and parental CDS has primarily focused on the couple/marital subsystem. For instance, Cowan and Cowan (1992) examined the influence of marital functioning on parental language input and reported that parents who were more satisfied in their marital relationship produced longer utterances in their interactions with toddlers. Brody, Pillegrini and Siegel's (1986) study, although conducted in a non-play context and with a sample of older children (five to seven years of age) found that in maritally distressed couples, fathers provided more negative verbal feedback and asked fewer questions in their teaching interactions with children as compared to mothers. Additionally, mothers in distressed marital relationships asked more questions and provided more positive verbal feedback as compared to mothers in non-distressed marital relationships.

Pancsofar, et al. (2008) examined the contributions of marital love and conflict to mothers' and fathers' vocabulary during triadic play interactions with 12-month old infants. Results showed that both mothers and fathers who exhibited higher levels of marital love when children were 12 months of age used more diverse vocabulary to children at 24 months of age. This is in line with the 'spillover' effect (described in an earlier chapter)

which postulates a reciprocal association between the marital and parenting subsystems (Erel, & Burman, 1995; O’Leary & Vidair, 2005).

However, findings from a recent study suggest that a different mechanism may be at play. For instance, Fink, Brown, Kirk, & Hughes (2020) investigated individual variations in parents’ infant-directed speech (with 4-month old infants) in relation to the quality of their couple relationship. The study reported inverse relations between mothers’ infant-directed speech and the quality of the couple relationship. Specifically, maternal reports of couple relationship quality were inversely associated with mothers’ overall word count and initiation of conversational turns with infant sons. This may reflect parents trying to compensate for their poor marital relationship by devoting more time and energy to high-quality parenting (Engfer, 1988).

To our knowledge, only one study has investigated the associations between coparenting dynamics and parental CDS, focusing specifically on the structural indices of parental CDS. Bingham et al. (2013) examined the coparenting relationship in relation to the structural indices of parents’ CDS (total number of words, mean length of utterances, language complexity, language diversity). Coparenting behaviours were measured along five dimensions, namely: (1) coparental cooperation (the extent to which parents worked together as a team and supported each other’s interactions with the child); (2) warmth (the extent to which parents exhibited positive affect towards each other in relation to the child’s behaviour); (3) verbal sparring (exchange of hostile/sarcastic comments between parents); (4) competition (interfering with one another’s interactions with the child) and, (5) balanced involvement, (proportion of time each parent interacted with the child at the same time as the partner). Results showed that when mothers and fathers were equally

involved in interacting with the toddlers (balanced coparental involvement) in the triadic context, fathers produced more complex language. This was suggested to reflect equally shared responsibilities between mothers and fathers and an indication of mothers' implicit support for fathers' involvement; this, in turn, created more opportunities for fathers to produce more complex language.

In light of these findings, it is important to understand whether such coparenting effects also apply to the communicative functions of parental CDS. For instance, one might expect that coparenting relationships characterised by more supportive behaviours create opportunities for parents to communicate with toddlers in more supportive ways (e.g. using more gentle strategies for guiding toddlers' behaviours during play, asking more questions to toddlers to allow them to express themselves). When parents share a supportive coparenting relationship, they feel more competent in their parenting roles, which enables them to engage with their toddlers. It is also likely that a supportive coparenting context might promote a positive emotional environment which increases the likelihood of parents using speech that support toddlers' engagement in discourse. Conversely, more undermining coparenting dynamics can have a detrimental impact on the way parents communicate with their children which, in turn, can adversely affect toddlers' linguistic competencies. However, given that research indicates the presence of compensatory effects in other family subsystems (e.g. marital subsystem), there is a need to look more closely into how observed coparenting dynamics can relate to the communicative functions of parents' CDS in the second year of life.

The Current Study

Drawing upon the literature reviewed and research gaps identified so far, the main objective of the current thesis is to contribute to and build upon the existing body of knowledge on the coparenting subsystem. Specifically, the research aims to: (i) develop a better understanding of the coparenting construct by assessing factors that can potentially influence the quality of this family subsystem and determine its stability across the early stages of child development, (ii) examine the role of coparenting in parental play behaviours and toddlers' socio-emotional competencies. The empirical investigations that are conducted for addressing these aims are outlined and discussed below.

Study 1

The main aim of study 1 is to examine the role of different factors that can modify the dynamics of observed supportive and undermining coparenting. Specifically, the study takes into consideration toddler and parent characteristics and attributes such as toddler gender and temperament, parental age and education, parents' dyadic adjustment, parenting stress and parental sense of competence. As discussed in an earlier section of this chapter, although there is growing interest in this line of investigation, there are currently only a handful of empirical studies that have contributed to an understanding of the factors affecting this important family subsystem. Given that the coparenting relationship plays a more important role in child development than the couple's marital relationship, it is vital to develop a better understanding of the factors that can affect the quality of this relationship.

Study 2

The main aim of study 2 is to determine the stability of observed coparenting supportiveness and undermining from toddlerhood to the preschool years. Although there are a handful of studies that have examined the stability of coparenting from infancy to toddlerhood, relatively little is understood in relation to coparenting stability beyond these developmental stages. Additionally, given that the focus of the coparenting relationship is the child, it is likely that the child's characteristics, particularly the child's temperament, will influence the stability of the dynamics between coparents. There is a dearth of literature in this area and studies that have assessed the role of child temperament have primarily focused on difficult temperamental traits. The role of other, more positive, domains of temperament has rarely been included in investigations. This study, thereby, not only contributes to a growing body of research in this area but also provides a more comprehensive understanding of the role of broader domains of child temperament in coparenting dynamics.

Study 3

As evident in the literature, parent-child play is frequently employed as an interactional setting for examining coparenting dynamics. While research has examined contextual and parental gender-based variations in parental *practices* and *styles* observed during play with children (e.g. positive and negative parenting; Kwon et al. 2012), not much attention has been devoted to investigating similar variation in parental play behaviours. As discussed earlier in the chapter, parent-child play serves a host of functions for toddlers' emerging social and emotional competencies. Parents' play behaviours can range from talking about the object of interest to using that object in creative or imaginative ways or even observing the child play with the toy. Each of these behaviours

can be supportive if used in ways that are sensitive to the toddlers' developmental needs and interests and serve a purpose that facilitates toddlers' social and emotional skills in the play interaction.

The current research, therefore, conceptualized parental play as comprising three mutually exclusive behaviours, namely: (i) toy play, defined as parental exploration, handling or physical manipulation of toys; (ii) verbal facilitation of play, defined as parental guidance of toddlers' play using only language, and; (iii) observation, defined as parental observation of toddlers' play. Parental exploration, physical manipulation of toys and modelling of play strategies (using toys in functional or symbolic ways) can provide the toddler with rich opportunities for social interactions and social communication. Directing the toddlers' attention to the object by touching or operating the toy facilitates toddlers' self-regulation skills and inhibitory control (Ruff, 1986). Talking about the toy and guiding toddlers' play through language can also help sustain toddlers' attention on the play activity. Toddlers' attempts to respond to a parental bid for attention (e.g. pointing and saying "look at that toy/ what colour is this toy?") can not only help in sustaining their attention but also provide them with opportunities to engage in discourse and to explore the toys themselves. Observing toddlers' play can also serve important functions such as preventing toddlers from being overwhelmed by more experiences and activities than they can cope with.

As discussed earlier, parents play behaviours can vary on the basis of the context in which the interaction occurs and parents' gender which can have important implications for toddlers' socio-emotional development. However, currently, there is a dearth of research in this area. Based on the family systems perspective, Study 3 aims to address this gap by (i)

examining the role of context and parents' gender in parental play behaviours, and (ii) understanding the role of coparenting in the association between parental play behaviours and toddlers' socio-emotional development in the triadic context.

Study 4

This study focused on the content of parents' speech directed at the toddler during play. Parental speech during play serves many functions ranging from requesting information from the toddler, directing their behaviours and attention, and encouraging familiarization with new objects or events in the play environment. This study examined four mutually exclusive communicative functions of CDS, namely: (i) facilitative speech characterized by parental use of questions seeking information from the toddler (e.g. *what do you want to play next?*); (ii) directive speech characterized by parental use of commands and prohibitions that direct and regulate toddlers' behaviours and attention (e.g. *don't throw the toys*); (iii) gentle guidance characterized by parental use of praise and words of encouragement to motivate toddlers (e.g. *good job getting the toys out*), and; (iv) referential speech characterized by parental use of speech that helps to orient the toddlers' attention to the characteristics of toys (e.g. *that's a blue car*) and events (e.g. *we are playing now*) in the play environment.

Similar to play behaviours, parents' CDS can vary on the basis of the context in which the interaction occurs and parental gender. While a handful of studies have shown how the structural indices of parental CDS can vary according to the interactional context, not much is known in relation to the functional aspects of CDS. Additionally, although there is ongoing debate as to whether the communicative functions of parental CDS differ between mothers and fathers (e.g. do fathers ask more questions than mothers?), there are

fewer empirical investigations in this area in comparison to those examining how the structural properties of CDS vary according to parent gender.

Moreover, while studies have looked at the role of the couple's marital relationship in CDS, there is a dearth of literature that looks at coparenting as a factor that can influence parental CDS. Thus, based on the family systems perspective, this study aims to address these gaps in the literature by (i) examining the role of context in the communicative functions of mothers' and fathers' CDS and (ii) understanding the role of coparenting in the communicative functions of CDS and examining how those functions contribute to toddlers' linguistic competencies. Toddlers' linguistic competencies were included in this study because there is ample evidence to show that toddlers' social and emotional development is largely dependent on their ability to effectively communicate their needs (Cole et al., 2010; Eisenberg et al., 2005; Roben et al., 2013).

Study 5

The main aim of study 5 is to develop novel insights into the role of coparenting dynamics in toddlers' adaptive skills. Toddlers' adaptive functioning has rarely been examined as a developmental outcome and to our knowledge, there is no study that has examined the coparenting relationship in relation to such important skills. Given that this thesis focuses on toddlers' social and emotional development, this study takes into consideration the adaptive skills that are required for establishing and maintaining social relationships, regulating behaviours and emotions, following rules and regulations and communicating needs. These are important life skills that are needed for living independently and functioning well in daily life. In the absence of prior knowledge of any associations between coparenting and adaptive functioning, this study examines direct links

between the two using a combination of perceived (self-report) and observed coparenting dynamics. This study introduces a new line of investigation that has the potential to inform and advance both theory and empirical knowledge of the growing but still comparatively young field of coparenting research.

Chapter 3

Method

Study design overview

Studies in the current thesis use structured observational methods for capturing parent-child interactions. Observational methods are considered to be the gold standard approach for examining family dynamics and processes and are invaluable for capturing the more nuanced elements and mechanisms of parental and coparental subsystems. They provide a window into group-level dynamics that exemplify family efforts to function and cope as a unit (Tissot, Kuerston-Hogan, Frascarolo, Favez, & McHale, 2018). The automatic and fast-moving behaviours, characteristic of family relationships, seen during observations may be hard for participants to access using only self-reports (Gardner, 2000).

Mothers and fathers in the current investigation were observed interacting with their toddlers and preschoolers in a university laboratory observation room during structured (complete a puzzle) and semi-naturalistic free-play activities. Parents were requested to play with their children alone (one parent and child) as well as together (both parents and child). The play observation room was equipped as a child-friendly room. Two wall-mounted cameras were positioned unobtrusively for capturing naturalistic parent-child play interactions. During the parent-child interactions, researchers and research assistants remained in the control room which was equipped with a one-way glass window to minimize observer effects. Additionally, parents were requested to complete a battery of questionnaires on themselves, their children and their family functioning. Direct assessments of children's development (language, cognitive, motor development, IQ) using

standardized age-appropriate tests were also carried out by trained research assistants and researchers working in the laboratory.

Participants

Families in the current thesis comprised seventy-seven full-term born, typically developing toddlers aged between 21 to 27 months (38 females: $M = 24.09$, $SD = 1.36$) and their biological cohabiting parents. Mothers were aged between 25 to 48 years ($M = 34.07$, $SD = 6.99$) and fathers aged between 23 and 55 years ($M = 34.90$, $SD = 8.77$). Data were also collected from the families at a later timepoint (Wave 3; Please refer to the procedure section below) when the children were older and aged between 48 to 60 months. Families were recruited through social media, crèches, parenting forums and participant panels and snowballing to participate in a larger longitudinal study on parent-child interaction. All participating families were White, monolingual (Irish-English), residing in the family home with the majority of mothers and fathers were in full-time employment.

Owing to the variable sample sizes resulting from missing and excluded data, the sample size, sample statistics and other details pertaining to the missing/excluded data, have been detailed separately in each individual study.

Procedure

The studies in the current thesis received full approval from the local ethics review committee and written parental consent was sought from all participating families prior to testing. Families were requested to visit the university laboratory at three different time points (waves): Wave 1 (child aged between 21 to 36 months), Wave 2 (child aged between 36 to 48 months) and Wave 3 (child aged between 48 to 60 months). Data for the studies in this thesis primarily came from Wave 1 (cross-sectional investigations) with one

longitudinal study that used data from Wave 1 and Wave 3. Each lab visit consisted of a developmental assessment with the child, (carried out by a trained research assistant working in the laboratory), parental measures (questionnaires pertaining to the study goals) and video-recorded observations of dyadic and triadic parent-child interactions. All interactions were recorded and coded using the Mangold VideoSync Pro 1.5 INTERACT software. Families were offered breaks when needed and each session lasted between 2 hours 30 minutes to 3 hours. At the end of the visit, parents were debriefed and thanked for participating.

Wave 1

At Wave 1, families were invited to the lab for the assessment when the children were aged between 21 to 36 months. All seventy-seven families in the current thesis had toddlers aged between 21 to 27 months ($M = 24.09$, $SD = 1.36$). At first, triadic (mother-father-toddler) parent-child interactions were recorded. In the triadic free-play task, a box containing an assortment of toys (blocks, toy cars, ball, Mr. Potato Head) designed to elicit creativity, humour and imagination were provided to the families who were then requested to play with them as they normally would at home. In the structured-play task, both parents and toddler were presented with a teddy bear skills puzzle board. The board consisted of 6 removable pieces each related to a specific dressing skill including tying, zipping, buckling, snapping, buttoning and lacing. Once each piece had been worked through, they were to be replaced into the correct slots to finish dressing the bear. For these structured-play tasks, parents were requested to try and help their child complete as many parts of the board as possible. Both free-play and structured-play tasks lasted for 5 minutes each.

Following the triadic free and structured-play interactions, either the cognitive or the language part of a developmental assessment was carried out with one parent (e.g. mother) in the room with the toddler while the other parent left to complete a battery of questionnaires. After this, the dyadic parent-child interaction was recorded during a free-play and structured-play task. A short break was provided if needed. After this, the second part of the developmental assessment was carried out with the second parent in the room with the toddler, following which the dyadic parent-child interaction was recorded during a free-play and structured-play task.

The free-play task in the dyadic context was the same as that in the triadic context. In the structured dyadic interaction, magnetic puzzle boards of either a fish or car design were presented to the parent (counterbalanced) and toddler. The magnetic puzzle consisted of a stick with a magnet attached to the end resembling a fishing rod and a board consisting of ten puzzle pieces. The task required the toddler to use the magnetic fishing rod to pull out each of the ten pieces from the board. Once each piece had been pulled out, the toddler was required to replace each piece into the correct slots. Although the structured-play tasks differed for the dyadic and triadic interactions they were selected to be equally challenging. Both free-play and structured-play tasks lasted for 5 minutes each.

The order of the dyadic sessions was counterbalanced with 50% of the interactions beginning with either the mother-child dyad or the father-child dyad. Parents and children were seated on a play mat provided in the play observation room. The interactions were recorded once the research assistant left the room.

Different play contexts (free-play and structured-play) were selected as it is likely that the toys in each task elicit specific types of parental behaviours and child-directed

speech that serve different functions and attain different interactive goals. For instance, free-play interactions in most studies are designed to include toys that are mutually enjoyable for parents and children (Kwon et al., 2012; Volling et al., 2002) and that allow more opportunities for sharing of positive emotions and behaviours. The free-play context, as such, can provide rich information on how such mutually joyful interactions can contribute to toddlers' social and emotional development.

Additionally, research indicates that parents use more speech acts that provide or seek information from children (about the toys in the interaction) in less-structured play contexts whereas parents in the structured-play contexts provide more directives and action requests (Ryckebusch & Marcos, 2004). While free-play contexts facilitate toddlers' engagement in discourse, research indicates that parents tend to interact more with young children in the structured-play context with the aim of preparing children for school (Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009). The structured-play context, as such, needs to be examined further in relation to parents' child-directed speech and toddlers' developing linguistic competencies.

Wave 3

The third lab assessment was carried out when the children were aged between 48 to 60 months (13 females: $M = 52.62$, $SD = 3.75$). At first, triadic parent-child interactions were recorded followed by dyadic interactions. In the triadic interaction, parents and children were once again seated on a mat in the playroom and a structured task was assigned to them. During the structured play task, families were provided with a magnetic construction set with an instruction leaflet for different construction designs. The magnetic

pieces connect to create different 3D shapes, houses, towers and more. The families were asked to pick a design out of any four options and help their children build it.

Following this, a developmental assessment was carried out with one parent in the room (counterbalanced) while the other parent left to complete a set of questionnaires. A short break was provided after this. After the break, dyadic parent-child interactions were recorded during a structured-play task. The structured play tasks differed for the dyadic interactions. In the first dyadic interaction with parent 1 (counterbalanced), the parent and the child played with a set of interlocking bristle blocks used for building different objects and structures. Following this, a series of tasks related to the child's executive functioning is carried out by trained researchers and research assistants with parent 2 present in the room and parent 1 was asked to fill out study-related questionnaires. After this, the second dyadic interaction with parent 2 was observed in which the parent and the child played with a different building set called Kid K'Nex. Families were then debriefed and thanked for participating in the study. Given that the longitudinal study in this thesis focused on the stability of coparenting dynamics, only the data collected from a 5-minute triadic parent-child structured-play interaction episode was used (A summary of the tasks at Wave 1 and Wave 3 are outlined in Table 3.1). The rate of attrition from Wave 1 to Wave 3 was 68.83%. A series of independent t-tests and chi-square tests showed that families who participated in the study at both time points did not differ significantly from the families who did not return on follow-up on measures of parental education and child temperament.

Measures

Battery of questionnaires

The following is a detailed description of the battery of questionnaires completed by parents in the study

Socio-demographic data. Both parents provided information about their age, education level, their child's age and gender.

Perceived coparenting. Mothers' and fathers' perceived coparenting relationship was assessed using the Coparenting Relationship Scale (CRS) (Feinberg, Brown, & Kan, 2012). Both overt coparenting (exhibited by a parent within a triadic interaction) and covert coparenting (exhibited by parent when interacting alone with the child) dynamics are assessed by the scale. The CRS is a self-report measure comprising 35 items divided into 7 subscales. The coparental support subscale comprises six items that assess each parents' perception of coparental support, encouragement and appreciation from the other parent (e.g. *my partner appreciates how hard I work at being a good parent*). The undermining subscale comprises six items that assess each parents' perception of their partners' use of criticism, disparagement and blame (e.g. *my partner sometimes makes jokes or sarcastic comments about the way I am as a parent*).

The endorsement of partners' parenting subscale comprises seven items that assess each parents' positive attitude towards their partners' parenting (e.g. *I believe my partner is a good parent*). The exposure to conflict subscale comprises five items that assess parents' disputes on childrearing issues in the presence of the child (e.g. *how often in a typical week, when all 3 of you are together, do you argue with your partner about your child, in the child's presence?*). The coparenting agreement subscale comprises four items that assess coparental agreement on childrearing issues (e.g. *my partner and I have the same goals for our child*). The coparenting closeness subscale comprises five items that assess

the extent to which parents grow and mature together in their parental roles (e.g. *my relationship with my partner is stronger now than before we had a child*). The division of labour subscale comprises two items that assess the extent to which the couple are satisfied in the distribution of their childcare-related tasks (e.g. *my partner likes to play with our child and then leave the dirty work to me*).

The frequency scale ranges from 0 (*not true of us*) to 6 (*very true of us*). Given that the primary focus is on the supportive and undermining domains of the coparenting relationship, and to facilitate comparison with the same domains of the coparenting relationship, only the coparental support, coparental undermining and endorsement of partners' parenting subscales of the CRS were included in the analyses. Higher scores on these three subscales indicate greater coparental support, undermining and endorsement of partners' parenting. The CRS has been found to demonstrate excellent internal consistency with Cronbach's alphas ranging from .91 to .94 (Feinberg et al., 2012). Internal consistency (Cronbach's alphas) as determined in the current study for the three subscales for mothers were .83 (coparental support), .74 (coparenting undermining) and .44 (endorsement of partners' parenting). Internal consistency (Cronbach's alphas) as determined in the current study for the three subscales for fathers were .89 (coparental support), .86 (coparenting undermining) and .64 (endorsement of partners' parenting).

Dyadic adjustment. A couple's dyadic adjustment (couple relationship quality) was assessed by the Dyadic Adjustment Scale (DAS; Spanier, 1976). This is a 32-item self-report measure that assesses marital satisfaction along the dimensions of dyadic consensus, dyadic satisfaction, affectional expression and dyadic cohesion. Dyadic consensus is assessed by 13 items and is reflected by the extent to which couples agree or disagree on a

number of issues. Dyadic satisfaction is assessed by ten items and relates to the extent to which couples feel satisfied with each other and how they resolve disagreements and quarrels. Affectional expression is assessed by four items and is reflected by the degree of couple agreement regarding emotional affection. Dyadic cohesion is assessed by five items and is reflected by the degree to which couple engage in positive interactions and participate in activities together. The scale consists of variable item ratings. Ratings of agreement range from 0 (always disagree) to 5 (always agree). Ratings of frequency range from 0 (never) to 5 (all the time), from 0 (never) to 4 (everyday), or from 0 (never) to 5 (more often). Quantitative ratings range from 0 (none of them) to 4 (all of them). Dichotomous ratings range from 0 (yes) to 1 (no). Scores obtained from all four subscales are added to provide a total DAS score. The total score ranges from 0 to 151 with higher scores indicative of greater marital distress (Spanier, 1976). The total DAS and the subscales scores have an acceptable level of reliability with alphas ranging from .71 to .91 (Graham, Liu, & Jeziorski, 2006). Internal consistency (Cronbach's alphas) as determined in the current study for the four subscales ranged between .70 to .89.

Parenting stress. Parenting stress was assessed by the Parenting Stress Index (PSI; Abidin, 1983). The PSI is a 101-item questionnaire that is designed to identify dysfunctional parent-child systems. It comprises four subscales, Parental Distress (PD), Parent-Child Dysfunctional Interaction (PCDI), Difficult Child (DC) and Defensive Responding (DR), and can be completed by parents of children aged between 1 month and 12 years. A Total Stress (TS) scale is also included in the PSI. PD is reflected by the extent to which parents feel conflicted, restricted, depressed or supported in their roles and parents. PCDI is reflected by the extent to which parents feel satisfied with their child and

their interactions with them. DC pertains to parents' perceptions of their child and how easy/difficult it is to take care of them. The DR scale was included to identify defensive answers by parents. Exceptionally low levels of stress are indicative of defensive responding. This scale, however, is not included in the Total Stress score.

TS score indicates the overall level of stress experienced by individuals in their role as a parent. As per the norms, scores that fall between the 15th and 80th percentiles are indicative of normal levels of stress, scores between the 81st and 84th percentiles indicative of high stress whereas scores above the 85th percentile are indicative of borderline clinically significant parenting stress. The PSI is one of the most common measures of parenting stress and the measure has been found to have high internal consistency (Abidin, 2012). High test-retest reliability estimates ranging from .78 to .90 have been reported for the subscales (Abidin, 2012; Roggman, Moe, Hart, & Forthun, 1994). Internal consistency (Cronbach's alphas) as determined in the current study for the four subscales ranged between .79 to .87.

Parental sense of competence. The Parenting Sense of Competence Scale (PSOC; Gilbaud-Wallston, & Wandersman, 1978) is a 16-item self-report instrument used to assess parents' self-efficacy and satisfaction in their parenting roles. The questionnaire has a 6-point scale ranging from strongly agree (6) to strongly disagree (1). Self-efficacy which refers to parents' competence and capability in their parental role was assessed by nine questions. Parental satisfaction which refers to parents' motivation, anxiety and frustration in their roles as parents was assessed by seven questions. Higher scores indicate a higher parenting sense of competence. The tool has no average of 'cut-off' scores. In a review of the role of parental self-efficacy, Jones and Prinz (2005) identified the PSOC as the most

commonly used tool for measuring parenting sense of competence. Evidence indicates acceptable internal consistencies for the two subscales for mothers (.72) and fathers (.76) (Gilmore & Cuskelly, 2008). Internal consistency (Cronbach's alphas) as determined in the current study were .77 and .79 (for mothers) and .79 and .80 (for fathers).

Toddlers' temperament. Toddlers' temperament was assessed by the Early Childhood Behaviour Questionnaire (ECBQ) (Goldsmith, 1996). The ECBQ consists of 201 items and 18 scales and is completed by parents of children aged between 18 to 36 months and provides a more comprehensive assessment of temperament than other existing measures (Putnam, Gartstein, & Rothbart, 2006). On the basis of a principal axis factor analysis conducted by Putnam et al. (2006), three factors were extracted. One factor represented Negative Affectivity which included high factor loadings for the scales of Discomfort, Fear, Sadness, Frustration, Soothability (negative loading), Motor activation, Perceptual Sensitivity, and Shyness. Negative affectivity is associated with a child's tendency to react to stimuli with anger, frustration, sadness or fear. The second factor represented Surgency which included high factor loadings for the scales Impulsivity, Activity Level, High-Intensity pleasure, Sociability and Positive Anticipation. Surgency is a dimension of temperament associated with expressions of high activity levels, impulsivity, high levels of pleasure-seeking and low shyness. The third factor represented correlated with Effortful Control and included high factor loadings for Inhibitory control, Attention shifting, Low-Intensity pleasure, Cuddliness and Attention Focusing. Effortful control is characterised by the ability to self-regulate emotions and behaviours as well as inhibit behavioural responses. On the basis of the analysis, factor scores were created by averaging the scores on the primary loading scales. Putnam et al. (2006) provided evidence

of adequate internal consistencies (DeVellis, 1991) for all the scales with the alpha coefficients ranging from .60 to above .80. Internal consistency (Cronbach's alphas) as determined in the current study for the scales ranged between .61 to .83.

Bayley Scale of Infant Development- 3rd Edition (BSID-III) (Bayley 2006).

Toddlers' development was assessed by the BSID-III. The BSID is an individually administered standardised instrument that assesses the developmental functioning and competencies of infants and toddlers (aged between 1 to 42 months). The instrument assesses the developmental competencies across five domains namely, (i) language, (ii) cognitive, (iii) motor, (iv) socio-emotional and (v) adaptive functioning. The current study utilizes data from the language, socio-emotional and adaptive skills assessments.

Socio-emotional development. Toddlers' socio-emotional development and adaptive functioning were assessed via maternal reports as previous research supports its predictive validity for later child development outcomes as compared to others' reports (Kwon et al., 2013). The socio-emotional scale focuses on the achievement of social and emotional milestones assesses toddlers' skills pertaining to their self-regulation capacities and their interest in the world, including the ability to communicate needs, engage others and establish relationships, use a range of emotions in an interactive and purposeful manner and use emotional signals and gestures to solve problems. The scale takes approximately 10-15 minutes to complete. Prior evidence of a very good level of internal consistency reliability was estimated from the coefficient alphas which ranged from .76 to .91 (Bayley, 2006a).

Adaptive functioning. The adaptive functioning questionnaire assesses children's adaptations and skills required for meeting the demands of daily life. This study focused on

three areas of adaptive skills measured by this scale: *communication*, *social* and *self-direction*. Social skills pertain to the child's ability to establish social relationships with others, recognise emotions in others, use manners and help others. Self-direction skills pertain to the toddlers' ability to self-control/self-regulate and control their environment, solve problems independently, follow rules and adapt to the demand of a given situation. Communication skills pertain to the child's ability to use speech meaningfully, understand language and engage in meaningful verbal and non-verbal interactions with parents, peers and other adults.

The remaining areas measured by this scale pertain to toddlers' abilities to engage in other recreational activities, feed and dress themselves, look after personal possessions, recognise letters, count and draw simple shapes and move around and manipulate the environment. Mothers responded to a total of 241 items that assessed toddlers' adaptive skills in the above-mentioned areas. These responses/ratings are based on mothers' previous observation of their toddlers' adaptive skills. Ratings are on a four-point scale and include the following options: 0 = not able to do it, 1 = able yet never does it when needed, 2 = does it sometimes when needed and 3 = does it always or almost always when needed. The average reliability coefficients across all skill areas range between .79 and .90 (Albers, 2007).

All items on the socio-emotional and adaptive functioning subscales are tallied which gives the raw scores for each subscale. The raw scores are converted into norm-referenced scaled and composite scores which reflects the toddler's performance on each developmental domain relative to their same-age peers. The scaled scores have been used in the current study.

Direct assessment

Toddlers' expressive and receptive language. Trained research assistants administered the language (expressive and receptive language) scale of the BSID during the lab visit. Expressive language skills pertain to the toddlers' ability to use words and language to label objects, express themselves and communicate their needs. Receptive language skills pertain to the toddlers' ability to understand vocabulary, grammar and tenses. The average reliability coefficients range for the expressive and receptive subtests range from .86 to .91 (Albers, 2007). Similar to the socio-emotional and adaptive functioning subscales, all items on the language subscales are tallied which gives the raw scores for each subscale. The raw scores are converted into norm-referenced scaled and composite scores which reflects the toddler's performance on each developmental domain relative to their same-age peers. The scaled scores have been used in the current study.

Coding of video-recorded observations of parent-child interactions

The following is a detailed description of the coding schemes designed, adapted and used for examining coparenting dynamics and parental play behaviours. This section also details the transcription procedure and coding scheme for examining the communicative functions of parental CDS and toddlers' speech output.

Observed coparenting dynamics

Coparenting quality during the structured-play and free-play sessions were assessed globally using a five-point scale (ranging from very high to very low) originally developed by Cowan and Cowan (1996) and used in later research focusing on coparenting behaviours (Schoppe-Sullivan et al., 2004; Schoppe-Sullivan et al., 2009). Six coders received in-person training from Prof. Schoppe-Sullivan (School of Psychology, TCD,

2018) on the use of this coding scheme. Supportive coparenting was indexed by scales that measured the level of cooperation, warmth and pleasure. Coparental *cooperation* “reflects the degree to which parents help and support one another in teaching and playing with the child” (Schoppe-Sullivan, 2017, p. 1). A high score is assigned if, for example, one parent holds down a toy for the other parent to physically manipulate or model play strategies to the child.

Coparental *warmth* refers to the extent to which “one parent demonstrates affection and positive regard for the other; laughing, touching, smiling, saying nice things to each other. Parent attempts to involve the other in the interaction – a connection is felt and can be seen between them. Parent provides emotional support, reassurance, and encouragement for the other in an authentic, not sarcastic, manner” (Schoppe-Sullivan, 2017, p. 4). This includes laughing, touching, smiling or saying positive things to each other and providing emotional support to one another. A high score is assigned to a parent if they exhibit continual expressions of warmth or affection (smiling, laughing, touching) towards their partner.

Coparental *pleasure* refers to the extent to which “the parent appears to enjoy sharing and collaborating in the parental role and is able to demonstrate that during the interaction. The partner appears to take pleasure in the other parent’s relationship with the child. They are able to watch comfortably when the other is interacting individually with the baby. The parent displays playfulness and humour with the other about their respective parenting styles/practices and their relationship with the child” (Schoppe-Sullivan, 2017, p. 5). A high score is assigned to a parent if they are very attentive and express continuous joy and appreciation of their partners’ interactions with the child.

Undermining coparenting was indexed by scales that measured the level of competition, coldness and displeasure. Coparental *competition* is when “parents try to outdo each other’s efforts to teach, work, and play with the child. Lower-level competition includes parents using different approaches with the child, but this type of competition seems accidental. At lower and moderate levels, couples lack coordination. But, in couples that receive higher ratings, parents appear to be intentionally competing for the child’s attention” (Schoppe-Sullivan, 2017, p. 1). A high score is assigned when parents are consistently trying to outdo each other’s efforts in interacting with the child so much so that this takes precedence over teaching/helping the child with the task.

Coparental *coldness* is when the “parent seems distant, closed-off, and lacks affection for the other. There is a sense of the parent keeping a distance between his/her partner. This is visible through curtness (shortness), snubbing (ignoring), hostile responses, or a general lack of response towards the other parent’s attempts to engage in interaction” (Schoppe-Sullivan, 2017, p. 4). A high score is assigned to a parent if they do not engage with or appear disinterested or withdrawn from their partner through the majority of the interaction.

Coparental *displeasure* is when “The parent expresses dislike of their partner’s style of interacting with the child either directly or indirectly (sarcasm). This can be a reaction to the positivity or negativity in their relationship. Parents do not enjoy working together” (Schoppe-Sullivan, 2017, p. 5). On the coparental scales of warmth, coldness, pleasure and displeasure, mother and fathers are rated individually. A joint rating is assigned to parents on the scales of coparenting cooperation and competition. A high score is assigned to a

parent if they seem consistently displeased by or are highly critical of their partners' interactions with the child.

Each of the above six coparenting behaviours was coded within each task using this coparenting scale. Higher scores on each scale were indicative of a higher incidence of the specific coparenting behaviour under focus. Following this, given the relatively small sample size, principal component analysis as an extraction method with varimax rotation (using Kaiser normalisation) was performed to reduce the number of variables in the analyses. This was done on the basis of previous reports involving similarly small sample sizes that have adopted this approach (N = 80; Buckley & Schoppe-Sullivan, 2010; N = 92; Schoppe-Sullivan et al., 2009). On the basis of this analysis, two components were identified. Factor 1 (Eigenvalue = 2.64, 44.02% variance) included high factor loadings for warmth (0.89), pleasure (0.949) and cooperation (0.651) and was called Supportive coparenting. Factor 2 (Eigenvalue = 1.75, 28.73% variance) included high factor loadings for competition (0.764), coldness (0.863) and displeasure (0.860) and was called Undermining coparenting.

On the basis of this analysis, the composite variables were created by averaging the component scales. The factor supportive coparenting was constructed by averaging the scores for coparental cooperation, pleasure and warmth. The factor undermining coparenting was constructed by averaging the scores for coparental competition, coldness and displeasure (Buckley & Schoppe-Sullivan, 2010; Schoppe-Sullivan et al., 2009).

Intercoder -reliability. Video recordings of all 77 families at wave 1 were coded for coparenting dynamics. 50% of the videos were double coded by two coders with one of the coders being blind to the study hypotheses. At wave 2, all videos were coded by one

coder. The good reliability scores achieved for the wave 1 data lend confidence to the ratings of observed coparenting dynamics at wave 3 and demonstrate that the ratings are accurate representations of the coparenting dynamics measured. Video recordings of family interactions enable an accurate assessment of the degree of inter-rater reliability by allowing for a precise statistical calculation of different categories of behaviour and events. Inter-rater reliability reports are generated automatically by the INTERACT software tool. An average intraclass correlation coefficient of 0.83 was achieved for the supportive coparenting composite and 0.85 for the undermining coparenting composite indicating a good level of inter-rater reliability (Koo & Li, 2016). All rating disagreements were resolved through discussion. γ coefficients were calculated to assess inter-rater reliability for coparenting cooperation, competition, warmth, coldness, pleasure and displeasure. The γ s were satisfactory and ranged from .75 to .95. All rating disagreements were resolved through discussion.

Parental play behaviours

Parental play behaviours were coded microanalytically using an observational coding scheme designed specifically for this study. While several conceptualisations of parenting styles and dimensions (e.g. authoritative/authoritarian parenting, parental warmth and control) exist, there are few conceptualisations of parental play behaviours as they occur in the context of object play. To date, parental play has been largely assessed on the basis of the extent to which parents display creativity, pretend play, humour during play with children (Atzaba-Poria, Cabrera, Menashe-Grinberg and Karberg, 2014; Cabrera, Karberg, Malin, & Aldoney, 2017). Such assessments are carried out using global rating scales with higher scores indicative of higher levels of pretend play. While the benefits of

examining parental pretend/symbolic play for children's development is well evidenced in the literature, empirical evidence (as reviewed earlier) indicates that parents engage in and exhibit a broad range of play behaviours that go beyond pretend play. Play behaviours ranging from handling/physical manipulation of objects to talking about the object/play activity and looking at the object and observing children's play can be supportive of children's socio-emotional development if used in a responsive manner. The current coding scheme was developed with the goal of capturing each of these frequently exhibited parental play behaviours during play with toddlers. These play behaviours were coded microanalytically with the intention to capture rich and precise data by observing moment-to-moment variations in parental play behaviours. Capturing parental play behaviours at a nuanced level allowed for a more objective understanding of how each behaviour is associated with toddlers' socio-emotional development with minimal reliance on summary judgement. The coding scheme in the current study classified parental play behaviours in terms of duration of time each parent engage in three mutually exclusive behaviours: toy play involving toy touch or toy handling, verbal facilitation (talking only), and observation of toddlers' play. Videos were coded using the Mangold INTERACT software. Seamless events (continuous coding) were created by logging parental play behaviours at all times (i.e. no part was left uncoded) with the onset and offset time for each of the codes during the interaction with no codes overlapping.

The code '*toy play*' was applied only when parents touched the toys, explored the toys themselves, physically manipulated the toys and modelled play strategies to their children. Toy play was frequently accompanied by verbal instructions, commands, questions or commentary.

The code '**verbal facilitation**' was applied in the complete absence of toy play when parents guided the play interaction using only language. Parents provided verbal instructions, commands, commentary and asked questions to facilitate the child's play without touching, handling or exploring the toys themselves. This criterion did not include laughter or sighs.

The code '**observation**' was applied when parents watched their toddlers play in the complete absence of any talk or toy play. Vocalisations in the form of laughter could be present.

The code '**other**' was applied when parents interacted with each other or when they engaged with the toddler in a non-play related exchange (e.g., giving food/water). Given that there were very few instances when the 'other' code was applied, this category was not included in the analyses.

From the series of logged events, the duration of time each parent spent in toy play, verbal facilitation of play and observation of play was computed. One coder coded all the videos while a second coder blind to the hypothesis of the study coded 20% of the videos chosen at random ($\kappa = .84$, 89% agreement). All disagreements were resolved through discussion.

Note: Parental play behaviours and coparenting dynamics in the triadic interactions were rated by two separate teams of coders.

Parents' child-directed speech (CDS)

Parental CDS was transcribed verbatim by trained research assistants using standardised conventions (MacWhinney, 2000), Codes for the Analysis of Human

Language (CHAT). The transcripts were analysed using the Computerised Language Analysis software (CLAN) to determine the total number of utterances produced by parents and toddlers in dyadic and triadic contexts. An utterance was defined as a unit of speech marked by a change in intonation, pause or change in grammatical structure (Miller & Chapman, 2004). Only the parental utterances that were directed to the toddler were analysed as the primary focus was on examining how mothers and fathers conveyed information and meaning to their toddlers and the functions they served (such as inviting them into discourse, directing their actions or guiding their behaviours and describing events and objects during play). Parental speech directed at each other or at the researcher and conversational fillers (e.g. *hmm*, *uh-oh*) were excluded from the total number of utterances produced and from any further analyses.

Following this, proportions of four broad categories of parental CDS were calculated: (1) facilitative speech: all open-ended, yes/no and prompt questions (e.g., *what do you want to do next? do you like this puzzle? what colour is the fish*); (2) directive speech: all commands and prohibitions (e.g., *put the puzzle down; stop throwing the puzzle pieces*); (3) gentle guidance: all suggestions, praise and encouragement (e.g., *maybe we should turn Mr. Bear around and try again; good job getting all the fish out with your stick*) and (4) referential speech: all descriptive and labelling utterances (e.g., *the teddy is feeling cold; this is a pink fish*). Proportions were calculated to account for the amount of each type of speech produced by parents relative to all other types of child-directed speech. The Kappa statistic was used to test inter-rater reliability between two researchers which ranged from .89 to 1 for mothers' speech functions and .86 to 1 for fathers' speech functions.

Toddlers' speech in dyadic and triadic interactions

Toddlers' speech was transcribed verbatim using a standardised format, Codes for the Human Analysis of Transcripts (CHAT) and the transcripts analysed using CLAN to determine the total number of utterances produced (A summary of the measures used at Wave 1 and Wave 3 are outlined in Table 3.1).

Table 3.1

Overview of parent and child measures, interaction tasks and coding of parental behaviours for Wave 1 (21- 27 months) and Wave 3(48-60 months) lab visits

Measures			Tasks		Coding	
Wave 1	Parent	Toddler	Triad (First interaction)	Dyad (Second interaction)	Behaviours	Coding scheme
	Coparenting Relationship Scale (CRS)	BSID-III- Socio-emotional Scale (parent-report)	Structured-play Teddy bear skills puzzle board	Structured-play Magnetic puzzle board-Fish design (Parent 1)	Observed coparenting dynamics	Coparenting Coding Scheme (Schoppe-Sullivan, 2017)
	Dyadic Adjustment Scale (DAS)	BSID-III- Adaptive functioning Scale (parent-report)	Free-play Box containing an assortment of toys (blocks, toy cars, ball, Mr. Potato Head)	Structured- play Magnetic puzzle board- Car design (Parent 2) [Dyadic interactions counterbalanced]	Parental play behaviours	Coding scheme designed specifically for this study
	Parental Sense of Competence (PSOC)	ECBQ - Temperament (Parent report)		Free-play Box containing an assortment of toys (blocks, toy cars, ball, Mr. Potato Head)	Communicative functions of parents' CDS	Coding scheme designed specifically for this study
	Parenting Stress Index (PSI)	BSID-III- Language Scale (direct assessment)				
Wave 3			Structured-play Magnetic building blocks set		Observed coparenting dynamics	Coparenting Coding Scheme (Schoppe-Sullivan, 2017)

Chapter 4

Study 1. Contributions of child and parent characteristics, couple dyadic adjustment and parental functioning to observed coparenting dynamics

Abstract

This study examined individual and family characteristics associated with the observed coparenting dynamics of seventy-seven parents with 21 to 27-month-old toddlers (38 girls, 37 boys) during a triadic free-play interaction. Mothers reported on family demographics and child temperament. Both mothers and fathers reported on their dyadic adjustment, parenting stress and parental sense of competence. Parents' age was found to be a significant correlate of coparenting dynamics such that in families with older mothers and fathers, less supportive coparenting dynamics were observed. Additionally, fathers' parental sense of competence was significantly positively associated with supportive coparenting dynamics. These results point to the individual characteristics of family members and paternal functioning as being important to the processes involved in family functioning and the results have been discussed in terms of their implications for the study of family relationships, family theory and practice.

Introduction

Given that the majority of the empirical work on parenting has addressed the individual behaviours of mothers and fathers, knowledge about the factors that contribute to coparenting behaviours is still very limited. The contributions of individual characteristics and attributes and family-level influences have been clearly established in relation to parenting behaviours and parent-child relationships and child development (Cummings, Goeke-Moray, & Raymond, 2004; Ponnet et al., 2012; Rowe, Denmark, Harden, & Stapleton, 2015). However, given that the coparenting relationship is identified as a distinct family subsystem, the factors that shape parenting behaviours may not be the same as those that shape coparenting dynamics (Lindsey et al., 2005). Identifying the factors that shape the coparenting relationship, thereby, provide new insights into family functioning.

Individual characteristics of parents and children have been proposed as factors that are likely to play an important role in shaping coparenting dynamics. The contribution of individual characteristics such as child gender and temperament have been analysed in a few empirical studies, but the findings are mixed. While some findings indicate that child characteristics make significant contributions to coparenting dynamics, others suggest otherwise (Bronte-Tinkew, Horowitz, & Carrano 2010; Lindsey et al., 2005; Margolin et al., 2001; Schoppe-Sullivan et al., 2007; Van Egeren, 2004). In addition to child characteristics, parents' own characteristics such as age and education levels are also likely to influence the coparenting relationship however research in this area is very limited and findings are mixed (Gable et al., 1995; Stright & Bales, 2003).

Additionally, family-level influences such as the couple's dyadic adjustment are proposed as one of the most important influences on coparenting dynamics (Kitzmann, 2000). Minuchin (1974) suggested that in non-distressed families, strong dyadic adjustment allows for a more supportive coparenting relationship wherein mothers and fathers play different but complementary roles (Gable et al., 1995; Russel & Russel 1994). In distressed families, problems in dyadic adjustment can be responsible for more undermining coparenting dynamics (Belsky, Crnic, & Gable, 1995; Gable et al., 1995; McHale, 1995). Such coparenting dynamics in turn are evidenced as being predictive of negative parent-child interactions (Floyd, Gilliom, & Costigan, 1998) and children's behavioural problems (Kolak & Volling, 2013; Latham, Mark, & Oliver, 2017). However, the findings are inconsistent. Not all couples who have distressed marital relationships exhibit negative coparenting behaviours and not all couples who exhibit negative coparenting dynamics have distressed marital relationships (Gable et al., 1995; McHale, Lauretti, Talbot, & Pouquette, 2002; Russell & Russell, 1994).

In comparison to the couples' dyadic adjustment, much less attention has been devoted to understanding the associations between parental functioning and the coparenting relationship. Parental functioning such as parenting stress and parenting sense of competence are factors that have recently been investigated in relation to coparenting dynamics. It might be expected that higher parenting stress will be associated with less supportive and more undermining coparenting dynamics. In addition, it is likely that a higher parental sense of competence will be associated with more supportive and less undermining coparenting. However, given that research indicates that such associations can vary on the basis of parent gender (Favez et al., 2016), further research is warranted.

The main goal of the current study was to examine the contributions of child and parent characteristics such as child gender, parent age and education, child temperament (negative affect, surgency and effortful control), dyadic adjustment and parental functioning (parenting stress and sense of competence) to observed supportive and undermining coparenting dynamics within a triadic free-play interaction with toddlers.

Method

Participants

Study 1 comprised seventy-seven families with toddlers whose mothers were aged between 25 to 48 years ($M = 34.07$, $SD = 6.99$) and fathers aged between 23 and 55 years ($M = 34.90$, $SD = 8.77$). Among mothers, 16% had completed second-level/third level non-degree education, 78.6% had a bachelors/master's degree and 5.4% had a doctoral degree. Among fathers, 5.2% had completed second-level education, 26% had completed second-level/third level non-degree education, 55% of fathers had a bachelors/master's degree and 3.8% had a doctoral degree. The percentage of missing data for the variables are (1) 2.59% for toddlers' temperament (all three domains), (2) 23.37% for mothers' reports of dyadic adjustment and 5.19% for fathers' reports of dyadic adjustment, (3) 14.28% for others' reports of parenting stress and 9.09% for fathers' reports of parenting stress and, (4) 16.88% for mothers' reports of parental sense of competence and 9.09% for fathers' reports of parental sense of competence.

Given the percentage of missing data for each variable and results from data pattern analysis which showed that the data was missing at random (MAR), multiple imputation (5 imputations) was chosen as the preferred method for handling the missing data. Other common methods of handling missing data (list-wise/pairwise deletion) would result in a

significant loss of data and can produce biased results if data are not determined to be missing completely at random (MCAR) (Ginkel, Linting, Ralph, Rippe, & van der Voot, 2020; Kang, 2013).

The percentage of missing data was 2.59. This missing data was due to non-response on questionnaire items relating to couple adjustment and parenting stress.

Procedure

Triadic (mother-father-toddler) parent-child interactions were recorded during a free-play task that lasted for 5 minutes. A box containing an assortment of toys (blocks, toy cars, ball, Mr. Potato Head) designed to elicit creativity, humour and imagination were provided to the families who were then requested to play with them as they normally would at home.

Measures

Socio-demographic data

Both parents provided information about their age, education level, their child's age and gender.

Observed coparenting dynamics

Supportive and undermining coparenting dynamics observed during a free-play session was assessed globally using a five-point scale ranging from very high to very low. Supportive coparenting was indexed by scales that measured the level of cooperation, warmth and pleasure. Undermining coparenting was indexed by scales that measured the level of competition, coldness and displeasure.

Toddlers' temperament

Toddlers' temperament was assessed by the Early Childhood Behaviour Questionnaire (ECBQ) (Goldsmith, 1996). The ECBQ is a valid measure that consists of 201 items and 18 scales is completed by parents to children aged between 18 to 36 months and provides a more comprehensive assessment of temperamental traits. In the current study, only mothers completed the ECBQ. Maternal reports were included as previous research supports its predictive validity for later child development outcomes as compared to others' reports (Kwon et al., 2013).

Couple's dyadic adjustment

A couple's dyadic adjustment was assessed by the Dyadic Adjustment Scale (DAS; Spanier, 1976). This is a 32-item self-report measure that assesses marital satisfaction along the dimensions of dyadic consensus, dyadic satisfaction, affectional expression and dyadic cohesion.

Parenting stress

Parenting stress was assessed by the Parenting Stress Index (PSI; Abidin, 1983). The PSI is a 101-item questionnaire that is designed to identify dysfunctional parent-child systems. It comprises four subscales; Parental Distress (PD), Parent-Child Dysfunctional Interaction (PCDI), Difficult Child (DC) and Defensive Responding (DR) and can be completed by parents of children aged between 1 month and 12 years.

Parental sense of competence

The Parenting Sense of Competence Scale (PSOC; Gibaud-Wallston, & Wandersman, 1978) is a 16-item self-report instrument used to assess parents' self-efficacy and satisfaction in their parenting roles.

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

Analyses were carried out using SPSS version 25. Table 4.1.1 shows descriptive statistics for the variables used in the current study. (Note: pooled results from the 5 imputations are reported in this study). Given that some of the variables in the current study were not normally distributed and did not meet the requirements for conducting parametric correlations, Spearman's partial correlations were computed [bootstrapped bias-corrected confidence intervals based on 1000 samples] among the study variables. Table 4.1.2 shows the bivariate associations between the study variables. Results from this preliminary analysis revealed that parental age, parental education, toddlers' temperament, parents' dyadic adjustment, parenting stress and parenting sense of competence were not related to either supportive or undermining coparenting dynamics.

Table 4.1.1

Descriptive statistics for the study variables (N = 77)

Variables	Mean	SD	Min	Max	Skewness	Kurtosis
Child temperament						
Negative affect	2.86	.53	1.71	4.39	.29	.06
Surgency	5.19	.60	3.63	6.75	.13	-.09
Effortful control	4.79	.60	3.24	5.93	-.22	-.35
Parent characteristics						
Age-Mother	34.07	7.19	24.00	48.00	-2.70	12.74
Age-Father	34.45	9.71	23.00	55.00	-2.36	7.50
Education-Mother	6.21	.85	4.00	8.00	-.12	.18
Education-Father	5.77	1.10	3.00	8.00	-.62	.64
Couple's DAS						
Dyadic adjustment-Mother	122.06	15.48	85.00	149.00	-.26	-.33
Dyadic adjustment-Father	118.26	12..96	83.00	148.00	-.22	.01
Parental functioning						
Parenting stress-Mother	29.89	17.12	1.00	77	.28	.32
Parenting stress-Father	35.88	17.51	1.00	79.00	.00	-.35
PSOC-Mother	53.86	4.52	41.00	64.00	-.20	.12
PSOC-Father	52.91	3.84	43.00	61.00	-.36	.05
Coparenting dynamics						
Supportive coparenting	3.43	.91	1.20	5.00`	-.28	-.48
Undermining coparenting	1.46	.05	1.00	3.80	1.87	4.81

DAS: Dyadic adjustment; PSOC: Parenting sense of competence

Table 4.1.2

Bivariate correlations among toddler and parent characteristics, couple and parental functioning and coparenting dynamics (N = 77)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Neg Aff																
2. Surgency	.31**															
3. Eff Con	-.20	.03														
4. Age-M	-.03	-.15	-.04													
5. Age-F	-.01	-.21	-.11	.74**												
6. Edu-M	-.07	.03	-.17	-.11	.02											
7. Edu-F	.17	.10	-.35**	.03	.11	.46**										
8. DAS-M	.15	.04	.07	-.27*	-.19	.21	.15									
9. DAS-F	-.06	-.08	.22*	-.16	-.03	-.00	.00	.29*								
10. PSI-M	.25*	.06	-.28*	.08	-.13	-.15	-.06	-.32**	-.13							
11. PSI-F	.03	.14	-.17	-.07	-.04	-.04	-.08	-.17	-.47**	-.09						
12. PSOC-M	-.05	.10	-.01	-.08	-.06	.26*	.06	.04	.06	-.01	-.04					
13. PSOC-F	.01	-.00	-.19	-.11	.01	.01	.00	.07	-.07	.11	.28*	-.02				
14. Cop- supp	-.02	.07	.03	-.20	-.09	.14	-.01	.05	.17	.12	.01	-.04	.22			
15. Cop- und	.08	-.13	-.03	-.01	.07	.05	-.04	-.17	.06	-.04	-.16	.06	-.16	-.31**		

Neg Aff: Negative affectivity; Eff Con: Effortful control; Edu: Education; DAS: Dyadic Adjustment Scale; PSI: Parental Stress Index; PSOC: Parental Sense of Competence; Cop: Coparenting; Supp: supportiveness; Und: Undermining; M: Mother; F: Father ** p < .01; *p < .05

The main aim of the current study was to examine how child and parent characteristics, family-level influence and parental attributes are associated with observed coparenting supportiveness and undermining behaviours. At first, to test for possible child gender effects in observed coparenting supportiveness an independent samples *t*-test was conducted. No differences were observed by child gender for coparenting supportiveness, $t(77) = -.41, p = .67$. Given that the variable undermining coparenting was not normally distributed, a Mann-Whitney U test was conducted which indicated that coparenting undermining did not differ significantly by child gender $U(38, 39) = 700.00, z = -.42, p = .67$.

Next, two multiple regression analyses were conducted to identify the contributions of child temperament, parent age, parental education, parents' dyadic adjustment, parental stress and parenting sense of competence (independently for mothers and fathers) to observed supportive and undermining coparenting dynamics. A power analysis was conducted using G*Power3 (Faul, Erdfelder, Lang, & Buchner, 2007). The sample size was calculated to detect a medium effect size ($f^2 = .25$) and the analysis showed that an *n* of 69 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). Assumptions for regression analyses were met. Results from these multiple regressions have been summarised in Tables 4.1.3 and 4.1.4. As seen in Table 4.1.3, non-significant regression equations were observed for child and mother characteristics, mothers' dyadic adjustment, parenting stress and parental sense of competence predicting supportive coparenting $F(8, 68) = 1.49, p = .18$. However, within this model, mothers' age made a significant independent contribution to supportive coparenting dynamics ($\beta = -.23, p = .04$). Additionally, non-significant regression equations were observed for child and father

characteristics, fathers' dyadic adjustment, parenting stress and parental sense of competence predicting supportive coparenting $F(8, 68) = 1.55, p = .16$. However, within this model, fathers' age ($\beta = -.27, p = .02$) and fathers' parental sense of competence ($\beta = .29, p = .02$) made independent significant contributions to supportive coparenting dynamics. Given that the primary aim of the study was in examining the relationship between the variables, the non-significant regression equations were not considered to negate the importance of the significant predictors in the model and results have been discussed in accordance with this.

Table 4.1 4 shows non-significant regression equations for child and mother characteristics, mothers' dyadic adjustment, parenting stress and parental sense of competence predicting undermining coparenting $F(8, 68) = 1.09, p = .40$ and for child and father characteristics, fathers' dyadic adjustment, parenting stress and parental sense of competence predicting undermining coparenting $F(8, 68) = 1.75, p = .11$.

Table 4.1.3

Multiple regression analysis for toddler and parent characteristics, couple and parental functioning predicting supportive coparenting (N = 77)

Variable	Mothers			Fathers		
	B	SE	Beta	B	SE	Beta
Child negative affect	-.09	.22	-.05	-.05	.22	-.03
Child surgency	.08	.19	.05	.05	.20	.03
Child effective control	.06	.19	.04	-.03	.19	.01
Parent age	-.03	.01	-.23*	-.02	.01	-.27*
Parent education	.23	.13	.20	-.01	.10	-.01
DAS	.00	.02	.03	.00	.01	.02
PSI	.01	.00	.19	-.00	.00	-.01
PSOC	-.02	.00	-.13	.06	.03	.29*
R ²		.14			.15	
F		1.49			1.55	

DAS: Dyadic Adjustment Scale; PSI: Parental Stress Index; PSOC: Parental Sense of Competence; Cop: Coparenting ** $p < .01$; * $p < .05$

Table 4.1.4

Multiple regression analysis for toddler and parent characteristics, couple and parental functioning predicting undermining coparenting (N = 77)

Variable	Mothers			Fathers		
	<i>B</i>	SE	Beta	<i>B</i>	SE	Beta
Child negative affect	.22	.13	.22	.16	.12	.16
Child surgency	-.11	.11	-.12	-.04	.11	-.04
Child effective control	.02	.10	.03	-.04	.10	-.05
Parent age	.00	.00	.07	.01	.00	.22
Parent education	.02	.07	.04	-.07	.05	-.14
DAS	-.00	.00	-.19	-.00	.00	-.06
PSI	-.00	.00	-.21	-.00	.00	-.16
PSOC	-.00	.01	-.00	-.03	.01	-.21
R ²		.11			.16	
F		1.09			1.75	

DAS: Dyadic Adjustment Scale; PSI: Parental Stress Index; PSOC: Parental Sense of Competence;
 Cop: Coparenting ** $p < .01$; * $p < .05$

Discussion

The current study aimed to examine the contributions of child gender, child temperament, parent age, parent education, couple adjustment, parenting stress and parental sense of competence to observed supportive and undermining coparenting behaviours during triadic free-play interaction with toddlers. Relatively little research to date has addressed the role of these variables in coparenting dynamics and findings from the current study indicate taking such variables into consideration is key to understanding the underlying processes in the coparental subsystem.

First, in relation to child characteristics, the results showed no significant associations between child gender and coparenting. This is in contrast to Bronte-Tinkew et al.'s (2010) study that reported greater perceived supportive coparenting among fathers to male children. Findings suggested that child gender effects may be less apparent in

contemporary families wherein parents engage/play with boys and girls in similar ways and expect and elicit similar behaviours from them. This is reflected in prior research examining child gender effects on coparenting dynamics (Dush et al., 2011; Stright & Bales, 2003).

Second, results from our preliminary analysis showed no significant associations between supportive and undermining coparenting and any of the child and parent characteristics, couple adjustment or parental functioning. Next, the contributions of mothers' and fathers' age, education, dyadic adjustment, parenting stress and parental sense of competence to observed supportive and undermining coparenting dynamics were analyzed (Tables 4.1.3 and 4.1.4).

The results showed non-significant relations between any of the dimensions of toddlers' temperament and observed coparenting dynamics. This is in contrast to a few studies that have established associations between the two (Lindsey et al., 2005; Van Egeren, 2004). However, the findings might be indicative of a possible role of parental education. Research indicates that higher levels of education may be associated with greater knowledge of child development (Rowe et al., 2015). Parents may be aware of the different temperamental attributes in children and may learn to equip themselves with the required skills to coordinate their coparental efforts and manage such traits efficiently. As such, given that they possess adequate knowledge about their toddlers' temperament, parents' coparental relationship may be less affected by their toddlers' behavioural style of responding to different situations. In addition, it is possible that the effects of child temperament on coparenting dynamics become more apparent with time. Longitudinal

investigations of the role of children's temperamental traits in the stability of the coparenting relationship may help to illuminate these findings.

Among parental characteristics, mothers' and fathers' age was significantly negatively associated with supportive coparenting dynamics. Specifically, less supportive coparenting behaviours were observed in families with older mothers and fathers. One possibility is that older parents subscribe to more gender-stereotyped parenting wherein mothers are responsible for leading the interaction with fathers assuming a peripheral part in a triadic parent-child interactional context. In such circumstances, with mothers leading the interaction, coparenting can appear less supportive but not necessarily more undermining. More research examining coparenting dynamics in families with older parents with toddlers is required that can help illustrate this finding further.

Additionally, the majority of parents included in the current study were well-advantaged in terms of education. Given the low variations in parental education levels, it can be suggested that the study was unable to reliably identify the relationship between parental education and observed coparenting dynamics. Further research including families with varying education levels is needed for illuminating these findings further.

Based on the family-systems perspective (Minuchin, 1974), dynamics within the couple adjustment and the coparenting relationship are interdependent. While prior research has highlighted the significant associations between the marital system and coparenting dynamics (Katz & Gottman, 1996; Schoppe-Sullivan et al., 2004), this study failed to report any relation between the two. One possible reason can be attributed to the different methods adopted for examining the two subsystems. While parents' dyadic adjustment/marital relationship was assessed using a self-report instrument, coparenting

dynamics were observed in real-time. Thus, while self-report measures reflect parents' own perceptions of their marital relationship, observational measures reflect the coparenting dynamics as perceived by the observer of the interaction.

In addition, each measurement method captures different aspects of the two-family subsystems. Self-reports of dyadic adjustment permit us to examine parents' experiences within their marital relationship and is reflective of attitudes and perceptions that have formed over a longer period of time and across a wide range of contexts. Observational measures, on the other hand, allow us to perceive a subset of coparenting behaviours that unfold within a brief period of time within a specific interactional context. Additionally, it is possible that the relationship between couple adjustment and coparenting dynamics is more prominent when examined over time and the direction of effects may be stronger for coparenting as a predictor of dyadic adjustment than the other way round. For instance, Schoppe-Sullivan et al (2004) found that early coparenting behaviours predicted later couple adjustment (termed as marital satisfaction) but early dyadic adjustment did not predict later coparenting behaviours. Future investigations examining associations between self-reported dyadic adjustment and self-reported coparenting dynamics may help to illuminate such findings further.

In relation to parental functioning, only fathers' parental sense of competence was significantly positively associated with supportive coparenting dynamics. The positive association between fathers' parenting sense of competence and supportive coparenting lends support to existing empirical evidence that fathers who feel more competent in their roles as parents are more likely to apply their parenting knowledge to the interaction which leads to a more coherent and harmonized family interaction (Korja et al., 2015).

However, mothers' parental sense of competency was not associated with observed coparenting dynamics. This finding is in contrast to both Korjas et al.'s (2015) study and the findings reported by Favez et al. (2016) both of which found higher maternal parental sense of competency (self-efficacy specifically) to be associated with more supportive observed coparenting dynamics. One possibility is that because mothers even in dual-earner families continue to perform the majority of tasks related to child-care (Kotila et al., 2013; Yavorsky et al., 2015) they may be applying their parenting knowledge to the interaction (that relates to a more supportive coparenting dynamic) irrespective of their implicit sense of parenting competence.

Furthermore, no significant associations between parenting stress and coparenting dynamics were observed. This is in contrast to the findings of a recent study that reported unique bidirectional associations between maternal parenting stress and perceived coparenting (Kang, Choi, & Chung, 2020). This absence of association can be attributed to the nature of the interactional context within which coparenting dynamics were observed. Even though toddlers are likely to be highly explorative with a burgeoning need for autonomy which can be challenging for parents, a free-play interaction is a relatively low-stress parent-child interactional environment. The impact of stress associated with raising a toddler on coparenting dynamics may not be as apparent within a novel free-play interactional context. Perhaps, the association between parenting stress and coparenting supportiveness and undermining is more evident in other contexts such as during caregiving interactions. Future investigations comparing the association between parenting stress and coparenting dynamics in a variety of parent-child interactional contexts will help to elucidate these findings further.

The findings from the current study need to be considered in light of the limitation that toddlers' temperamental traits were assessed via parental reports and although parents are considered to be reliable reporters of their children's developmental competencies and temperamental traits, self-reports can nonetheless be subject to biases (Siefer, 2002). Thus, it is not clear whether toddlers' temperamental traits as determined in this study are the actual traits or parents' perceptions of their toddlers' temperamental traits. As suggested in prior research in this area, the inclusion of observatory assessments or reports by trained observers would help to strengthen further research. Additionally, parents in this sample were well-educated which could explain the null finding that education was not associated with coparenting dynamics. Further research with more diverse samples is needed before reaching a definite conclusion.

Overall, results from this study highlight important associations between individual and parenting attributes and the coparenting subsystem which can inform intervention designs targeted at improving the functioning of different family subsystems. Specifically, when considering the risk and protective factors that might affect the coparenting relationship, particular attention needs to be directed at fathers' parenting sense of competence as this can modify the dynamics of the coparenting subsystem.

Study 2. Stability of coparenting dynamics from toddlerhood to the preschool years: The moderating role of toddler temperament

Abstract

This study examined the role of infant temperament in the stability of observed coparenting dynamics from toddlerhood to the preschool years. Specifically, the study examined whether coparenting dynamics in toddlerhood predicted coparenting dynamics in the preschool years. Further, toddler temperament was considered as a moderator of longitudinal stability in coparenting behaviours. Supportive and undermining coparenting dynamics were observed in twenty-four two-parent families who were recruited to participate when children were aged between 21 to 27 months (Wave 1) and again when children were aged between 48 to 60 months (Wave 3). Both supportive and undermining coparenting remained stable across time; however, stability in supportive coparenting was evident only for families with toddlers reported as having low negative affectivity and high surgency. Results suggest that child characteristics play an important role in shaping family relationships.

Introduction

In addition to investigating factors that contribute to coparenting dynamics, it is important to establish the stability of this relationship. A gradual shift from the ‘snapshot’ view of the family system captured at a single point in time to longitudinal investigations of this family subsystem suggests that there is stability across developmental time (Gable et al., 1995; McHale & Rotman, 2007; Van Egeren, 2003). While relative stability of high levels of supportive coparenting dynamics can benefit children’s developmental outcomes, stability of high levels of undermining dynamics is likely to have negative implications for children’s emerging developmental competencies and outcomes.

Furthermore, with the understanding that much as parents influence their children, young children too affect the actions of parents (Sameroff, 1975; 2009), the need to examine the role of toddler characteristics in establishing the stability of coparenting dynamics is clear. One important characteristic relates to the child’s temperament. Although a handful of studies have demonstrated that children’s temperamental traits play an important role in the development of the coparenting relationship from infancy to toddlerhood (Davis et al., 2009; Laxman et al., 2013), very little is understood in relation to the developmental period from toddlerhood to the preschool years.

The current study aimed to answer three research questions. (1) Do observed coparenting supportiveness and undermining remain stable across toddlerhood to preschool years? In line with most studies of stability across infancy and toddlerhood, coparenting dynamics were also expected to remain stable across the developmental periods under consideration in the current study. The second research question was (2) Do negative affectivity, surgency and effortful control dimensions of toddlers’ temperament moderate

the association between coparenting dynamics in toddlerhood and the preschool years? In other words, the study examined whether temperamental traits in toddlers interacted with coparenting dynamics in toddlerhood in predicting coparenting dynamics in the preschool years. Coparenting dynamics were expected to be less stable in families with toddlers reported as having more difficult temperamental traits (high negative affectivity).

Method

Participants

This study comprised twenty-four families who visited the lab when the child was aged between 21 to 27 months and then a second time when the child was between 48 and 60 months (13 females: $M = 52.62$, $SD = 3.75$). The sample of 24 was due to the rate of attrition (please refer to the Method chapter for details). Mothers were aged between 25 to 48 years and fathers were aged between 23 to 45 years ($M = 36.45$, $SD = 4.88$) at the first visit. Among mothers, 12.5% had completed second-level/third level non-degree education, 83.2% had a bachelors/master's degree and 4.3% had a doctoral degree. Among fathers, 12.5% had completed second-level education, 62.5% had completed second-level/third level non-degree education, 20.8 of fathers had a bachelors/master's degree and 4.2% had a doctoral degree.

Procedure

Wave 1

The first lab assessment was carried out when the children were aged between 21 to 27 months (38 females: $M = 24.09$, $SD = 1.36$). Triadic (mother-father-toddler) parent-child interactions were recorded during a structured play task which lasted 5 minutes. During the structured-play task, both parents and toddler were presented with a teddy bear skills

puzzle board. The board consisted of 6 removable pieces each related to a specific dressing skill including tying, zipping, buckling, snapping, buttoning and lacing. Once each piece had been worked through, they were to be replaced into the correct slots to finish dressing the bear. Parents were instructed to help their toddlers work through the puzzle by trying the dressing activities on the puzzle pieces and getting the bear dressed.

Wave 3

The third lab assessment was carried out when the children were aged between 48 to 60 months (13 females: $M = 52.62$, $SD = 3.75$). Triadic parent-child interactions were recorded during a structured play task which lasted 5 minutes. In the triadic interaction, parents and children were once again seated on a mat in the play room and a structured task was assigned to them. During the structured play task, families were provided with a magnetic construction set with an instruction leaflet for different construction designs. The magnetic pieces connect to create different 3D shapes, houses, towers and more. The families were asked to pick a design out of any four options and help their children build it.

Measures

Socio-demographic data

Both parents provided information about their age, education level, their child's age and gender.

Observed coparenting dynamics

Supportive and undermining coparenting dynamics observed during a free-play session was assessed globally using a five-point scale ranging from very high to very low. Supportive coparenting was indexed by scales that measured the level of cooperation,

warmth and pleasure. Undermining coparenting was indexed by scales that measured the level of competition, coldness and displeasure.

Toddler temperament

Toddlers' temperament was assessed by the Early Childhood Behaviour Questionnaire (ECBQ) (Goldsmith, 1996). The ECBQ is a valid measure that consists of 201 items and 18 scales is completed by parents to children aged between 18 to 36 months and provides a more comprehensive assessment of temperamental traits. In the current study, only mothers completed the ECBQ. Maternal reports were included as previous research supports its predictive validity for later child development outcomes as compared to others' reports (Kwon et al., 2013).

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

The analysis in the current study was carried out using SPSS version 25. Table 4.2.1 shows descriptive statistics and correlations among the coparenting variables and toddlers' temperament. The results for each research question are discussed below.

Do supportive and undermining coparenting dynamics remain stable across Wave 1 and Wave 3?

Supportive coparenting at Wave 1 was found to be significantly correlated with supportive coparenting at Wave 3 on the basis of rank-order correlations ($r = .74, p < .01$) (see Table 4.2.1). In addition, no mean-level differences were found in supportive coparenting between Wave 1 ($M = 3.26, SD = .69$) and Time 2 ($M = 3.14, SD = .09$); $t(24)$

= 1.162, $p = .257$. Results from these tests indicated that observed supportive coparenting dynamics remained stable from toddlerhood to the preschool years.

Undermining coparenting at Wave 1 was also significantly correlated with undermining coparenting at Wave 3 on the basis of rank-order correlations ($r = .40$, $p = .04$) (see Table 4.2.1). Additionally, no mean-level differences were found in undermining coparenting between Wave 1 ($M = 1.14$, $SD = .30$) and Wave 3 ($M = 1.03$, $SD = .07$); $Z = -1.70$, $p = .08$, suggesting that undermining coparenting dynamics remain stable across the two time points. However, given that the correlation coefficient is moderate and the significance level for the mean-level differences is .08 suggests that significant differences could be observed in larger sample size, so these results need to be interpreted with caution.

Table 4.2.1

Correlations among supportive and undermining coparenting dynamics at Wave 1 and Wave 3 ($N = 24$)

Study variables	1	2	3	4
1.Supportive coparenting Wave 1				
2. Undermining coparenting Wave 1	-.09			
3.Supportive coparenting Wave 3	.74**	-.19		
4.Undermining coparenting Wave 3	-.08	.40*	-.08	
SD	.69	.30	.46	.07
Min	2.00	1.00	2.00	1.00
Max	5.00	2.20	3.80	1.20

** $p < .01$; * $p < .05$

Do the negative affectivity, surgency and effortful control dimensions of temperament moderate the stability of supportive coparenting dynamics from toddlerhood to the preschool years?

Next, the study investigated whether toddlers' temperamental traits moderated the association between supportive coparenting dynamics at Wave 1 and Wave 3. Power analysis revealed that on the basis of the effect size observed in the present study ($f^2 = .81$), an n of approximately 18 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). Given the very low variability in undermining coparenting as indicated by the means and the observed range (Table 4.2.1) moderation analyses for this domain of coparenting were not conducted. Future investigations in participant groups that exhibit the full range of behaviours need to be undertaken. For supportive coparenting at Wave 3, the interaction between supportive coparenting at Wave 1 and toddlers' negative affectivity was negative and statistically significant (Table 4.2.2) and accounted for 12% of the variance ($R^2 \Delta = .12, p = .02$). In addition, the interaction between supportive coparenting at Wave 1 and toddlers' surgency was positive and statistically significant and also accounted for 12% of the variance ($R^2 \Delta = .12, p = .02$). No significant interaction effects were observed between supportive coparenting at Wave 1 and toddlers' effortful control ($R^2 \Delta = .00, p = .73$). The interaction effects are illustrated in Fig. 4.2.1 and 4.2.2.

Table 4.2.2

Regressions testing toddlers' temperamental traits as moderators of the stability of supportive coparenting dynamics between Wave 1 and Wave 3, (N = 24)

	Supportive coparenting Wave 3		
	B	SE	95% CL
Supportive coparenting Wave 1	.48**	.10	0.27-0.69
Negative affectivity Wave 1	-.05	.17	-0.42-0.30
Supportive coparenting Wave 1 X Negative affectivity Wave 1	-.79*	.33	-1.50- -0.09
Supportive coparenting Wave 1	.58**	.11	0.34-0.81
Surgency Wave 1	.10	.11	0-.13-0.35
Supportive coparenting Wave 1 X Surgency Wave 1	.59*	.24	0.08-1.09
Supportive coparenting Wave 1	.45**	.12	0.20-0.70
Effortful control Wave 1	.01	.14	-0.29-0.32
Supportive coparenting Wave 1 X Effortful control Wave 1	-.08	.25	-0.61-0.44

** p < .01; *p < .05

Examination of the interaction plots showed that at low levels (16th percentile) of toddler negative affectivity, the association between supportive coparenting at Wave 1 (values on x-axis signify -1 SD, Mean and +1 SD) and supportive coparenting at Wave 3 was significant ($b = 0.80$, 95% CI, 0.42-0.89, $t = 4.38$, $SE = 0.18$, $p = .000$). At moderate levels (50th percentile) of toddler negative affectivity, the association between supportive coparenting at Wave 1 and supportive coparenting at Wave 3 was also significant ($b = 0.47$, 95% CI, 0.26-0.68, $t = 4.68$, $SE = 0.10$, $p = .000$). However, at high levels (84th percentile) of toddler negative affectivity, the association between supportive coparenting at Wave 1 and supportive coparenting at Wave 3 was not significant ($b = 0.11$, 95% CI, -0.24-0.47, $t = 0.66$, $SE = 0.17$, $p = .515$). In other words, supportive coparenting dynamics at Wave 1 is positively associated with supportive coparenting dynamics at Wave 3 when toddler negative affectivity is low to moderate but not significantly associated when there are high levels of toddler negative affectivity.

In relation to toddlers' surgency, examination of the interaction plots showed that at low levels (16th percentile) of toddler surgency, the association between supportive coparenting at Wave 1 and supportive coparenting at Wave 3 was not significant ($b = 0.15$, 95% CI, -0.16-0.48, $t = 1.00$, $SE = 0.15$, $p = .327$). However, at moderate ($b = 0.67$, 95% CI, 0.39-0.95, $t = 4.96$, $SE = 0.13$, $p = .000$) and high ($b = 0.97$, 95% CI, 0.48-1.46, $t = 4.12$, $SE = 0.23$, $p = .000$) levels of toddler surgency, the association between supportive coparenting at Wave 1 and supportive coparenting at Wave 3 was statistically significant. In other words, supportive coparenting dynamics at Wave 1 is not significantly associated with supportive coparenting at Wave 3 when toddler surgency is low but significant positive associations are observed between the two time points when toddlers' surgency is moderate to high.

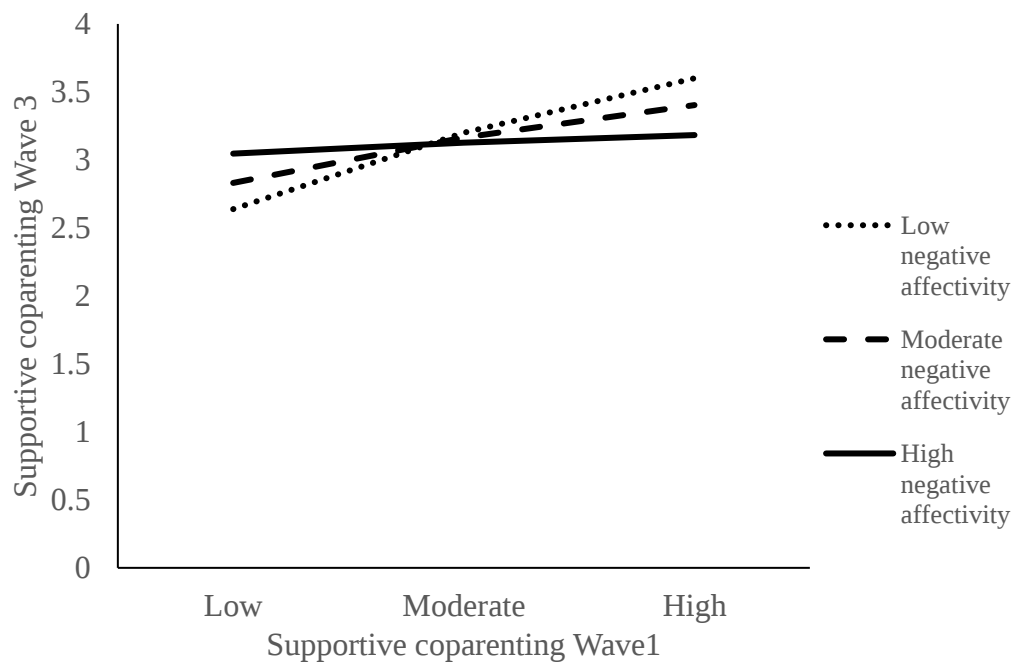


Figure 4.2.1. The conditional effect of supportive coparenting at Wave 1 on supportive coparenting at Wave 3 as a function of toddler negative affect

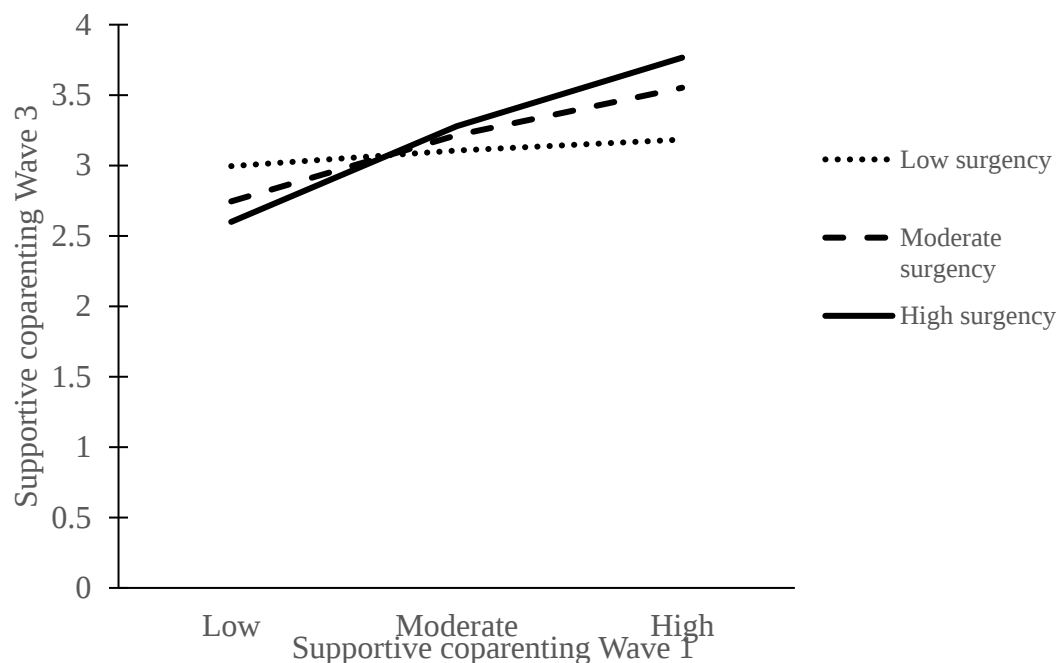


Figure 4.2.2. The conditional effect of supportive coparenting at Wave 1 on supportive coparenting at Wave 3 as a function of toddler surgency

Discussion

The focus of the current study was on examining the stability of observed coparenting dynamics across toddlerhood to the preschool years. Previous studies have established that child characteristics, like easy and difficult temperamental traits, play an important role in modifying the dynamics of the coparenting relationship across the first three years of life. Given that coparenting has been consistently evidenced as influencing child outcomes, this study extended prior research by examining the role of three specific domains of child temperament (namely negative affectivity, surgency and effortful control) in shaping coparenting dynamics across toddlerhood and beyond to the preschool years.

First, the study examined whether mothers' and fathers' coparenting remained stable across the developmental transition from toddlerhood to the preschool years. Parents' observed supportive coparenting showed high rank-order as well as mean-level stability

across the two time points. This suggests that despite the changes and the new challenges brought on by a new developmental period, parents do not undergo major changes in their supportive coparenting dynamics and are able to carry forward and utilise their positive coparenting skills mastered in an earlier period of development.

Parents' observed undermining coparenting, as well, showed both mean-level stability and rank-order stability. These findings are consistent with some prior research but those studies took infant temperament into consideration which showed that undermining coparenting remained stable across early infancy but only when the infants had less difficult temperaments. (Davis et al., 2009; Laxman et al., 2013). This suggests the need for additional investigations that take infant and child characteristics into consideration when examining family dynamics. Such stability of undermining coparenting behaviours across time, as observed in the current study, indicates that parents who exhibit undermining behaviours while coparenting toddlers are likely to exhibit similar behaviours while coparenting preschoolers. However, it is to be noted that the sample consisted of low-risk families who exhibited very few undermining coparenting behaviours. As such, results pertaining to the stability of the undermining domain of the coparenting relationship need to be interpreted with caution.

Next, the study investigated whether toddlers' temperamental traits of negative affectivity, surgency and effortful control moderated the association between coparenting dynamics observed during toddlerhood and those observed during the preschool years. Results showed that the extent to which supportive coparenting dynamics persevered over time depended in part on toddlers' temperamental traits. Toddlers' negative affectivity and surgency were the two dimensions of temperament that moderated the association between

supportive coparenting dynamics at Wave 1 and Wave 3. Supportive coparenting dynamics at Wave 1 was significantly positively associated with supportive coparenting at Wave 3 but only when toddlers were reported as having low to moderate levels of negative affectivity and moderate to high levels of surgency. Within the family context involving toddlers whose temperaments are characterised by high levels of anger, fear, sadness with a low disposition toward positive affect, sociability, and high activity levels, it is likely that parents exhibit a diverse range of responses to toddlers with these temperamental traits (Crockenberg & Leerkes, 2003). They may have to frequently reassess their coparenting dynamics to ensure that their children's needs are being met effectively. Parents of children with low and moderate levels of negative affectivity may need to make fewer accommodations in their coparenting patterns and thereby exhibit more stability in their coparenting dynamics over time.

We, however, did not observe any moderating role of toddlers' effortful control in determining the stability of supportive coparenting across this developmental transition. It is possible that temperamental traits pertaining to the toddlers' ability to inhibit responses or attention shifting play a more critical role in coparenting dynamics in the first three years of a child's life as indicated by Karreman et al's. (2008) study which reported positive associations between the two. Beyond these years, managing children's high negative affectivity and low surgency may take precedence over the effortful control domain of temperament. In addition, it is to be noted that the sample size was limited and that for the temperamental domain of effortful control to show any significant effects, a larger sample would be required.

Findings from this study need to be considered in light of a few limitations. First, the sample size was limited with very low variability in undermining coparenting dynamics. For results to be generalizable, the study needs to be replicated in a bigger longitudinal sample with more at-risk or clinically distressed families. Moreover, with the limited sample size, taking the child's gender into consideration was also not possible. Such variables may contribute to the stability of coparenting dynamics and as such inclusion of this data in future research is important for strengthening our understanding of the coparenting construct. Finally, coparenting dynamics at wave 3 were coded by one coder and, therefore, the reliability statistics could not be determined for the ratings in this study. However, the good reliability scores achieved for the wave 1 data lend confidence to the ratings of observed coparenting dynamics at wave 3 and demonstrate that the ratings are accurate representations of the coparenting dynamics measured.

Nonetheless, findings from this study highlight the importance of taking child characteristics into consideration when examining the stability of coparenting dynamics. Doing so is important for informing practice and designing intervention plans. Intervention plans designed to enhance family dynamics in the context of having a child with temperamental challenges may reap great benefits for families, particularly for distressed families. Future research should further examine the role of the child and other family members' characteristics in establishing the stability of the coparenting relationship. In addition, future research should be expanded to examine this stability across more developmental transitions.

Study 3: Part 1. Mothers' and fathers' play behaviours in dyadic and triadic contexts

Abstract

This study examined variations in mothers' and fathers' play behaviours across dyadic and triadic contexts in seventy-two, two-parent families with 21 to 27-month-old toddlers. Specifically, the study examined variations in mothers' and fathers' engagement in toy play, verbal facilitation of toddlers' play and observation of toddlers' play as a function of their gender and the play context (dyadic vs triadic) during a free-play interaction. Results showed that both parents were significantly less engaged in toy play and provided significantly less verbal facilitation of toddlers' play in the triadic context in comparison with the dyadic context. In addition, it was observed that (1) within the triadic context, mothers used significantly more speech than fathers to guide toddlers' play and (2) within the dyadic context, fathers engaged in significantly more toy play than mothers. The results have been discussed in terms of the roles that context and parental gender play in family interactions and the implications of these for intervention plans targeted at improving whole-family functioning.

Introduction

Triadic interactions in the context of parent-child play are at the heart of our understanding of coparenting dynamics and family functioning. Even with increased interest in this domain of family life, research in the area of coparenting is still limited. The majority of developmental research on family relationships has demonstrated the importance of the parent-child dyad, particularly the mother-infant dyad, in the socio-emotional developmental trajectories of children (Eisenberg et al., 2003; Garner & Power, 1996; Lunkenheimer, Shields, & Cortina, 2007). Even with the involvement of fathers in developmental research (Paquette, 2004; Roggman, 2004, Tamis-LeMonda, 2004), much of our understanding of the impact of family relationships on young children is derived from investigations focusing primarily on the dyadic relational context within a family.

The family is a “complex, integrated whole” (Minuchin, 1985, p8) and the need to examine it through a systemic lens is highlighted by research suggesting that the parenting behaviours and dynamics observed in the dyadic context are not entirely representative of those observed in the triadic context (Lindsey & Caldera, 2006; Mendonca, Bussab, & Katner, 2019; Mendonca, Cossette, Strayer, & Gravel, 2011). Given such findings, further research examining variations in mothers’ and fathers’ behaviours and dynamics across the two contexts is warranted.

The target behaviour in the current study was parental play observed in dyadic and triadic interactions with toddlers. Parental engagement in play with toddlers benefits children’s social and emotional development (Ginsburg, 2007; Suarez et al., 2019; Yu & Smith, 2012; Yu & Smith, 2013). Although a substantial number of studies on family relationships and child development have been conducted in the context of parent-child

play, very little attention has been devoted to understanding how such behaviours can vary across interactional contexts.

The first part of this study, therefore, aimed to examine whether parental play behaviours (parental toy play, verbal facilitation of play and observation of toddlers' play), observed in a free-play interaction, vary as a function of parental gender and context. On the basis of the literature reviewed earlier, it was hypothesized that (i) there would be less parental engagement in toy play and verbal facilitation of toddlers' play in the triadic context than in the dyadic context, and, that (ii) fathers would engage in significantly less toy play and verbal facilitation of toddlers' play than mothers in the triadic context.

Method

Participants

This study comprised seventy-two families with toddlers whose mothers were aged between 24 to 48 years ($M = 34.03$, $SD = 7.23$) and fathers aged between 23 and 45 years ($M = 34.45$, $SD = 9.71$). Among mothers, 16% had complete second-level/third level non-degree, 79% had bachelors/master's degree and 5% had a doctoral degree. Among fathers, 5% had a second-level certificate, 26% had completed second-level/third level non-degree, 65% had bachelors/master's degree and 4% had doctoral degrees. The percentage of missing data was 3.89. This missing data was due to the missing video-recordings of dyadic parent-child interactions (3 families). Given that this was a small percentage of data missing which was determined to be missing completely at random (MCAR), listwise deletion was chosen for handling the missing data (Kang, 2013). Moreover, the study retained sufficient power to detect significant effects. Additionally, data from one family in

the dyadic interaction was excluded due to the presence of a second child and from one other family due to a truncated video-recording (less than 5 minutes).

Procedure

At first, triadic (mother-father-toddler) parent-child interactions were recorded followed by dyadic (one parent-toddler) parent-child interactions during a free-play task. During the dyadic interactions in which when one parent interacted with the toddler, the other parent left the room to complete a set of questionnaires. Each interaction lasted 5 minutes. A box containing an assortment of toys (blocks, toy cars, ball, Mr. Potato Head) designed to elicit creativity, humour and imagination were provided to the families who were then requested to play with them as they normally would at home. The order of the dyadic sessions was counterbalanced with 50% of the interactions beginning with either the mother-child dyad or the father-child dyadic interactions.

Measures

Parental play behaviours

Parental play behaviours during the 5-minute free-play sessions were coded microanalytically using an observational coding scheme designed specifically for this study. The scheme classifies the play-based interaction in terms of duration of time parents engage in three mutually exclusive behaviours; toy play involving toy touch or toy handling, verbal facilitation (talking only) and observation of toddlers' play.

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

Analyses were carried out using SPSS version 25 and data were checked for normality. The assumption of normality was violated for some of the variables in the analyses, but the F-test is robust to violations of normality if the group sizes are equal, which they were. In addition, the skewness and kurtosis values were within acceptable limits and as the assumption of homogeneity of variance was met so the study proceeded with parametric statistical analyses. Table 4.3.1 shows descriptive statistics for parents' play behaviours in the dyadic and triadic contexts. Power analysis revealed that the sample size to detect a medium effect size ($f^2=.25$) and the analysis showed that an n of 34 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). To examine the combined effects of parental gender and context, repeated general linear mixed-effects models (GLM) with posthoc tests were conducted (see Table 4.3.2, Fig. 4.3.1-4.3.3). There was a main effect of context on parents' engagement in toy play and verbal facilitation of toddlers' play such that both parents engaged in less toy play and verbal facilitation of toddlers' play in the triadic context as compared to the dyadic context. There was a significant main effect of context and significant interaction effects of parent gender and context on mothers' and fathers' observation of toddlers' play such that both mothers and fathers observed their toddlers' play for a longer duration in the triadic context. However, the increase in the duration of parents' observation in the triadic context was more pronounced for fathers than mothers

In addition, in order to examine play behaviours from the toddlers' perspective, paired t-tests were conducted to examine whether mothers' and fathers' combined engagement in toy play (mothers' and fathers' independent toy play plus the overlap) in the

triadic context would significantly differ from the dyadic context (average of the means for dyadic interactions with mothers and dyadic interactions with fathers). Results showed that toy play in the dyadic context ($M = 192.55$, $SD = 45.29$) was significantly higher than parents' combined engagement in toy play in the triadic context ($M = 162.64$, $SD = 54.23$); $t(71) = -4.313$, $p < .001$. Similarly, paired t-tests were conducted to examine whether mothers' and fathers' combined verbal facilitation in the triadic context would significantly differ from the dyadic context (average of the means for dyadic interactions with mothers and dyadic interactions with fathers). Results showed that verbal facilitation was significantly lower in the dyadic context ($M = 43.72$, $SD = 24.38$) than parents' combined verbal facilitation in the triadic context ($M = 61.32$, $SD = 28.05$); $t(71) = -5.52$, $p < .001$.

Thus, within a family interactional context, toddlers are exposed to less parental toy play overall but hear more language from the combined input of both mothers and fathers. Results also showed that there was a main effect of context and an interaction effect of context and parental gender on parents' duration of observation of toddlers' play.

Table 4.3.1

Descriptive statistics for mothers' and fathers' play behaviours across dyadic and triadic contexts (N=72)

	Mean	SD	Min	Max	Skewness	Kurtosis
Dyad-Mother						
Toy play	180.14	63.52	50.00	300.00	-.27	-.88
VF	44.50	32.38	.00	157.00	1.71	3.34
Observation	66.43	47.96	.00	197.68	1.01	.59
Triad-Mother						
Toy play	115.27	64.29	.00	257.04	.19	-.78
VF	39.71	23.75	1..08	105.16	.65	-.24
Observation	128.49	59.04	10.80	259.60	.27	-.49
Dyad-Father						
Toy play	204.96	60.79	37.08	298.68	-.43	.02
VF	42.95	32.14	.00	125.28	.74	-.21
Observation	47.13	41.35	.00	165.76	.82	-.08
Triad-Father						
Toy play	121.63	67.07	.00	255.76	.18	-.18
VF	29.79	21.27	.00	109.60	1.13	1.97
Observation	133.66	56.43	24.16	236.44	.00	-.15

VF: Verbal facilitation

Table 4.3.2

Repeated GLM for parents' play behaviours by parent gender and context (N = 72)

Variable		MS	F	η^2
Toy play	Parent gender	17514.43	3.53	.02
	Context	395322.01	122.70***	.46
	Parent gender* Context	6134.44	1.90	.01
Verbal facilitation	Parent gender	2369.93	2.29	.01
	Context	5795.33	11.25**	.07
	Parent gender* Context	1262.36	2.45	.01
Observation	Parent gender	2959.62	.85	.006
	Context	404511.14	215.33***	.60
	Parent gender* Context	11973.78	6.37*	.04

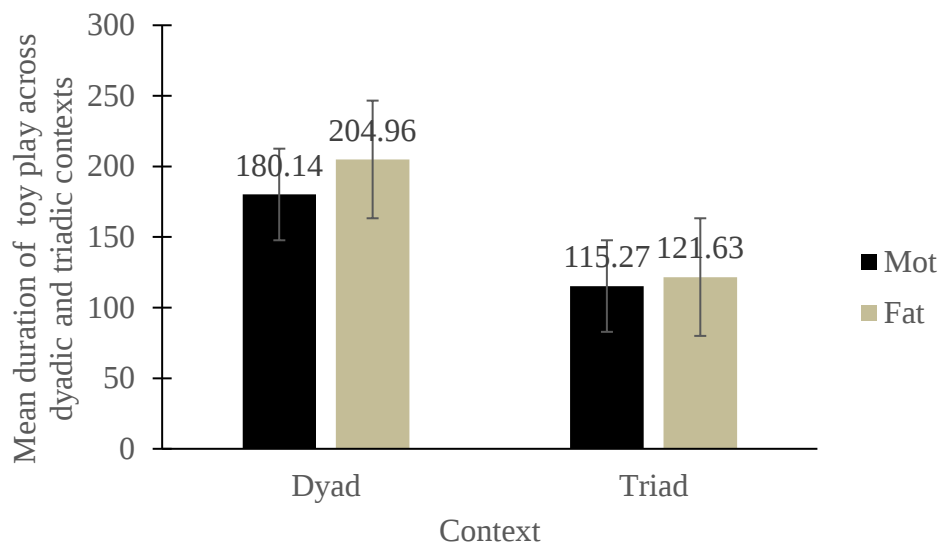
Notes. MS: mean square * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ 

Fig. 4.3.1: Mothers' and fathers' duration of toy play across dyadic and triadic contexts (in secs)

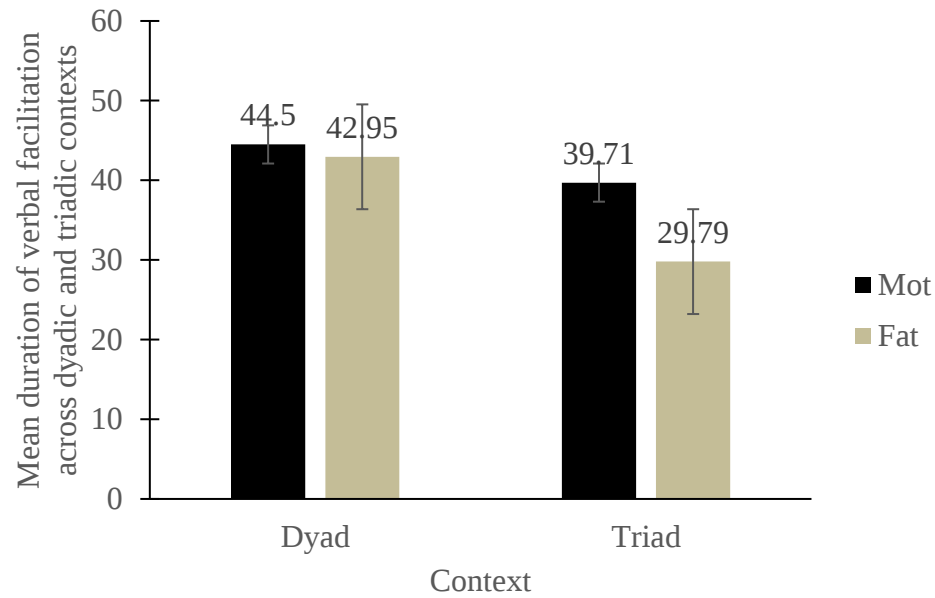


Fig. 4.3.2: Mothers' and fathers' duration of verbal facilitation across dyadic and triadic contexts (*in secs*)

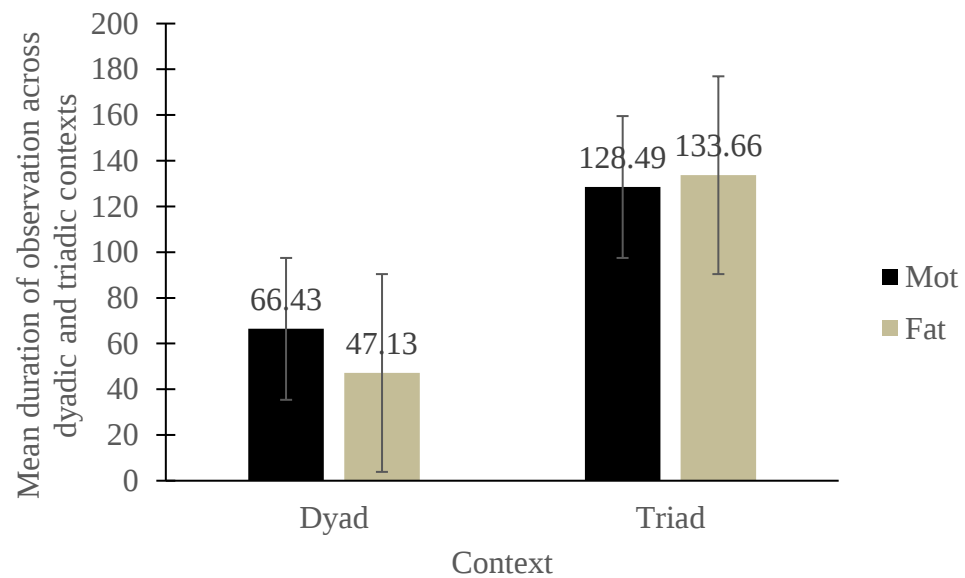


Fig. 4.3.3: Mothers' and fathers' duration of observation across dyadic and triadic contexts (*in secs*)

Discussion

This study examined mothers' and fathers' play behaviours with toddlers across dyadic and triadic contexts. Specifically, the study looked at parents' engagement in toy play that involved handling, exploration and manipulation of toys, verbal facilitation of toddlers' play (in the complete absence of toy play) and observation of toddlers' play (in the complete absence of toy play and verbal facilitation of play). To our knowledge, no other study has offered an in-depth examination of the role of context and parental gender in parents' play behaviours.

First, results showed that mothers' and fathers' engagement in toy play and verbal facilitation of toddlers' play varied as a function of the interactional context. Both parents engaged in significantly less toy play and used significantly less language for facilitating toddlers' play in the triadic context as compared to the dyadic context. This is not too surprising and illustrates a more general phenomenon that an increase in the number of adults results in a decline in parent-child interaction. This may be because the adults tend to focus more on each other leaving less scope for parent-child interactions (Lamb, 1976; McHale & Fivaz-Depeursinge, 1999). There were no main effects of parental gender or interaction effects of gender and context on parents' toy play and verbal facilitation across the dyadic and triadic contexts.

Additionally, it was also observed that although both mothers and fathers individually provided significantly less verbal facilitation in the triadic context, mothers used significantly more language than fathers to facilitate toddlers' play in this context (no significant differences were observed between mothers' and fathers' verbal facilitation in the dyadic context). One possible interpretation of these findings is that within a triadic-

level interactional context, specific traditional parenting roles are reinforced; mothers (as the primary caregivers) who lead the interactions with their children and fathers who assume a more secondary role in the interaction (Mendonca et al., 2011). It was also observed that fathers engaged in significantly more toy play than mothers in the dyadic context. However, no such differences were observed in the triadic context. Although both parents engaged in significantly less toy play in the triadic-level family interactional context, no significant differences were observed between mothers' and fathers' toy play within this context. Similar findings have been reported in a study involving infants. For instance, Goldberg et al. (2002) found that while both parents engaged in less toy play in the triadic context, mothers and fathers did not differ from each other in their frequency of object-play with 6-month old infants. Given that such findings were also observed in the current study involving toddlers, it can be suggested that fathers do not completely abdicate their parental role in a triadic-level family interactional context.

However, it is important to note that the coding scheme in the current study did not distinguish between parental toy play that occurred with the intention of capturing the toddlers' attention and that which reflected parents' solitary exploration of the toys. For instance, within a triadic context, fathers may adopt a peripheral role but still continue to explore and manipulate toys which may not necessarily reflect active engagement in the interaction. While such differences may be challenging to capture, future studies that tap into such distinctions may help to illuminate whether fathers' presence in triadic level interactions equates to father-toddler interactions.

Next, it was observed that mothers' and fathers' combined engagement in toy play in the triadic context was significantly less than parental toy play in the dyadic context.

Thus, even within a context involving a greater number of interactive adults, toddlers are exposed to significantly less parental toy play. However, this does not detract from the importance of triadic family interactions. The presence of broader family processes like the coparenting relationship within the context of triadic parent-child interactions are evidenced as being important for children's emerging developmental competencies (Belsky et al., 1996; Schoppe-Sullivan, Weldon, Cook, Davis, and Buckley, 2009). More supportive and less undermining coparenting behaviours, such as exhibited during triadic family interactions, have contributed to better social and emotional outcomes in children (Baptista et al., 2018; Kwon et al., 2013; Lindsey & Mize, 2001; Ren & Xu, 2019). The extent to which parents relate to each other and collaborate in ways that communicate to the child the unity among them within a triadic context is of considerable importance to toddlers' social and emotional skills (refer to study 2 for the findings). In addition, it was observed that parents' combined duration of verbal facilitation in the triadic context was significantly higher than in the dyadic context which suggests that the triadic context implies an 'additive' linguistic environment. Indeed, toddlers received more verbal facilitation from the combined input of mothers and fathers in the triadic context.

Additionally, there was a significant main effect of context and interaction effect of parental gender and context on parental observation of toddlers' play. Both mothers and fathers observed significantly more in the triadic context than in the dyadic context, but this difference was more pronounced for fathers than mothers. More parental observation in the triadic context is expected given the nature of the context itself. The presence of a second parent provides less scope for one-on-one parent-child interaction. When one parent

interacts with the toddler, the other parent sits back and observes the interaction or both parents may take a step back and observe the toddlers' play.

Findings from this study reflect the complex interactions and contributions of parental gender and interactional context to parental play behaviours. While previous studies have mostly focused on maternal and paternal play behaviours observed during dyadic parent-child interaction, this study makes an additional contribution by examining contextual variability on parents' play behaviours. Such investigations are crucial as they help to disentangle and identify the unique contributions of maternal and paternal play to toddlers' socio-emotional development. In addition, such examinations raise professional awareness which can aid in the design of interventions aimed at enhancing the quality of parent-child interactions both at the dyadic and triadic-family interactional levels.

Part 2: Parental toy play and toddlers' socio-emotional development: The moderating role of coparenting dynamics

Abstract

This study examined the moderating role of coparenting supportiveness in the association between parental play behaviours and toddlers' socio-emotional development. Seventy-six triads (mother, father, toddler) participated in the study. Coparenting dynamics and parental play were observed during family interaction and toddlers' socio-emotional development was reported by mothers. Results indicated that maternal toy play was positively associated with toddlers' socio-emotional development but only when this interaction occurred within a supportive coparenting context. No significant associations were observed between fathers' toy play and toddlers' socio-emotional development. This study highlights the important role played by supportive coparenting dynamics in parent-child play interaction.

Introduction

Following on from the results in the first part of this study, which demonstrate that parental play behaviours vary across dyadic and triadic contexts, it is important to take into consideration that parent-child play interactions in the triadic context are likely to be influenced by coparenting dynamics. In addition to engaging with their children, parents interact with each other in ways that indicate coparental support (or a lack thereof). While the involvement of parents in toy play confers many benefits for toddlers' socio-emotional development, the extent to which parents support each other's playful interactions with their toddlers is likely to be of importance also. The second part of this study, thereby, examined whether (i) parental play would be associated with toddlers' socio-emotional development and (ii) whether observed supportive and undermining coparenting would moderate the association between parents' play behaviours and toddlers' socio-emotional development.

Method

Participants

This study comprised seventy-six families with toddlers aged between 21 to 27 months. Mothers were aged between 24 to 48 years ($M = 34.03$, $SD = 7.23$) and fathers aged between 23 and 45 years ($M = 34.45$, $SD = 9.71$). Among mothers, 16% had complete second-level/third level non-degree, 79% had bachelors/master's degree and 5% had a doctoral degree. Among fathers, 5% had a second-level certificate, 26% had completed second-level/third level non-degree, 65% had bachelors/master's degree and 4% had doctoral degrees. The percentage of missing data was 1.29 (1 family) owing to non-response on questionnaire items relating to toddlers' socio-emotional development. Given

that this was a very small percentage of data missing, listwise deletion was chosen for handling the missing data. The study retained sufficient power to detect significant effects.

Procedure

Triadic parent-child interactions were recorded during a free-play task that lasted 5 minutes. A box containing an assortment of toys (blocks, toy cars, ball, Mr. Potato Head) designed to elicit creativity, humour and imagination were provided to the families who were then requested to play with them as they normally would at home.

Measures

Socio-demographic data

Both parents provided information about their age, education level, their child's age and gender.

Parental play behaviours

Parental play behaviours during the 5-minute free-play sessions were coded microanalytically using an observational coding scheme designed specifically for this study. The scheme classifies the play-based interaction in terms of duration of time parents engage in three mutually exclusive behaviours; toy play involving toy touch or toy handling, verbal facilitation (talking only) and observation of toddlers' play.

Observed coparenting dynamics

Supportive and undermining coparenting dynamics observed during a free-play session was assessed globally using a five-point scale ranging from very high to very low. Supportive coparenting was indexed by scales that measured the level of cooperation, warmth and pleasure. Undermining coparenting was indexed by scales that measured the level of competition, coldness and displeasure.

Note: Parental play behaviours and coparenting dynamics were rated by two separate teams of coders.

Bayley Scale of Infant Development- 3rd Edition (BSID-III) (Bayley 2006)

Toddlers' development was assessed by the BSID-III. The BSID is an individually administered standardised instrument that assesses the developmental functioning and competencies of infants and toddlers (aged between 1 to 42 months). Toddlers' socio-emotional development was assessed via maternal reports as previous research supports its predictive validity for later child development outcomes as compared to others' reports (Kwon et al., 2013). The socio-emotional scale focuses on the achievement of social and emotional milestones assesses toddlers' skills pertaining to their self-regulation capacities and their interest in the world, including the ability to communicate needs, engage others and establish relationships, use a range of emotions in an interactive and purposeful manner and use emotional signals and gestures to solve problems.

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

Analyses were conducted using SPSS version 25. Data were checked for normality to proceed with parametric statistics. In addition, moderation analyses were carried out using SPSS macro PROCESS v 3.0 (Hayes, 2018) to study interaction effects between parents' play behaviours and supportive and undermining coparenting in predicting toddlers' socio-emotional development. Power analysis revealed that the sample size to detect a medium effect size ($f^2=.25$) and the analysis showed that an n of 48 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). Table 4.3.3

shows descriptive statistics for child and parent variables. According to the BSID-III (2006), 77% of the toddlers in the current study were categorised as having average socio-emotional competencies, 10% as below average (within -1 and -2 SD of the mean) and 13% as above average (within +1 and +2SD of the mean).

Table 4.3.3

Descriptive statistics for mothers' and fathers' play behaviours, coparenting behaviours and toddlers' socio-emotional development (N = 76).

Study variables	<i>M</i>	<i>SD</i>	Min-Max
Maternal Toy play (secs)	113.95	62.63	0.00-253.72
Maternal Verbal Facilitation (secs)	39.69	23.25	1.08- 105.76
Maternal Observation (secs)	129.11	57.68	10.80 -259.60
Paternal Toy play (secs)	125.74	66.08	0.00 -55.76
Paternal Verbal Facilitation (secs)	28.76	20.91	0.00 -109.60
Paternal Observation (secs)	131.44	56.49	8.04 -236.44
Coparenting Supportiveness (pooled mean of the three scales)	3.43	0.91	1.20 -5.00
Coparenting Undermining (pooled mean of the three scales)	1.46	0.52	1.00 -3.80
Socio-emotional BSID Composite Score	110.59	16.81	65.00 -140.00

*secs = seconds

To test for associations between parents' play behaviours and toddlers' socio-emotional development correlation coefficients [bootstrapped bias-corrected confidence intervals based on 1000 samples] were computed-(see Table 4.3.4). Mothers' toy play was

positively correlated, $r(76) = .27, p = .01$, 95% CL (0.02, .48) and verbal facilitation was negatively correlated, $r(76) = -.27, p = .01$, 95% CL (-0.42, -.09) with toddlers' socio-emotional development. Both coefficients are indicative of a small effect size. No significant associations were observed between mothers' observation, fathers' engagement in toy play, verbal facilitation, observation and toddlers' socio-emotional development.

Table 4.3.4

Bivariate correlations among maternal and paternal toy play, verbal facilitation, observation and toddlers' socio-emotional development (N = 76)

Study variables	1	2	3	4	5	6	7
1. Maternal toy play							
2. Maternal verbal facilitation	-.34**						
3. Maternal observation	-.86**	.00					
4. Paternal toy play	-.09	-.02	.14				
5. Paternal verbal facilitation	-.01	.13	-.01	-.49**			
6. Paternal observation	.11	.00	-.12	-.91**	.00		
7. Socio-emotional BSID Composite Score	.27*	-.27*	-.21	-.15	-.11	.17	

** $p < .01$; * $p < .05$

In addition, paired t-tests revealed mothers significantly differed from fathers only in relation to verbal facilitation. Mothers spent significantly more time engaging in verbal facilitation ($M = 39.69$, $SD = 23.25$) compared to fathers ($M = 28.76$, $SD = 20.91$); $t(75) = -3.302, p = .001$ (see Fig. 4.3.4). Toddlers' age was not correlated with their socio-emotional development and was not included in further analyses.

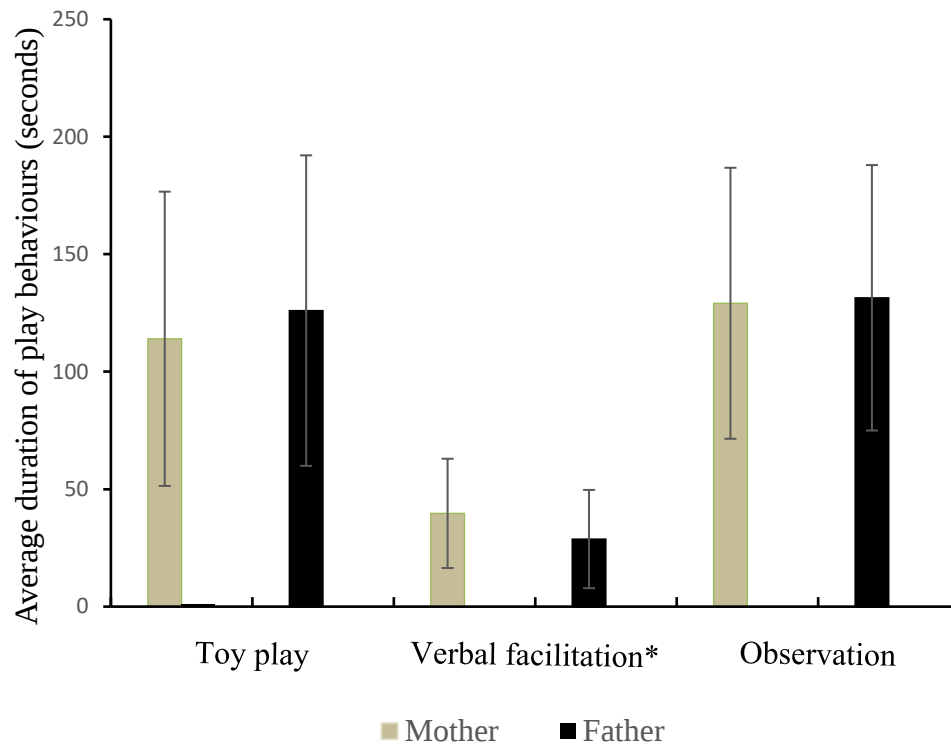


Figure 4.3.4. Duration (in secs) of parental time spent in toy play, verbal facilitation of play and observation of play (* $p < .01$)

Next, the study investigated whether supportive coparenting moderated the association between parents' play behaviours and toddlers' socio-emotional scores on the BSID. No multicollinearity between the independent and moderator variable was detected, $r(76) = .14$, $p = .10$, $VIF = 1.02$. Controlling for parent age which was negatively associated with supportive coparenting, $r(76) = -.26$, $p = .02$ (mothers) and $r(76) = -.24$, $p = .03$ (fathers), significant interaction effects were observed only between mothers' toy play and supportive coparenting (see Table 4.3.5). The interaction between mothers' toy play and coparenting behaviours was positive and statistically significant and accounted for 7% of the variance ($R^2 \Delta = .07$, $p = .01$). No significant moderation effects were observed for mothers' verbal facilitation, mothers' observation or any of fathers' play behaviours.

Table 4.3.5

Regressions testing supportive coparenting as a moderator of the associations between parental play and toddlers' socio-emotional development controlling for parent age, (N = 76)

	Socio-emotional development		
	<i>b</i>	<i>SE</i>	95% CL
Mothers' toy play	-0.24	0.12	-0.49 - 0.00
Supportive coparenting	-6.86	4.32	-15.49 - 1.76
Mothers' toy play x Supportive coparenting	0.08*	0.03	0.01 - 0.15
Mothers' verbal facilitation	0.10	0.35	-0.60 - 0.82
Supportive coparenting	5.17	4.18	-3.17 - 13.53
Mothers' verbal facilitation x Supportive coparenting	-0.07	0.10	-0.28 - 0.12
Mothers' observation	0.15	0.12	-0.09 - 0.40
Supportive coparenting	10.69	4.93	0.86 - 20.53
Mothers' observation x Supportive Coparenting	-0.06	0.03	-0.13 - 0.01
Fathers' toy play	-0.03	.02	-0.09 - 0.02
Supportive coparenting	4.02	2.11	-0.18 - 8.24
Fathers' toy play x supportive coparenting	-0.03	.003	-0.10 - 0.03
Fathers' verbal facilitation	-0.05	0.09	-0.24 - 0.12
Supportive coparenting	3.92	2.08	-0.22 - 8.07
Fathers' verbal facilitation x supportive coparenting	0.15	0.09	-0.04 - 0.34
Fathers' observation	0.04	0.03	-0.02 - 0.11
Supportive coparenting	4.19	2.14	-0.02 - 0.12
Fathers' observation x supportive coparenting	0.05	0.03	-0.02 - 0.12

* $p < .05$

Examination of the interaction plots (see Fig. 4.3.5) showed at low levels (16th percentile) of coparental supportiveness, the association between mothers' toy play (values on x-axis signify -1 SD, Mean and +1 SD) and toddlers' socio-emotional development was not significant ($b = -0.04$, 95% CI, -0.14-0.05, $t = -0.80$, $SE = 0.05$, $p = .425$). However,

the regression slopes at moderate (50th percentile; $b = 0.06$, 95% CI, -0.00-0.12, $t = 2.13$, $SE = 0.02$, $p = .03$) and high levels (84th percentile; $b = 0.13$, 95% CI, 0.05-0.21, $t = 3.25$, $SE = 0.04$, $p = .001$) of coparental supportiveness were significantly different from zero indicating that maternal toy play is positively associated with socio-emotional development when coparental supportiveness is moderate or high but not when it is low. Within a less supportive coparenting context, there was no longer a significant relation between maternal toy play and toddlers' socio-emotional development.

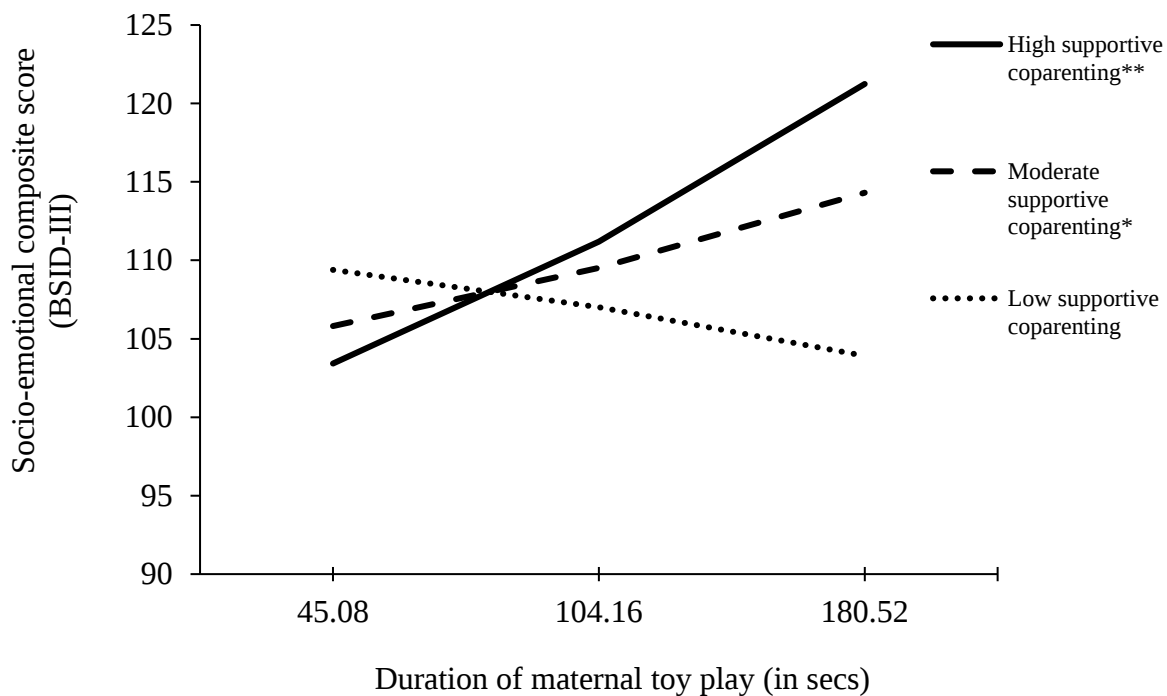


Figure 4.3.5. The conditional effect of maternal toy play on toddlers' socio-emotional development as a function of supportive coparenting (** $p < .01$; * $p < .05$)

Next, the study investigated whether undermining coparenting moderated the association between parents' play behaviours and toddlers' socio-emotional scores on the BSID. No multicollinearity between the independent and moderator variable was detected, $r(76) = .27$, $p = .07$, $VIF = 1.00$. Parent age was not significantly associated with

undermining coparenting, $r(76) = .13, p = .23$ (mothers) and $r(76) = .20, p = .07$ (fathers), and was hence not controlled for in the analyses. No significant interaction effects were observed for mothers' or fathers' play behaviours and undermining coparenting (see Table 4.3.6).

Table 4.3.6

Regressions testing undermining coparenting as a moderator of the associations between parental play and toddlers' socio-emotional development, (N = 76)

	Socio-emotional development		
	<i>b</i>	<i>SE</i>	95% CL
Mothers' toy play	-0.06	0.03	-0.00 - 0.12
Undermining coparenting	-6.06	3.54	-13.14 - 1.00
Mothers' toy play x Undermining coparenting	-0.09	0.07	-0.23 - 0.04
Mothers' verbal facilitation	-0.16	0.08	-0.33 - 0.00
Undermining coparenting	-5.65	3.64	-12.92 - 1.60
Mothers' verbal facilitation x Undermining coparenting	0.14	0.21	-0.28 - 0.57
Mothers' observation	-0.05	0.03	-0.12 - 0.02
Undermining coparenting	-6.11	3.59	-13.28 - 1.04
Mothers' observation x Undermining Coparenting	0.10	0.07	-0.04 - 0.26
Fathers' toy play	-0.02	0.03	-0.08 - 0.03
Undermining coparenting	-5.77	4.22	-14.20 - 2.64
Fathers' toy play x Undermining coparenting	0.02	0.06	-.09 - 0.15
Fathers' verbal facilitation	-0.10	0.09	-0.28 - 0.07
Undermining coparenting	-6.86	3.71	-14.26 - 0.53
Fathers' verbal facilitation x Undermining coparenting	-0.13	0.17	-0.47 - 0.20
Fathers' observation	0.03	0.03	-.03 - 0.11
Undermining coparenting	-6.23	4.37	-14.95 - 2.48
Fathers' observation x Undermining coparenting	-0.05	0.06	-0.19 - .07

Discussion

This study examined the associations between parental play behaviours and toddlers' socio-emotional development. Additionally, it examined the role of supportive coparenting dynamics in the association between parental play behaviours and toddlers' socio-emotional development. First, findings from this study show that when mothers model play strategies as a way of facilitating play, toddlers are better able to sustain attention, communicate needs effectively, self-regulate appropriately in the face of challenges and use appropriate emotional signals to solve problems as measured by mothers' reports on the BSID.

Prior research shows that manual handling of objects in parent-child play (such as when parents or children grab objects and bring them closer to the eye), makes the objects being large in the visual field (Pereira, Yu, Smith, & Shen, 2009). This blocks the view of other toys in the play environment which has been suggested to benefit infants' and toddlers' object recognition and object word learning (Pereira et al., 2009). Such object play involving touch can, in turn, facilitate more social interactions with mature partners like parents. More opportunities are created that allow (i) parents and toddlers to share emotions around the object, (ii) parents to teach important social skills such as listening, sharing toys, turn-taking and cooperating and (iii) parents to regulate toddlers' emotions and behaviours during high activity levels. In turn, toddlers with better socio-emotional competencies may elicit more toy play from mothers. This finding provides a new perspective on the relation between mothers' object play and toddlers' emerging socio-emotional competencies.

However, further analysis indicated that this association was significant only within the context of moderate to high levels of supportive coparenting which is in line with previous research (Schoppe-Sullivan et al., 2009) and highlights the importance of the coparenting relationship for toddlers' socio-emotional competencies. Thus, while mothers' toy play is crucial for toddlers' emerging socio-emotional competencies, when this is embedded within a safe and reliable family environment characterised by supportive coparenting, toddlers might be afforded greater opportunities to observe and learn adaptive socio-emotional skills.

Within a less supportive coparenting environment, no significant associations were observed between maternal toy play and toddlers' socio-emotional competencies. This finding might suggest that toy play within a less supportive coparenting environment is characterised by greater disagreements and less cooperative behaviours between parents. Parents may possess fewer resources required to resolve disagreements with minimal conflict. Such behaviours in turn can distract parents' and toddlers' attention from the play task. They can also be imitated by toddlers at home and in other social situations thereby negating any benefits of toy play accrued. This insignificant finding relating to low coparenting supportiveness could also be attributed to the smaller proportion of triads characterised as being low in supportiveness hence we may lack sufficient sensitivity to adequately assess for a relationship with this group. These findings should therefore be interpreted with caution.

The positive relationship between maternal toy play and toddlers' socio-emotional development was however not dependent on the extent to which parents exhibited undermining coparenting behaviours. One possible reason is that the mean level of

observed coparenting undermining was 1.46 within an observed range of 1.00 to 3.80 reflecting that undermining coparenting behaviours were never truly observed in the current study. Future investigations in samples that exhibit the full range of behaviours need to be undertaken to illuminate our findings further.

Next, the finding relating to the negative association between maternal verbal facilitation and socio-emotional competencies might indicate that sole reliance on speech to facilitate play can be confusing for toddlers which might explain the negative association between mothers' verbal facilitation of play and toddlers' socio-emotional competencies. Complete absence of visual cues (toy play) might give toddlers fewer opportunities to learn key socio-emotional skills including sharing of toys, turn-taking, controlling impulses and focusing on tasks. While the current study assessed the duration of mothers' verbal facilitation of play, future investigations examining its *quality* in relation to toddlers' socio-emotional development might help to elucidate these findings.

In relation to fathers, no significant associations were observed between fathers' toy play as coded and toddlers' socio-emotional development. While mothers and fathers spent the same amount of time engaged in toy play there were some observable differences in play strategies they employed to keep toddlers engaged. For instance, fathers were observed as adopting a less goal-oriented approach to play as compared to mothers. They also appeared to be less likely than mothers to follow the child's lead or attention, frequently shifting from one play activity to another and introducing strategies that presented as very challenging for toddlers. However, given that this is anecdotal evidence, future research that systematically tests these differences in mothers' and fathers' play strategies, particularly within a triadic context, will help to illustrate this finding further.

A recent study reported no significant differences in the ways mothers and fathers engaged with their toddlers during dyadic play interactions such that both parents were equally sensitive and cognitively stimulating (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2017). However, the findings in the current study suggest that a triadic context, via coparenting dynamics, presents a unique, complex environment that modifies the strategies employed by mothers and fathers during toy play. Such modifications, in turn, have important implications for toddlers' social and emotional competencies.

Additionally, it might be that there are other aspects of fathers' play behaviours beyond toy play (e.g. rough and tumble play, rule-based games or outdoor play) that are more proximally associated with toddlers' socio-emotional competencies. Future investigations comparing parental toy play in dyadic and triadic contexts might help to illuminate the unique nature of mother-father-toddler triadic interaction. In addition, further analyses of data of this type could attempt to disentangle the effects of the simultaneous nature of parents' joint play from individual play in the presence of the other parent.

Findings from this study need to be considered in light of a limitation. Toddlers' socio-emotional competencies were assessed via parental reports and although parents are considered to be reliable reporters of their children's developmental competencies and temperamental traits, self-reports can nonetheless be subject to biases (Siefer, 2002). Thus, similar to toddlers' temperamental traits, it is not clear whether toddlers' socio-emotional competencies as determined in this study are the actual skills or parents' perceptions of their toddlers' skills. Future studies that examine toddlers' social and emotional skills (ranging from attention to regulation of emotions and other key social skills) as observed during interactions with parents can help to illuminate our findings further.

Nonetheless, the findings highlight the importance of taking family dynamics into consideration when examining relations between parents' play behaviours and toddlers' socio-emotional competencies. While no significant associations between fathers' play behaviours and toddlers' socio-emotional competencies were observed in the current study, future investigations examining specific play *strategies* employed by fathers might help reveal underlying processes that link toy play with toddlers' social and emotional competencies. Intervention plans designed to enhance both individual parental play skills as well family dynamics as a whole may reap greater benefits in comparison to those targeting one or the other. Future research may identify new associations between parental toy play and coparenting dynamics expanding also to other domains of child development.

**Study 4: Part 1. Communicative functions of parents' child-directed speech
across dyadic and triadic contexts**

Abstract

This study examined the roles of parental gender and context in the communicative functions of parents' child-directed speech. Seventy-three families with toddlers participated in the study. Dyadic and triadic parent-toddler interactions were videotaped during structured play activities. Results indicated context-dependent variability in parents' facilitative speech and gentle guidance. Parental gender effects were observed in parents' directive speech, but no gender or contextual effects were observed in parents' referential speech. Results suggest the need for a closer examination of parental gender and contextual factors related to parents' speech functions.

Introduction

An important aspect of parent-child play relates to the speech that parents direct at their infants and toddlers (CDS). This speech serves a host of functions ranging from seeking information from toddlers (facilitative speech), directing and regulating their behaviours (directive speech), encouraging their behaviours (gentle guidance) and familiarising them with novel objects and experiences in the environment (referential speech). The majority of research has examined the linguistic properties of CDS, from its acoustic and prosodic aspects (Rowe & Snow 2020) to debates over the relative importance of quantity versus quality for child outcomes (Genovese et al., 2020; Montag et al., 2018). Relatively less attention has been devoted to examining the communicative functions of mothers' and fathers' CDS.

Additionally, how the communicative functions of CDS can vary on the basis of the interactional context (dyad versus triad) has rarely been examined. Most investigations of the variations in mothers' and fathers' CDS have been conducted in dyadic parent-child interactions (Menashe & Atzaba-Poria, 2016; Rowe et al., 2004; Rowe, 2008; Tamis LeMonda et al., 2012a, b). This neglects evidence that children acquire language not only from independent contributors but also via the shared experience created by interdependent communications (Renzi et al., 2017).

The first part of the current study aimed to answer the following research question: Do the communicative functions of parental CDS vary by parent gender and across dyadic and triadic contexts during structured play activities with toddlers? Specifically, the study looked at parental use of facilitative and directive speech, gentle guidance and referential speech in relation to the overall speech produced by parents during play with toddlers.

Method

Participants

This study comprised 73 families with toddlers whose mothers were aged between 25 to 46 years ($M = 33.96$, $SD = 6.99$) and fathers aged between 23 and 55 years ($M = 34.90$, $SD = 8.77$). Among mothers, 18% had completed second-level/third level non-degree education, 75% had a bachelors/master's degree and 7% had a doctoral degree. Among fathers, 7% had completed second-level education, 25% had completed second-level/third level non-degree education, 64% of fathers had a bachelors/master's degree and 4% had a doctoral degree. The percentage of missing data was 2.59 (2 families) owing to missing video-recordings of dyadic parent-child interaction. Given that this percentage of missing data was very small, listwise deletion was chosen for handling the missing data. The study retained sufficient power to detect significant effects. Additionally, data from one family in the dyadic interaction was excluded due to the presence of a second child and from one other family due to a truncated video-recording (less than 5 minutes).

Procedure

Parent-child interactions were video recorded during a triadic structured play task followed by a dyadic structured play task. The structured play tasks differed for the dyadic and triadic contexts but were selected to be similarly challenging. In the triadic context, both parents and toddler were presented with a teddy bear dressing skills puzzle board. In the dyadic context, magnetic puzzle boards of either a fish or car design were presented to the parent and toddler. When one parent interacted with the toddler in the dyadic context, the other parent left the room to complete a set of questionnaires. Each structured task

lasted for five minutes and parents were requested to try and help their child complete as many parts of the board as possible. Both structured tasks presented a challenge to toddlers for which parental assistance was required. The order of the dyadic sessions was counterbalanced with 50% of the interactions beginning with either the mother-child dyad or the father-child dyad triadic interactions.

Measures

Socio-demographic data

Both parents provided information about their age, education level, their child's age and gender.

Parental CDS

Parental CDS was transcribed verbatim by trained research assistants using standardised conventions (MacWhinney, 2000), Codes for the Analysis of Human Language (CHAT). The transcripts were analysed using the Computerised Language Analysis software (CLAN) to determine the total number of utterances produced by parents and toddlers in dyadic and triadic contexts. An utterance was defined as a unit of speech marked by a change in intonation, pause or change in grammatical structure (Miller & Chapman, 2004). Following this, proportions of four broad categories of parental CDS were calculated: (1) facilitative speech: all open-ended, yes/no and prompt questions (2) directive speech: all commands and prohibitions (3) gentle guidance: all suggestions, praise and encouragement and (4) referential speech: all descriptive and labelling utterances. Proportions were calculated to account for the amount of each type of speech produced by parents relative to all other types of child-directed speech.

Toddlers' speech in dyadic and triadic interactions

Toddlers' speech was transcribed verbatim using a standardised format, Codes for the Human Analysis of Transcripts (CHAT) and the transcripts analysed using CLAN to determine the total number of utterances produced.

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

Analyses were carried out using SPSS version 25 and data were checked for normality to proceed with parametric statistics. Power analysis revealed that the sample size to detect a medium effect size ($f^2=.25$) and the analysis showed that an n of 32 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). Tables 4.4.1 and 4.4.2 show the descriptive statistics for parental utterances and associated communicative functions. To examine the combined effects of context and parental gender on mothers' and fathers' CDS, repeated general linear mixed-effects models (GLM) with posthoc tests were conducted (see Table 4.4.3). In relation to parental utterances, both mothers and fathers produced significantly more utterances in the dyadic as compared to the triadic contexts although the decrease in utterance production in the triadic context was more pronounced for fathers than mothers. A significant interaction effect of context and parents' gender on mothers' and fathers' utterances was also observed. It should be noted that although both mothers and fathers produced fewer utterances in the triadic context, toddlers hear more utterances from the combined input of mothers and fathers in the triadic context than in the dyadic context. Paired t -tests showed that parents' combined utterances in the triadic context ($M = 93.08$, $SD = 28.86$) were significantly higher than that in the

dyadic context (average of the means for dyadic interactions with mothers and dyadic interactions with fathers) ($M = 86.15$, $SD = 18.92$); $t(72) = -2.290$, $p = .02$.

In relation to the communicative functions of parental CDS, there was a main effect only of context on parents' facilitative speech and gentle guidance such that both parents used significantly more facilitative speech and less gentle guidance in the triadic context. There was also a main effect of parental gender on parents' directive speech such that fathers produced more directives than mothers in both contexts. No main or interaction effects were observed for parents' referential speech (see Fig. 4.4.1-4.4.5). In addition, a one-way repeated measures ANOVA with posthoc tests compared toddlers' verbosity in the dyadic context with fathers and mothers and in the triadic context. There was a significant effect of context on toddlers' verbosity, Wilks' Lambda = .82, $F(2, 70) = 7.321$, $p = .001$. Specifically, toddlers produced significantly more utterances in the dyadic context with fathers ($M = 38.16$, $SD = 19.16$) than in the triadic context ($M = 29.75$, $SD = 14.06$); $t(71) = 3.842$, $p = .000$. However, there was no significant difference in toddlers' verbosity between the dyadic context with mothers ($M = 32.97$, $SD = 20.12$) and the triadic context; $t(71) = 1.578$, $p = .119$.

Table 4.4.1

Descriptive statistics for mothers' and fathers' total number of utterances across dyadic and triadic contexts (N = 73)

	Mean	SD	Min	Max
Mother				
Dyad	86.36	25.79	37	171
Triad	54.24	21.64	12	111
Father				
Dyad	85.93	22.97	38	144
Triad	38.83	18.29	0	88

Table 4.4.2

Descriptive statistics for the proportions of functions of parents' CDS across dyadic and triadic contexts (N = 73)

	Mother				Father			
	Dyad		Triad		Dyad		Triad	
	M(SD)	Min-Max	M(SD)	Min-Max	M(SD)	Min-Max	M(SD)	Min-Max
Facilitative speech	34.53 (12.50)	4.55-70.97	39.87 (12.82)	9.09-66.00	33.53 (13.13)	0.00-70.00	37.06 (15.26)	0.00-86.27
Directive speech	19.42 (12.01)	0.00-59.48	21.19 (12.03)	0.00-51.97	25.02 (14.60)	1.25-71.90	22.88 (15.56)	0.00-64.00
Gentle guidance	9.19 (7.20)	0.00-32.89	6.13 (5.62)	0.00-27.78	6.98 (6.51)	0.00-37.29	6.06 (6.05)	0.00-27.59
Referential speech	36.86 (11.75)	18.42-65.48	32.78 (11.73)	12.31-72.41	34.47 (11.41)	14.88-63.16	34.00 (21.01)	3.33-175.00

Table 4.4.3

Repeated GLM for parents' total number of utterances, facilitative speech, directive speech, gentle guidance and referential speech by parent gender and context (N = 73)

Variable		MS	F	n ²
Utterances	Parent gender	4584.41	6.63*	.04
	Context	114,531.12	373.14***	.72
	Parent gender* Context	4091.26	13.32***	.08
Facilitative Speech	Parent gender	190.43	.73	.00
	Context	1311.93	13.76***	.08
	Parent gender* Context	85.01	.89	.00
Directive Speech	Parent gender	1324.09	5.04*	.03
	Context	25.42	.23	.00
	Parent gender* Context	98.54	.89	.00
Gentle guidance	Parent gender	85.82	1.55	.01
	Context	300.75	11.54**	.07
	Parent gender* Context	76.53	2.93	.02
Referential speech	Parent gender	1.65	.00	.00
	Context	149.98	.83	.00
	Parent gender* Context	503.36	2.81	.01

Notes. MS: mean square *p<0.05; **p<0.01; ***p<0.001

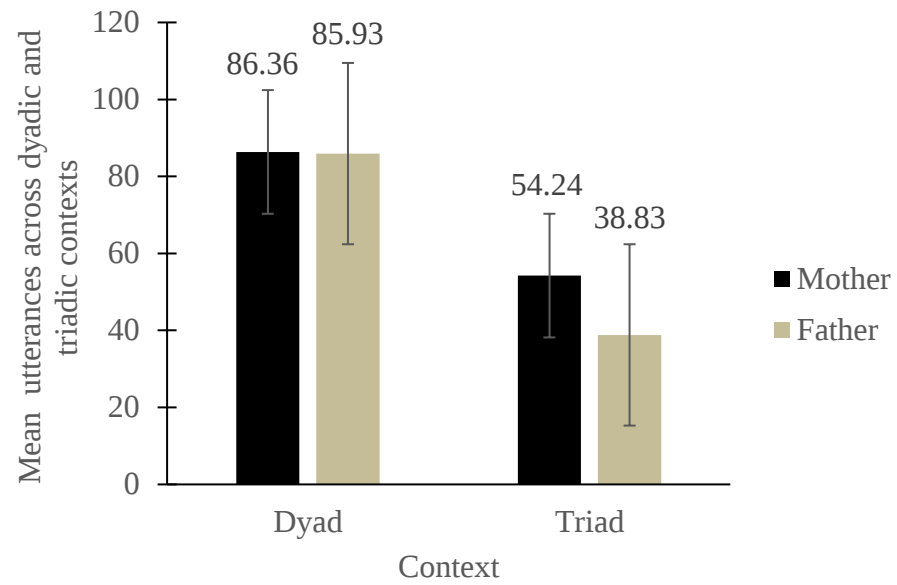


Figure 4.4.1: Mothers' and fathers' utterances across dyadic and triadic contexts

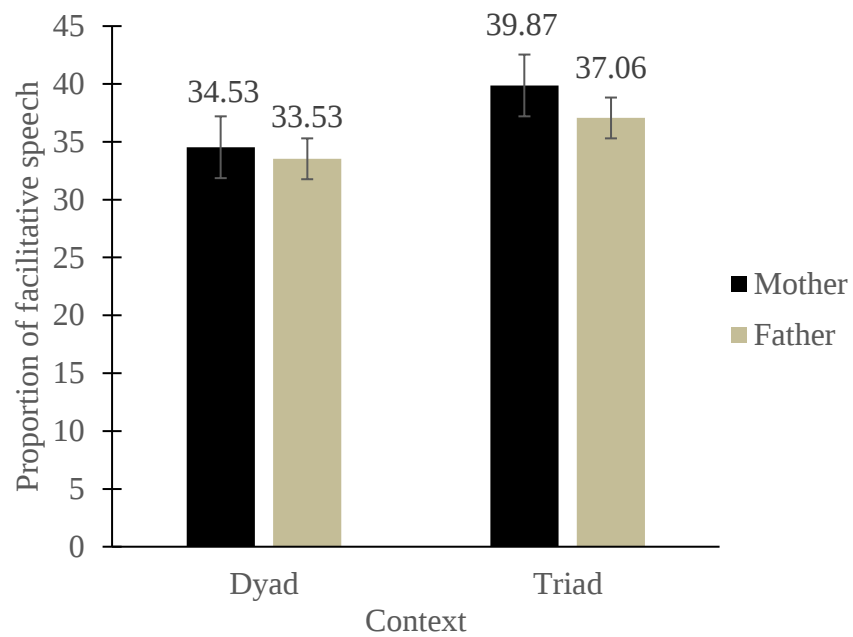


Figure 4.4.2: Mothers' and fathers' facilitative speech across dyadic and triadic contexts

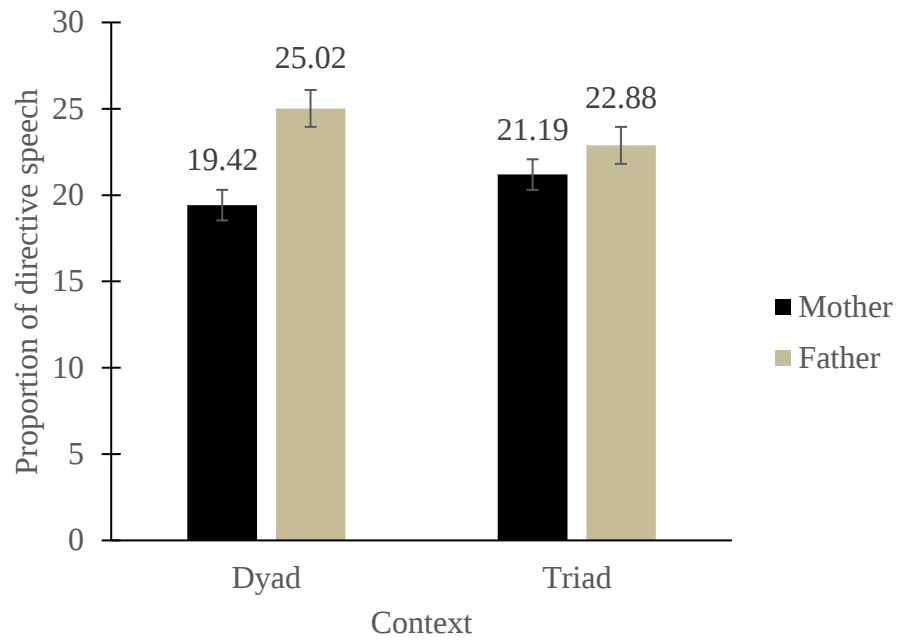


Figure 4.4.3: Mothers' and fathers' directive speech across dyadic and triadic contexts

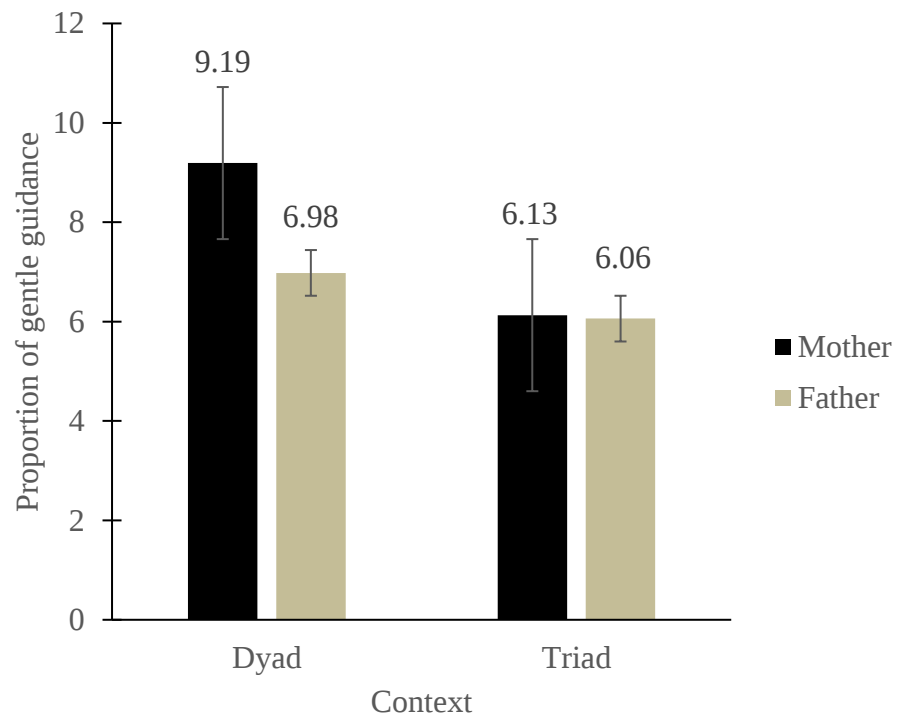


Figure 4.4.4: Mothers' and fathers' gentle guidance across dyadic and triadic contexts

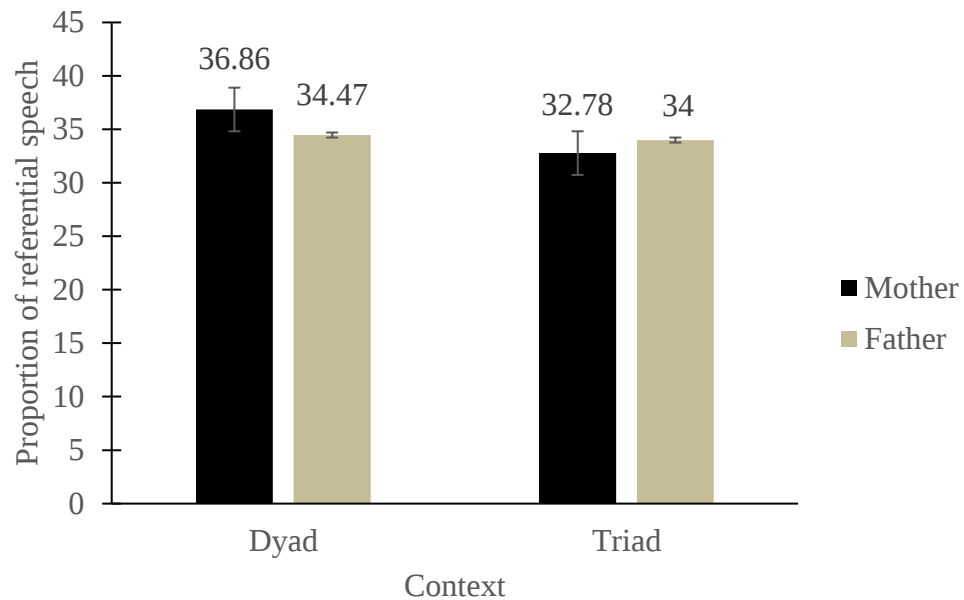


Figure 4.4.5: Mothers' and fathers' referential speech across dyadic and triadic contexts

Discussion

This study examined the communicative functions of parental CDS in dyadic and triadic contexts. Specifically, parents' use of speech that facilitates or limits toddlers' engagement in discourse, guides toddlers' behaviours in non-assertive and encouraging ways and teaches or provides information about objects and events in the environment were examined. To our knowledge, no other study has offered an in-depth examination of the role of context and parental gender in the communicative functions of parental CDS.

First, in terms of the total number of utterances, both parent gender and context played significant roles in determining the total amount of parental CDS. Mothers and fathers produced significantly fewer utterances in the triadic context. This was expected given that triadic interactions involve more participants who contribute to the ongoing

interactions providing less scope for one-on-one parent-child interactions (McHale & Fivaz-Depeursinge, 1999).

It was observed that variability in the amount of speech produced across the dyadic and triadic contexts was more pronounced for fathers than mothers. This finding corroborates previous research (Bingham et al., 2013; Goldberg et al., 2002; Golinkoff & Ames, 1979) and may be attributable to family roles and parenting dynamics (Johnson, 2001; Pancsofar & Vernon-Feagans, 2006). Even with greater paternal involvement in parenting and higher maternal employment rates, mothers continue to devote more time to childcare (Raley, Biabchi, & Wang, 2012). As such, within a triadic context, fathers may feel less responsible for leading the interaction and thereby adopt a more peripheral role. Thus, even though this study is ascribing differences in parental CDS to parental gender, it is likely that such differences are at least partly attributable to caregiver roles within the family system. Disentangling the effects of the two is particularly challenging in the context of the developmental period under consideration.

As already noted, even though both parents produced fewer utterances in the triadic context, toddlers heard significantly more utterances from the combined parental input in the triadic context than in the dyadic context. This suggests that the triadic family-level interactional context presents an ‘additive’ linguistic environment that may have important implications for children’s later language outcomes. Further analysis showed that toddlers produced significantly more utterances in the dyadic context with fathers (but not significantly more in the dyadic context with mothers) than in the triadic one. Greater toddler verbosity in the dyadic contexts can be attributed to triadic interactions presenting as a more challenging context to toddlers who must engage with, and respond to, two

communicative partners simultaneously. This is not to say that family-level interactions impede children's verbosity but that it may represent a complex interactional environment for toddlers whose linguistic competencies are limited but rapidly advancing. Aside from directiveness (discussed later), no significant differences in mothers' and fathers' CDS in the dyadic context were observed. So greater toddler verbosity in the dyadic context with fathers needs additional investigation. It is suggested that there are other aspects of fathers' CDS that can account for this finding. For instance, fathers may produce more directive utterances that require verbal responses from toddlers (e.g. "*say thank you*"). Further research investigating such aspects of parents' CDS may help to illuminate these findings further.

In relation to the communicative functions of parental CDS, context played a central role in mothers' and fathers' use of facilitative speech. Both mothers and fathers used significantly more facilitative speech in the triadic context. Within this context, parents may be more focused on keeping their toddlers engaged in the play process by asking more questions. However, even though toddlers hear significantly more questions, it may be challenging for them to provide verbal responses to two communicative partners. Future research examining toddlers' responses to parental questions may help to explain these findings further. In addition, parental questions may also help to sustain or redirect toddlers' attention to the play task and research examining facilitative CDS in relation to children's behavioural and cognitive skills may lead to novel findings.

Next, it was observed that context played an important role in parental gentle guidance. Both parents used more gentle guidance in the dyadic context than in the triadic context. This may be because the responsibility of praising and encouraging toddlers during

play gets shared in the triadic context. However, it should be noted that there was a very low incidence of such utterances overall (less than 10% of utterances). Therefore, findings around this specific function of CDS need to be interpreted with caution.

Results showed that parental gender played a significant role in mothers' and fathers' use of directive speech. Fathers produced significantly more directives than mothers in the dyadic context and more directives in the triadic context (although this difference was observed to be non-significant). This finding corroborates previous research that fathers tend to be more directive in their interactions with young children (Brachfeld-Child et al., 1988; Goldberg et al., 2002; Leaper et al., 1998). This might indicate that mothers and fathers have different goals for their interactions with toddlers (Rowe et al., 2004). Fathers may be more concerned with directing their toddlers' behaviours and verbal responses than mothers.

Finally, results showed that neither parental gender nor context played a significant role in mothers' and fathers' use of referential speech. Both parents used similar amounts of referential speech in both contexts which can be partly attributed to the novelty of the toys used in the current study. In both contexts, parents had the responsibility of familiarising their toddlers with the novel play object and describing ongoing events during play which were central aspects to completing the task. As with the other communicative functions, toddlers in the triadic context hear more labelling and descriptive utterances from the combined input of both parents than in either dyadic context. Whether the family interactional environment offers additional benefits for toddlers' later language development is yet to be understood.

Findings from this study reflect the complex interactions and contributions of parental gender and interactional context to the functional aspects of parental CDS. While previous studies have mostly focused on the linguistic properties of parental CDS, this study makes an additional contribution by examining contextual variability in the communicative functions of parental CDS. Such investigations help to disentangle and identify the unique contributions of maternal and paternal speech to toddlers' language development.

Findings from this study should be considered in light of the fact that different toys were used in the dyadic and triadic sessions which may have influenced both the quantity and pragmatic functions of parental CDS. Although the toys were selected on the basis of being similarly challenging for this age group, equivalence was not directly tested and as such, it cannot be ruled out that toy differences may have influenced the findings across dyadic and triadic contexts.

**Study 4: Part 2. Associations between coparenting dynamics and the
communicative functions of parents' child-directed speech: Implications for toddlers'
language development**

Abstract

This study examined (i) associations between observed coparenting dynamics and mothers' and fathers' child-directed speech (CDS) and (ii) communicative functions of parents' CDS in relation to toddlers' language development. Seventy-three families with 21 to 27-month-old toddlers participated in the study. Triadic parent-toddler interactions were videotaped during a structured play activity. Results indicated that observed coparenting dynamics were not significantly associated with the communicative functions of mothers' and fathers' CDS. In relation to the associations between the communicative functions of parental CDS and toddlers' linguistic competencies, findings showed a significant positive association between mothers' use of facilitative speech and toddlers' utterances. Results are discussed in relation to the family systems perspective and existing research on the communicative functions of parental CDS and toddlers' language development.

Introduction

As demonstrated thus far, the context in which parent-child play interactions occurs has important implications for the communicative functions of mothers' and fathers' CDS. However, the coparenting relationship as an important source of influence on parental CDS in the triadic context has been given very little attention (Bingham et al., 2013). Given that research, albeit a handful of studies, has demonstrated the important role of family functioning (relating to the couple's marital dynamics) in parents' CDS (Cowan & Cowan, 1992; Fink et al., 2020; Pancsofar et al., 2008), it is unclear why more attention has not been devoted to understanding the role of coparenting dynamics in parental CDS.

Following on from the previous part of the study, this part aimed to contribute to a limited body of literature examining the role of the communicative functions of parental CDS in toddlers' language development. While most studies have analysed the linguistic characteristics of CDS and how they may be associated with child language outcomes (Hsu et al. 2017; Montag et al., 2018; Song et al., 2013; Stern et al., 1982), relatively few have focused on the functions of parental CDS (Paavola et al., 2018; Rowe et al., 2017; Tamis-LeMonda et al., 2012). Further investigation of associations between communicative functions and toddlers' language development (which relates to the second aim of the study) should be carried out as evidence from limited research suggests that different speech *types* influence toddlers' emerging linguistic competencies in differing ways.

The current study aimed to answer the following research questions: (1) Are observed coparenting dynamics associated with the communicative functions of parental CDS in a triadic structured-play interaction?; and (2) Are the communicative functions of parental CDS associated with toddlers' language development? Specifically, the study

looked at how observed coparental supportiveness and undermining behaviours during a structured-play task with toddlers were associated with parental CDS. The overall quantity of speech produced by parents during this triadic episode as well as the communicative functions of CDS as reflected by the use of facilitative and directive speech, gentle guidance strategies and referential speech were examined. Next, the bidirectional associations between these communicative functions of CDS and toddlers' overall language production and their expressive and receptive language development were examined.

Method

Participants

This study comprised 73 families with toddlers whose mothers were aged between 25 to 46 years ($M = 33.96$, $SD = 6.99$) and fathers aged between 23 and 55 years ($M = 34.90$, $SD = 8.77$). Among mothers, 18% had completed second-level/third level non-degree education, 75% had a bachelors/master's degree and 7% had a doctoral degree. Among fathers, 7% had completed second-level education, 25% had completed second-level/third level non-degree education, 64% of fathers had a bachelors/master's degree and 4% had a doctoral degree. For the percentage of missing data and the method for handling missing and excluded data please refer to Part 1 of this study.

Procedure

Parent-child interactions were video recorded during a triadic structured play task lasting 5 minutes. Both parents and toddler were presented with a teddy bear dressing skills puzzle board and parents were requested to try and help their child complete as many parts of the board as possible. The structured task presented a challenge to toddlers for which parental assistance was required.

Measures

Socio-demographic data

Both parents provided information about their age, education level, their child's age and gender.

Parental CDS

Parental CDS was transcribed verbatim by trained research assistants using standardised conventions (MacWhinney, 2000), Codes for the Analysis of Human Language (CHAT). Following this, proportions of (1) facilitative speech (2) directive speech (3) gentle guidance and (4) referential speech were calculated. Proportions were calculated to account for the amount of each type of speech produced by parents relative to all other types of child-directed speech.

Observed coparenting dynamics

Supportive and undermining coparenting dynamics observed during a free-play session was assessed globally using a five-point scale ranging from very high to very low. Supportive coparenting was indexed by scales that measured the level of cooperation, warmth and pleasure. Undermining coparenting was indexed by scales that measured the level of competition, coldness and displeasure.

Toddlers' speech in dyadic and triadic interactions

Toddlers' speech was transcribed verbatim using a standardised format, Codes for the Human Analysis of Transcripts (CHAT) and the transcripts analysed using CLAN to determine the total number of utterances produced.

Expressive and receptive language

Trained research assistants administered the language (expressive and receptive language) scale of the BSID. Expressive language skills pertain to the toddlers' ability to use words and language to label objects, express themselves and communicate their needs. Receptive language skills pertain to the toddlers' ability to understand vocabulary, grammar and tenses.

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

Analyses were carried out using SPSS version 25 and data were checked for normality to proceed with parametric statistics. Power analysis revealed that the sample size to detect a medium effect size ($f^2=.25$) and the analysis showed that an n of 42 would be needed to obtain statistical power at the recommended .80 level (Cohen, 1988). Tables 4.4.4 and 4.4.5 show descriptive statistics for parents' utterances, and proportions of facilitative, gentle guidance and directive speech in the triadic context.

Table 4.4.4

Descriptive statistics for mothers', fathers' total number of utterances in the triadic context (N=73)

Mother			Father		
Mean	SD	Min-Max	Mean	SD	Min-Max
54.24	21.64	12-111	38.83	18.29	0-88

Table 4.4.5

Descriptive statistics for the proportions of functions of parents' CDS in the triadic context (N=73)

	Mother			Father		
	Mean	SD	Min-Max	Mean	SD	Min-Max
Facilitative speech	30.93	12.82	9.09-66.60	37.06	15.26	0.00-86.27
Directive speech	21.19	12.03	0.00-51.97	22.88	15.56	0.00-64.00
Gentle guidance	6.13	5.62	0.00-27.78	6.06	6.05	0.00-27.59
Referential speech	32.78	11.73	12.31-72.41	34.00	21.01	3.33-175.00

Multiple regression analyses were conducted to examine whether parents' child-directed speech was predicted by observed coparenting dynamics. Preliminary analysis revealed that family demographics (child age and parent education) were not correlated with parents' child-directed speech and were hence not controlled for in the analyses. Tables 4.4.6 shows non-significant regression equations for observed coparenting dynamics predicting mothers' utterances, $F(2, 70) = 1.25, p = .29$; facilitative speech $F(2, 70) = 1.97, p = .14$; directive speech, $F(2, 70) = .48, p = .61$; gentle guidance, $F(2, 70) = .38, p = .68$ and referential speech, $F(2, 70) = 2.13, p = .09$. Table 4.4.7 shows non-significant regression equations for observed coparenting dynamics predicting fathers' utterances $F(2, 70) = .91, p = .40$; facilitative speech, $F(2, 70) = .08, p = .91$; directive speech, $F(2, 70) = .46, p = .62$; gentle guidance, $F(2, 70) = .80, p = .45$ and referential speech, $F(2, 70) = .01, p = .98$.

Table 4.4.6

Multiple regression analyses for observed coparenting dynamics predicting mothers' child-directed speech in the triadic context (N=73)

Predictor variable	# of Utterances			Facilitative speech			Directive speech			Gentle guidance			Referential speech		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
Supportive coparenting	4.79	3.05	.18	-2.18	1.79	-.14	1.62	1.71	.11	-.69	.80	-.14	1.20	1.62	.08
Undermining coparenting	.79	6.81	.01	-7.06	4.00	-.17	-.38	3.83	-.01	-.51	1.7	-.03	4.4	2.60	.19
R ²		.07			.05			.01			.01			.06	
F		1.25			1.97			.48			.38			2.13	

** p < .01; *p < .05

Table 4.4.7

Multiple regression analyses for observed coparenting dynamics predicting fathers' child-directed speech in the triadic context (N=73)

Predictor variable	# of Utterances			Facilitative speech			Directive speech			Gentle guidance			Referential speech		
	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta	B	SE	Beta
Supportive coparenting	2.54	2.59	.11	-.09	2.20	-.00	-1.05	2.32	-.05	-.85	.86	-.12	.53	3.03	.02
Undermining coparenting	6.31	5.79	.13	1.94	4.90	-.07	-4.58	4.97	-.11	-1.87	1.92	-.11	-.10	6.75	.00
R ²		.02			.00			.01			.02			.00	
F		.91			.08			.46			.80			.01	

** p < .01; *p < .05

Table 4.4.8 shows mother-child language associations and father-child language associations in the triadic context [bootstrapped bias corrected confidence intervals based on 1000 samples were computed]. Mothers' use of facilitative speech was the only communicative function of speech positively associated with toddlers' total number of utterances. Fathers' quantity of CDS and functions of CDS were not significantly correlated with toddlers' language.

Table 4.4.8

Bivariate correlations among mothers' and fathers' child-directed speech and toddlers' language in the triadic context (N=73)

Child language		Mothers' CDS				Fathers' CDS				
Variable	#	Facilitative	Directive	Gentle	Referential	#	Facilitative	Directive	Gentle	Referential
	Utterances	speech	speech	guidance	speech	Utterances	speech	speech	guidance	speech
# Utterances	.12	.25*	-.18	-.00	-.08	-.11	.08	-.12	-.17	.05
EXP	.08	.21	-.20	.00	-.01	.00	.09	-.10	-.01	.02
REC	.13	.19	-.10	.13	-.17	.05	-.06	.19	.07	.07

EXP: expressive language; REC: receptive language

** $p < .01$; * $p < .05$

Discussion

The current study aimed to examine associations between observed coparenting dynamics and the communicative functions of parental CDS during a triadic structured-play parent-child interaction episode. Even though previous studies have examined the marital subsystem in relation to mothers' and fathers' CDS, relatively little is known about the contributions of the coparenting system to parental CDS, particularly in relation to their speech functions. In addition, the study examined bidirectional associations between the communicative functions of parental CDS and toddlers' language development during triadic play.

First, results showed that observed coparenting supportiveness and undermining behaviours were not significantly associated with either the quantity of mothers' and fathers' CDS or the communicative functions of their CDS. This contradicts Bingham et al.'s (2013) study which found fathers' quantity of CDS to be associated with the coparenting relationship. However, it should be noted that the significant association in their study was observed only in relation to coparental balanced involvement which was not an aspect of coparenting under consideration in the present study. The absence of associations between observed coparenting dynamics and parents' CDS can be attributed to several reasons. First, the context in which the parent-child interactions were observed may not have allowed for family dynamics to have an effect on parents' CDS. Given that the interactions were observed in a structured-play context involving novel toys, there was greater responsibility on the parents to familiarise toddlers with the play activity. As such, irrespective of their coparenting dynamics, both parents may have been focused on helping toddlers work through the play task. Perhaps in a non-play (or familiar, everyday play)

family interactional context such as during caregiving, we may be better able to disentangle the associations between coparenting dynamics and parents' CDS.

Second, it may be that the pathway between coparenting processes and parental CDS is an indirect one. As demonstrated by several studies, coparenting is closely associated with parenting behaviours and attributes such as affect (Belsky et al., 1996), parenting stress (Kang et al., 2020) and parental sense of competence (Latham, Mark, & Oliver, 2018). Thus, it may be that coparenting dynamics significantly impact parents' ability to cope in their parental roles and their confidence in their ability to parent which in turn influences their child-directed speech. Further research that tests such indirect pathways may help to illuminate our findings further.

Next, the study examined bidirectional associations between parental CDS and toddlers' language development as measured by the total amount of speech produced in the interaction and expressive and receptive language scores on the BSID-III. As seen in Table 4.4.8, the quantity of speech produced by mothers and fathers during triadic play was not associated with toddlers' language skills. These findings corroborate those of a growing body of literature which suggests that quantity of parental speech alone explains less variance in toddlers' linguistic skills as compared to other qualitative aspects of parental speech (Pan, Rowe, Singer, & Snow, 2005; Jones & Rowland, 2017). For instance, Rowe (2012) found parental input quantity to be more significant for the language development of younger infants aged 18 months than for toddlers.

Additionally, Pan et al. (2005) found that maternal talkativeness by itself did not contribute significantly to growth in toddlers' vocabulary. While this finding was specific to the number of word *types* produced by toddlers during mother-child interaction, results

in this study suggest that such an association can be extended beyond word types alone to include the overall quantity of speech produced by toddlers. Toddlerhood represents a developmental stage wherein children are beginning to string together two to three-word sentences and respond to simple questions. During this phase, parental CDS that creates more opportunities for toddlers to vocalise, engage in conversations and develop a more sophisticated vocabulary may be more beneficial for language development than the sheer quantity of speech to which toddlers are exposed.

A significant association emerged between maternal use of facilitative speech during play and toddlers' language abilities. Specifically, a positive relationship was observed between mothers' open-ended, yes/no, prompt questions and toddlers' utterances produced during the play episode. These findings are supported by prior research which suggests that posing more questions to toddlers benefits their linguistic capabilities (Ninio, 1980; Rowe et al., 2017). Such utterances typically demand multi-word responses which not only permit children to use their existing vocabulary skills (Leech et al., 2013) but also help them achieve the next level of linguistic complexity. However, it is emphasized that the current study was cross-sectional in nature which makes it difficult to determine the direction of effects. It can be argued that more vocal and verbally responsive toddlers encouraged mothers to pose more questions during play.

It is, however, somewhat surprising that no associations were observed between fathers' child-directed speech and toddlers' language abilities. This is in contrast to prior research which has found paternal speech functions to make significant contributions to toddlers' language development (Leech et al., 2013; Salo, Rowe, Leech, & Cabrera, 2017). However, it is important to note that the majority of studies examining associations

between fathers' CDS and toddlers' language development were conducted within a dyadic context. Given that young children are likely to spend considerable amounts of time in both dyadic and triadic interactions with parents (Belsky et al., 1996), and are likely to acquire language by the shared experience of interdependent communications, the lack of research on parental CDS with a triadic context is striking. Specifically, the significant associations observed between mothers', but not fathers', facilitative speech is difficult to explain but what is proposed is that triadic contexts offer a more complex linguistic environment wherein toddlers are required to engage with, and respond to, two communicative partners simultaneously while working through the play task. Within such a context, toddlers may be more attuned to maternal speech and respond more to mothers' questions than that of fathers' owing to the greater proportion of time that toddlers are likely to spend with mothers as compared to fathers in general. However, further research is required in this area to corroborate the findings in this study and add to the growing body of literature examining the functional aspects of parental CDS in relation to toddlers' linguistic skills.

Findings from this study highlight the importance of understanding the associations between family dynamics and parental CDS when examining the linguistic environment of parent-child interactions. While previous studies have mostly focused on the linguistic properties of parental CDS, the current study makes an additional contribution by examining its communicative functions in relation to toddlers' language development. Overall, findings from this study provide a new perspective on the role of family systems in the communicative functions of parental CDS and how this relates to toddlers' emerging linguistic competencies.

Study 5. Observed and reported coparenting and toddlers' adaptive functioning

Abstract

This study examined the associations between perceived and observed coparenting and toddlers' adaptive functioning. Seventy-seven typically developing toddlers aged between 21 and 27 months and their biological parents residing in Ireland participated in the study. Participating families were predominantly Caucasian and English speaking. Parents' perceived coparental relationship was assessed via self-report. In addition, coparenting dynamics were observed during triadic free-play and structured-play tasks. Mothers reported on their toddlers' adaptive functioning. Results indicated a negative association between undermining coparenting and toddlers' social and communication adaptive skills. Findings from the current study highlight the important role played by triadic family processes in young children's development.

Introduction

Aside from toddlers' core social and emotional competencies, one important aim of this research was to identify the role of coparenting dynamics in toddlers' adaptive functioning. Adaptive functioning in children relates to their acquisition and implementation of conceptual, social and practical skills that are important for children to function independently and to meet environmental demands (Bayley, 2006). Such skills are required for gaining autonomy and independence in day to day living.

The focus in the current study was on examining adaptive skills that are important for establishing and maintaining social and emotional relationships with others, regulating one's own emotions, recognising emotions in others and communicating their needs effectively. Similar to toddlers' socio-emotional skills, it is likely that triadic parent-child play interactions, within which coparenting dynamics are at play, have a vital role in the development of such adaptive skills.

A key aspect of the current study is the inclusion of both observed coparenting dynamics as well as parents' perceived coparenting in examining and establishing associations with toddlers' adaptive functioning. Incorporating both measures in a study focusing on adaptive functioning, which has rarely been included as an outcome variable in developmental research, will provide a comprehensive understanding of the role of the family dynamics in toddlers' emerging adaptive skills.

The present study addressed two main research questions; (1) Are mothers' and fathers' perceived coparenting dynamics associated with observed coparenting dynamics? and, (2) Are perceived and observed coparenting dynamics associated with toddlers' adaptive social, self-direction and communication skills? First, given the mixed findings

and weak associations in the literature pertaining to the strength of the relationship between perceived and observed coparenting dynamics (Brown et al., 2010; Buckley & Schoppe-Sullivan, 2010), the current study predicted that perceived and observed coparenting would not be significantly associated. Second, it was hypothesized that supportive coparenting would be positively associated with toddlers' adaptive functioning whereas undermining coparenting would be negatively associated with toddlers' adaptive functioning.

Method

Participants

This study comprised seventy-seven families with toddlers whose mothers were aged between 24 to 48 years ($M = 34.03$, $SD = 7.23$) and fathers aged between 23 and 45 years ($M = 34.45$, $SD = 9.71$). Among mothers, 16% had complete second-level/third level non-degree, 79% had bachelors/master's degree and 5% had a doctoral degree. Among fathers, 5% had a second-level certificate, 26% had completed second-level/third level non-degree, 65% had bachelors/master's degree and 4% had doctoral degrees.

Procedure

Triadic parent-child interactions were recorded during a structured play and free play task each lasting 5 minutes. During the structured-play task, both parents and toddler were presented with a teddy bear skills puzzle board. Parents were requested to try and help their child complete as many parts of the board as possible. The structured task presented a challenge to toddlers for which parental assistance was required. During the free-play task, both parents and toddler were presented with a box containing an assortment of toys designed to elicit fun, creativity and humour (e.g. Mr Potato head, blocks, toy cars, ball). Parents were instructed to play with their toddlers as they normally would at home. The

order of the sessions was counterbalanced with 50% of the interactions beginning with either the structured-play task or the free-play task.

Measures

Socio-demographic data

Both parents provided information about their age, education level, their child's age and gender.

Perceived coparenting relationship

Mothers' and fathers' perceived coparenting relationship was assessed using the Coparenting Relationship Scale (CRS) (Feinberg et al., 2012). The CRS is a self-report measure comprising 35 items divided into 7 subscales namely coparental support, undermining, endorsement of partners' parenting, exposure to conflict, coparental agreement, coparental closeness and division of labour. Both overt coparenting (exhibited by a parent within a triadic interaction) and covert coparenting (exhibited by a parent when interacting alone with the child) dynamics are assessed by the scale.

Note: Only the Coparental Support, Coparental Undermining and Endorsement of Partners' Parenting subscales of the Coparenting Relationship Scale (CRS) that represent the supportive and undermining domains of coparenting have been included in the current study. This was done in order to correspond to the observed domains of supportive and undermining coparenting dynamics.

Observed coparenting dynamics

Supportive and undermining coparenting dynamics observed during a free-play session was assessed globally using a five-point scale ranging from very high to very low. Supportive coparenting was indexed by scales that measured the level of cooperation,

warmth and pleasure. Undermining coparenting was indexed by scales that measured the level of competition, coldness and displeasure. Given that supportive $r(77) = .43, p < .01$ and undermining $r(77) = .43, p < .01$ coparenting scores obtained within structured-play and free-play tasks were correlated, we averaged the scores obtained across these two types of tasks to yield one set of scores for supportive and undermining coparenting.

Bayley Scale of Infant Development- 3rd Edition (BSID-III) (Bayley 2006)

Toddlers' adaptive functioning was assessed by the BSID-III. The BSID is an individually administered standardised instrument that assesses the developmental functioning and competencies of infants and toddlers (aged between 1 to 42 months). The questionnaire assesses children's adaptations and skills required for meeting the demands of daily life. We focused on three areas of adaptive skills measured by this scale: *communication, social and self-direction*. The remaining areas measured by this scale (not considered in the research question under investigation and therefore not included in the current analyses) pertain to toddlers' abilities to engage in other recreational activities, feed and dress themselves, look after personal possessions, recognise letters, count and draw simple shapes and to move around and manipulate the environment. Mothers responded to a total of 241 items that assessed toddlers' adaptive skills in the above-mentioned areas. These responses/ratings are based on mothers' previous observation of their toddlers' adaptive skills. Ratings are on a four-point scale and include the following options: 0 = not able to do it, 1 = able yet never does it when needed, 2 = does it sometimes when needed and 3 = does it always or almost always when needed.

For a detailed description of the procedure and measures used, please refer to the method chapter (Chapter 3).

Results

Correlations among family demographics, perceived and observed coparenting dynamics and toddlers' social, self-direction and communication skills

The analysis in the current study was carried out using SPSS version 25. Table 4.5.1 shows descriptive statistics and Table 4.5.2 shows the bivariate correlations among the study variables. Given that some of the variables in the current study were not normally distributed and did not meet the requirements for conducting parametric correlations, Spearman's partial correlations were computed [bootstrapped bias-corrected confidence intervals based on 1000 samples] among the study variables.

First, in order to control for family demographics, correlation coefficients for the associations between child age, parental education, mothers' and fathers' perceived coparenting relationship, observed coparenting dynamics and toddlers' adaptive skills were computed (social, self-direction and communication) (see Table 4.5.2). The results showed no significant associations between the demographic variables of child age and parental education and adaptive functioning. Second, in order to test for possible child gender effects on adaptive skills, three independent sample *t-tests* were conducted. No differences were observed by child gender for toddlers' social skills $t(75) = -1.38, p = .17$, self-direction skills $t(75) = -1.04, p = .46$ or communication skills $t(75) = -1.79, p = .19$. Given that the demographic variables of child age and parental education were not significantly associated with toddlers' adaptive skills, these variables were excluded from any further analyses.

The results indicated a significant correlation only between fathers' perceived endorsement of partners' parenting and observed undermining coparenting. When fathers rated their partners' parenting more positively, more undermining coparenting dynamics were observed during the play tasks. No other significant associations were observed between mothers' and fathers' perceptions of coparenting relationship and observed coparenting dynamics.

In relation to coparenting dynamics (perceived and observed) and toddlers' adaptive functioning, results showed that toddlers' social skills were positively correlated with mothers' perceived endorsement of partners' parenting. When mothers rated their partners' parenting more positively, toddlers were reported as having better social skills. Toddlers' self-direction skills were positively correlated with mothers' perceived coparenting supportiveness and endorsement of partners' parenting. When mothers rated greater coparenting supportiveness in their relationships and rated their partners' parenting more positively, toddlers were reported as having better self-direction skills. Toddlers' communication skills were negatively correlated with mothers' perceived coparenting undermining and observed undermining coparenting dynamics. When mothers rated greater coparenting undermining in their relationships and greater undermining coparenting behaviours were observed during the play tasks, toddlers were reported as having poorer communication skills.

Table 4.5.1
Descriptive statistics for study variables (N = 77)

Study variables	Mean	SD	Min	Max	Skewness	Kurtosis
1.Child Age	24.09	1.36	21.17	27.13	.27	-.58
2.Mothers' education	6.24	.86	4.00	8.00	-.12	.24
3.Fathers' education	5.77	1.10	3.00	8.00	-.62	.64
4.Mothers' Cop supp-P	5.21	1.02	.83	6.74	-1.93	4.41
5.Mothers' Cop und-P	.60	.75	.00	4.33	2.07	6.79
6.Mothers' End par- P	5.45	.69	3.00	6.63	-1.48	1.97
7.Fathers' Cop supp- P	4.96	1.06	1.00	6.00	-1.48	2.46
8.Fathers' Cop und- P	.72	.72	.00	3.17	1.14	.74
9.Fathers' End par- P	5.63	.43	3.86	6.18	-1.68	3.68
10.Supp cop- O	3.34	.74	1.40	4.70	-.25	-.38
11.Und cop- O	1.34	.38	1.00	3.10	1.95	5.21
12. Adaptive- Social	22.18	4.50	9.00	32.00	-.43	.21
13. Adaptive- Self-direction	11.33	3.03	4.00	18.00	-.30	.12
14. Adaptive- Communicative	12.28	2.68	4.00	18.00	-.03	.22

Supp: Supportiveness; Und: Undermining; End par: Endorsement of partners' parenting; Cop: Coparenting; P: Perceived; O: Observed

Table 4.5.2.
Bivariate correlations among perceived and observed coparenting and toddlers' adaptive functioning (N = 77)

Study variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Child Age														
2.Mothers' education	.07													
3.Fathers' education	.02	.46**												
4.Mothers' Coparenting supportiveness-P	-.09	.05	.01											
5.Mothers' Coparenting undermining-P	-.06	-.00	.05	-.22*										
6.Mothers' Endorsement of parenting- P	.14	-.06	-.02	.44**	.00									
7.Fathers' Coparenting supportiveness- P	-.02	-.07	-.08	.26*	-.02	.26*								
8.Fathers' Coparenting undermining- P	.14	.14	.05	-.16	.12	.05	-.56**							
9.Fathers' Endorsement of parenting- P	.06	-.05	-.11	.17	.09	.00	.54**	-.46**						
10.Supportive coparenting- O	-.25*	.22	.00	.08	.15	-.05	-.12	.13	-.03					
11.Undermining coparenting- O	.19	-.13	-.14	-.07	.21	-.12	.01	-.15	.30**	-.24*				
12. Adaptive- Social	.03	-.02	.03	.14	-.20	.24*	.14	.04	-.01	.13	-.19			
13. Adaptive- Self-direction	-.11	-.16	-.05	.32**	-.12	.30**	.13	-.09	.04	.12	-.19	.54**		
<u>14. Adaptive- Communicative</u>	.07	-.16	-.12	.03	-.30**	.18	.21	.07	.06	-.01	-.25*	.33**	.48**	

**p<.01; *p<.05;

Contribution of perceived and observed coparenting to toddlers' adaptive skills

Subsequent to checking that the assumptions were met, we conducted multiple regression analyses for examining the roles of perceived and observed coparenting dynamics in toddlers' social, self-direction and communication skills were conducted. First, perceived and observed coparenting dynamics were analysed separately (Tables 4.5.3 and 4.5.4), following which they were analysed simultaneously by including them in the same regression model (Table 4.5.5).

Table 4.5.3 shows the results from the analysis examining the contributions of mothers' and fathers' perceived coparenting supportiveness, undermining, and endorsement of partners' parenting to toddlers' adaptive skills. Non-significant regression equations were observed in relation to toddlers' social skills, $F(6, 70) = .96, p = .45$, self-direction skills, $F(6, 70) = 2.15, p = .06$, and communication skills, $F(6, 70) = 1.53, p = .17$.

Table 4.5.3

Multiple regression analyses for perceived coparenting predicting toddlers' adaptive functioning (N = 77)

Predictors	Social			Self-direction			Communicative		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Mothers' coparenting supportiveness	.08	.77	.00	.61	.43	.20	-.11	.37	-.03
Mothers' coparenting undermining-	-.65	.77	-.10	-.04	.50	-.01	-1.12	.45	-.31*
Mothers' endorsement of partners' parenting	.98	1.34	.15	.57	.68	.12	.00	.57	.00
Fathers' coparenting supportiveness	.56	.74	.12	-.03	.45	-.01	.59	.42	.22
Fathers' coparenting undermining	.27	.93	.04	-.88	.61	-.20	.82	.55	.21
Fathers' endorsement of partners' parenting	-.65	1.59	-.07	-.20	.88	-.02	-.12	.08	-.01
Adjusted R ²		-.00			.08			.04	
F		.96			2.15			1.53	

**p<.01; *p<.05;

Table 4.5.4 shows the results from the analysis examining the contributions of observed supportive and undermining coparenting dynamics to toddlers' adaptive skills. Significant regression equations in relation to toddlers' social skills, $F(2, 74) = 4.44, p = .01$, adjusted R^2 of .08, and toddlers' communicative skills, $F(2, 74) = 5.01, p < .01$, adjusted R^2 of .09 were observed. Within this model, only observed undermining coparenting dynamics were significantly associated with toddlers' social skills ($\beta = -.29, p < .01$) and communicative skills ($\beta = -.34, p < .01$). Specifically, greater observed undermining coparenting dynamics were associated with poorer adaptive social and communicative skills in toddlers. Finally, the regression equation for toddlers' self-direction skills was not significant, $F(2, 74) = 1.72, p = .18$.

Table 4.5.4

Multiple regression analyses for observed coparenting predicting toddlers' adaptive functioning (N = 77)

Predictors	Social			Self-direction			Communicative		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Supportive coparenting- Observed	.20	.75	.03	.21	.52	.04	-.39	.49	-.10
Undermining coparenting- Observed	-3.43	1.43	-.29*	-1.45	.90	-.18	-2.44	.88	-.34**
Adjusted R ²		.08			.01			.09	
F		4.44*			1.72			5.01**	

**p<.01; *p<.05;

When perceived and observed coparenting dynamics were examined simultaneously, the results (Table 4.5.5) showed a non-significant regression equation in relation to toddlers' social skills, $F(8, 68) = 1.70, p = .11$. A significant regression equation was observed in relation to toddlers' self-direction skills, $F(8, 68) = 2.31, p = .02$, adjusted R^2 of .12, although none of the predictors in the model was significant. A significant regression equation was also observed in relation to toddlers' communicative skills, $F(8, 68) = 2.07, p = .05$, adjusted R^2 of .10. Within this model, mothers' perceived coparenting undermining ($\beta = -.28, p = .02$) and observed coparenting undermining ($\beta = -.28, p = .03$) made significant independent contributions to toddlers' communicative skills. Specifically, when mothers perceived greater coparenting undermining in their relationships and greater undermining coparenting dynamics were also observed, toddlers were reported as having poorer communicative skills.

Table 4.5.5

Multiple regression analyses for perceived and observed coparenting predicting toddlers' adaptive functioning (N = 77)

Predictors	Social			Self-direction			Communicative		
	B	SE	Beta	B	SE	Beta	B	SE	Beta
Mothers' coparenting supportiveness- Perceived	.02	.77	.00	.57	.42	.18	-.11	.36	-.03
Mothers' coparenting undermining- Perceived	-.61	.75	-.10	-.03	.50	-.00	-1.02	.45	-.28*
Mothers' endorsement of partners' parenting- Perceived	1.11	1.32	.86	.65	.67	.14	.00	.56	.00
Fathers' coparenting supportiveness- Perceived	.35	.74	.08	-.14	.45	-.04	.42	.42	.12
Fathers' coparenting undermining- Perceived	-.05	.92	-.00	-1.05	.61	-.24	.61	.54	.16
Fathers' endorsement of partners' parenting- Perceived	.09	1.50	.01	.21	.89	.02	.29	1.00	.05
Supportive coparenting- Observed	.55	.77	.08	.40	.52	.09	-.17	.45	-.04
Undermining coparenting- Observed	-2.91	1.53	-.24	-1.51	.99	-.18	-2.00	.93	-.28*
Adjusted R ²		.06			.12			.10	
F		1.70			2.31*			2.07*	

Discussion

The focus of the current study was on examining the associations between perceived and observed coparenting dynamics and toddlers' adaptive functioning. While a limited number of studies have examined the contributions of the coparenting relationship to toddlers' emerging social and emotional competencies, none have looked at toddlers' adaptive functioning. This is an area of development that is essential for meeting everyday demands and independent living. In particular, the extent to which parents support or undermine each other's parenting behaviours is likely to have crucial implications for toddlers' adaptive skills particularly in the domains of social and communication functioning.

Bivariate associations between perceived and observed coparenting dynamics

First, associations between perceived and observed supportive coparenting were examined. In relation to supportive coparenting dynamics, results showed that parents' perceived coparental supportiveness and undermining were not associated with observed supportive and undermining coparenting. This finding was in line with the study expectations given that prior research utilising self-report and observational measures reported similar results (Brown et al., 2010; Karreman et al., 2008). However, a positive association between fathers' endorsement of partners' parenting and observed undermining coparenting dynamics was observed.

The (i) absence of a significant relationship between perceived and observed supportive and undermining coparenting dynamics and (ii) the positive association between fathers' endorsement of partners' parenting and observed undermining coparenting can be explained in several ways. Parents' ratings are subjective and based

upon prior experiences within their coparenting relationship. Self-report measures have a broad focus that targets coparenting perceptions and attitudes that have formed over a long period of time. Observational measures, on the other hand, provide a window on a subset of coparenting behaviours that unfold within a brief period. While self-reports assess parental perceptions and experiences of coparenting supportiveness across a wide range of contexts (e.g. during caregiving, playtime, social activities) observational ratings were based on coparenting behaviours exhibited during the specific context of the play activities.

Karreman et al. (2008) suggested that inconsistencies between perceived and observed coparenting dynamics can also be attributed to the fact that the self-report coparenting variables of interest do not fully correspond to the observed coparenting variables. This lack of conceptual correspondence has previously been reported in studies that examined associations between perceived and observed parenting behaviours (Bornstein et al., 2001). Thus, while the self-report measure assessed coparenting behaviours in the presence and absence of the other partner (overt and covert coparenting), observed coparenting allowed us to examine behaviours that occurred when in the presence of all family members (triadic context). In addition, with respect to the positive association between fathers' endorsement of partners' parenting and observed undermining coparenting, it is to be noted that the mean level of observed coparenting undermining was 1.34 within an observed range of 1.00 to 3.10. Thus, extreme levels of observed coparenting undermining were not reported in the current study. Given this limited range of observed coparenting undermining, results from the

correlational analyses need to be interpreted with caution. Future investigations in cohorts that exhibit the full range of behaviours need to be undertaken.

Contributions of perceived and observed coparenting dynamics to toddlers' adaptive skills

Next, associations between perceived and observed coparenting dynamics and toddlers' adaptive functioning were examined. At first, the independent contributions of perceived and observed coparenting to toddlers' adaptive skills were examined. Following this, the joint contributions of perceived and observed coparenting dynamics to toddlers' adaptive skills were examined.

When perceived coparenting dynamics were analysed independently and in conjunction with observed coparenting dynamics, results showed that only maternal perceptions of coparental undermining were significantly negatively associated with toddlers' communicative skills. When observed coparenting dynamics were analysed independently, results showed that undermining coparenting was significantly negatively associated with toddlers' social skills and with their communicative skills. When analysed in conjunction with perceived coparenting dynamics, results showed that observed undermining coparenting was significantly negatively associated only with toddlers' communicative skills.

While there may exist multiple pathways by which perceived and observed undermining behaviours negatively impact toddlers' adaptive skills, the direct associations reported here can be ascribed to several factors. Perceived and observed undermining coparenting dynamics are reflective of antagonistic coparenting behaviours that occur both in the presence and absence of the child and in a variety of

contexts contributing to an unstable emotional environment at home. Undermining coparenting behaviours as perceived by mothers or as observed during triadic interactions might distract parents' attention from the toddler thereby limiting engagement with the toddler in ways that facilitate their linguistic competencies. Within such contexts, fewer questions may be directed at the toddler or fewer instances of positive feedback (e.g. praise, encouragement) that facilitate toddlers' responsiveness might all contribute to poorer communication skills. Poorer communication skills in toddlers can, in turn, further contribute to, or exacerbate, coparenting undermining.

The ability to communicate feelings, needs and intentions is closely linked with toddlers' social and self-direction skills. This may help to explain why a negative association between observed undermining coparenting dynamics and toddlers' social skills (although found only when observed coparenting dynamics were analysed independently from perceived coparenting in the multiple regression) was found. Being exposed to undermining behaviours between parents negatively impacts children's sense of emotional security (Davies & Cummings, 1994). Lowered emotional security can, in turn, affect toddlers' ability to regulate their own emotions and emotional responses efficiently. Additionally, toddlers may also frequently replicate such negative emotions at home and in other social situations.

Observed undermining coparenting is indicative of higher levels of coparental competition, assignment of blame to partner under stressful circumstances or low levels of trust in each other's abilities as a parent. This has been reported to have negative implications for children's social and emotional developmental outcomes (Murphy et al., 2016; Solmeyer, Feinberg, Coffman, & Jones, 2014). Coparenting competition, in

particular, sends mixed messages to children which have been suggested as being “emotionally dysregulating” to them (Murphy et al., 2016, p.5). Moreover, coparenting competition is frequently accompanied by family conflict (McHale et al., 2000) which is associated with greater social maladjustment (Eichelsheim, et al., 2011; Kouros, Cummings, & Davies, 2010).

In addition, it is worth acknowledging that although significant correlational associations between mothers’ perceived coparenting supportiveness/ endorsement of partners’ parenting and toddlers’ social and self-direction skills were observed, results indicated that they did not make significant contributions to toddlers’ adaptive skills. This is not to imply that coparenting supportiveness is not important for children’s adaptive functioning as some studies have established a link between the two (Cabrera et al., 2012; McHale, Johnson, & Sinclair, 1999). However, a few others have reported no direct associations between supportive coparenting dynamics (such as coparental cooperation) and children’s social adjustment (Kwon et al., 2013; McHale, Rao, & Krasnow, 2000). Given this lack of consensus, Lam et al. (2018) suggested the presence of moderators like child dispositional characteristics may help explain the relationship. Their study reported a positive association between cooperative coparenting and children’s social competence, but this association held only for children high in negative affect. As such, future investigations examining the role of moderators like child temperament and even parental functioning (e.g. parenting stress, parental sense of competence) in toddlers’ adaptive functioning may help to illuminate these findings further.

The absence of a significant association between fathers' perceived coparenting quality and toddlers' adaptive functioning suggests that the link between the two follows a different or more indirect path. For instance, fathers' perceptions of coparenting dynamics may influence their parenting behaviours which in turn can influence toddlers' developmental competencies. Family dynamics like the coparenting relationship is suggested to be particularly important for fathers' parenting behaviours and father-child relations (Kotila & Schoppe-Sullivan, 2015). Future research examining relations between fathers' perceptions of coparenting dynamics and children's adaptive adjustment via fathers' parenting behaviours need to be undertaken to broaden our understanding of family dynamics and child development.

Comprehensive view of coparenting dynamics

The use of parental reports of perceived coparenting relationship in conjunction with observed coparenting dynamics has provided an in-depth and coherent understanding of the associations between supportive and undermining domains of coparenting and adaptive functioning in toddlers. Incorporating both methods lent substantial support to the information provided by each method in so far as both measures, despite their methodological differences, highlighted a significant negative association between coparenting undermining and toddlers' adaptive functioning. This indicates that a family environment characterised by less undermining coparenting dynamics is critical for ensuring the development of better adaptive social, self-direction and communication skills. However, given the cross-sectional nature of the current data, it is not possible to infer a causal relationship between undermining coparenting and toddlers' adaptive functioning. It may well be that toddlers who

experience greater difficulties in understanding and regulating their own emotions, maintaining social relationships or communicating their needs efficiently may place more burden and stress on the coparenting relationship thereby contributing to increased negative coparental behaviours.

The findings from this study need to be considered in light of the limitation of using parental reports of toddlers' functioning (discussed previously). Additionally, with the low incidence of undermining coparenting, the results pertaining to this domain of coparenting need to be interpreted with caution. Future studies that are able to capture adaptive skills in real-time and in families identified as being at-risk may help to further illuminate the findings in this study.

Nonetheless, findings from the current study help to elucidate the relationship between both perceived and observed coparenting dynamics and toddlers' adaptive functioning in the areas of self-direction, social and communication skills. While few previous studies have examined contributions of the coparenting relationship to toddlers' social and emotional competencies, none have looked at coparenting contributions to toddlers' adaptive functioning. Adaptive skills form an integral part of toddlers' development that prepares them for meeting the demands of daily life and for independent functioning in adulthood. While these findings have helped in identifying direct relations between coparenting dynamics and toddlers' adaptive functioning, future investigations examining indirect pathways may tell us more about the nature of these associations. Such indirect associations characterised by the spillover effect of emotions across one family sub-system to another (Erel & Burman, 1995) require further investigation particularly in relation to undermining coparental behaviours and

toddlers' adaptive functioning. Studies on adaptive functioning as an outcome among the typically developing population have rarely been conducted. As such future research is needed to examine both direct and indirect effects of broader family sub-systems on adaptive functioning which can aid in designing intervention plans for enhancing both individual parenting skills as well as the broader coparenting relationship.

Chapter 5

General discussion and conclusion

Young children develop and learn within the context of relationships. While a significant amount of research has been undertaken on understanding the role of dyadic parent-child interactions in children's development, relatively little is understood about the nature of triadic parent-child interaction and its contributions to child development. Cox and Paley (2003) proposed that dyadic interactions act as the "thermostat" of the family environment, as the quality of individual family relationships influences the dynamics of the 'whole' family system. The degree to which parents coordinate their efforts in raising children for whom they share equal responsibility has been established as an important source of influence in children's developmental outcomes.

Summary of study findings

One of the main goals of the current thesis was to empirically test a key tenet of the family systems view which posits that whole family dynamics and processes cannot be reduced to a sum of its subsystems. The information provided by triadic family processes is distinct and unique from that provided by dyadic processes. The triadic measure of supportive and undermining coparenting dynamics allows for a comprehensive understanding of the role of family functioning and family dynamics in children's developing competencies.

Given the growing interest in expanding research on parent-child interactions to contexts beyond the parent-child dyad, more empirical investigations into factors that can influence the triadic measure of coparenting is warranted. On the basis of current conceptualisations, the coparenting relationship as a family subsystem is thought to be

influenced by a range of family and extra-familial factors. Factors such as the individual characteristics of the interacting participants, the functioning of other family subsystems and the couple's own resources to cope as parents have been found to be of significant importance. The goals of the first and the second study in the current thesis were to add to this body of knowledge by examining the role of child gender, temperament, parental age, education, couple's dyadic adjustment, parenting stress and parental sense of competence in observed supportive and undermining coparenting dynamics.

Overall, the findings from the first two studies indicated that coparenting as a distinct family subsystem is influenced by factors pertaining to the individual characteristics of family members and parents' sense of parental competence. Specifically, parental age and fathers' sense of parental competence were found to be significantly associated with observed supportive coparenting dynamics. In families with older parents, less supportive coparenting behaviours were observed. Additionally, greater supportive coparenting was observed in families with fathers who had a higher parental sense of competence. Firstly, such parental age effects on whole family processes are important to take into consideration as they can potentially alter the dynamics of other family subsystems over time, particularly the couple's dyadic adjustment. Given that the coparenting relationship has been found to be a stronger predictor of dyadic adjustment in couples (than vice versa), prolonged absence of supportive coparenting dynamics may lead to a disintegration of the couple relationship over time. To our knowledge, this was the first study to examine the role of parent age in coparenting dynamics and offer possible explanations and implications for observed

associations. Further research that takes into consideration parent characteristics alongside child characteristics needs to be carried out.

Second, given increasing evidence that fathers play an important role in children's development, fathers' parental sense of competence is an important determinant of their engagement in family-level interactions. The more competent fathers feel in their parenting roles, the more likely it is that they will contribute to triadic interactions leading to more supportive coparenting dynamics. Although there is some contradictory evidence in research involving infants (Favez et al., 2016), our findings suggest that the developmental period may need to be taken into consideration when examining such effects. Toddlerhood is a period marked by greater child autonomy and more developmental challenges wherein greater paternal involvement (associated with a higher paternal sense of parenting competence) can lead to more harmonious and supportive coparenting dynamics.

However, it must be acknowledged that none of the other factors investigated, toddlers' gender, temperament, couple's dyadic adjustment nor parenting stress, were associated with coparenting dynamics. The absence of reported associations does not necessarily mean that these factors have no role in coparenting dynamics. In addition to the possible reasons described in Study 1 for our failure to detect any significant relationships between these variables, perhaps longitudinal investigations across multiple timepoints would strengthen the findings in this study. This point is particularly salient in light of the fact that when the role of toddlers' temperament in coparenting dynamics was examined longitudinally, the significant role played by toddler temperament in the development of the coparenting relationship was revealed

(Study 2). Specifically, results showed that supportive coparenting dynamics remained stable across time only when toddlers were reported as having low to moderate levels of negative affectivity and moderate to high levels of surgency.

Given that toddlers are the focus of the coparenting relationship, toddlers' temperament was selected for further longitudinal analysis, but it is likely that other factors taken into consideration in Study 1 would share some important relationship with coparenting dynamics when examined using longitudinal methods. The effects of specific factors such as couple's dyadic adjustment and parenting stress may take longer to manifest and overlooking their contributions to family functioning can limit our understanding in this domain. Nonetheless, findings from these studies highlight the importance of taking family characteristics into consideration when examining the coparenting subsystem and when designing and implementing intervention plans targeted at improving coparental dynamics and overall family functioning.

Findings from Studies 3, 4 and 5 in the current thesis raise the importance of examining how different family subsystems work in concert with each other and how a greater integration of family dimensions and subsystems contributes to a more comprehensive understanding of child development. Taking into consideration, parental play behaviours which have been discussed and evidenced as being vital for children's development, findings from the studies in the current thesis lend support to the claim that the insights gained from triadic level family interactions are not merely the sum of separate dyadic ones. Solely relying on data gathered from dyadic parent-child interactions is not an accurate representation of the family system in which parents interact with young children (Lindsey & Caldera, 2006). Specifically, results indicated

less cross-sectional continuity in parental play behaviours across the dyadic and triadic contexts. Both mothers and fathers spent significantly less time in toy play, and verbal facilitation of toddlers' play and more time in observing toddlers' play in the triadic context than in the dyadic context. Of particular interest is the finding that parents' combined engagement in toy play was significantly less than toy play in either of the parent-child dyad. This might reflect the triadic context as a complex interactional environment for parents to navigate but one which is an important aspect of everyday parent-child interaction.

Having said this, the triadic context also provides an 'additive' linguistic environment. This is reflected in the finding that parents' combined duration of verbal facilitation in the triadic context was significantly higher than in either dyadic context. Additionally, when the total amount of speech produced by parents in both contexts was examined, results showed that even though both parents produced fewer utterances in the triadic context, toddlers heard significantly more utterances from the combined parental input in the triadic context than in the dyadic context. Moreover, in relation to communicative functions, both parents used a more facilitative speech in the triadic context. Thus, this additive linguistic environment characterized by a high proportion of questions in triadic interactions may benefit toddlers' language development (which is linked with toddlers' ability to navigate the social world) and warrants further longitudinal investigation. Even though results showed that toddlers produced more utterances in the dyadic context with fathers (which might indicate that the triadic context is more challenging for toddlers to contend with), it is proposed that further

extensive investigations into fathers' speech are carried out to identify the specific properties that contribute to greater toddler verbosity.

Additionally, results showed that parents used more gentle guidance (suggestions, praise and words of encouragement) in the dyadic context than in the triadic one (although the finding related to gentle guidance needs to be interpreted with caution owing to the very low incidence rate). This finding, if replicated in a study involving families that use more gentle guidance strategies (perhaps in families with older children), may help to further illustrate the role of context in this communicative function of CDS. Moreover, as acknowledged previously, given the developmental period under consideration, the contextual variations may at least be partly attributable to caregiver roles in the family. However, disentangling the effects of the interactional context and caregiver roles may be particularly challenging in this early developmental period and may need to be further examined in families with older children.

However, it has to be pointed out that not all communicative functions of parental CDS showed context-based variations. For instance, our results showed that directive speech varied only as a function of parental gender (such that fathers used more directives than mothers) and referential speech did not vary as a function of either context or parental gender. Such null findings are also important to consider within the larger scope of intervention planning and execution. For instance, contextual variations in speech may be a more effective target for intervention as compared to gender-based variations. Although, this study was amongst the first to examine contextual variations in parents' communicative functions, replication of the study findings may help

practitioners narrow down on the specific aspects of parental speech that need to be targeted for ensuring optimal child developmental outcomes.

While research on other aspects of parenting (e.g. negative parenting) suggest that contextual variations are more apparent in distressed families (Kwon et al., 2012), the findings in the current study suggest similar context-based variations can also emerge in parents' play behaviours in non-distressed families. Understanding such variations as a first step is important because infants and toddlers are embedded within larger interactional contexts than merely dyadic ones and have an early aptitude for managing multiperson interactions (McHale, Fivaz-Depeursinge, Dickstein, Robertson, & Daley, 2008). Thus, parental interactional patterns that emerge in the triadic context can be reflected in, and shape, children's social and emotional development.

Following an examination of contextual variations in mothers' and fathers' play behaviours, the role of coparenting in triadic family interactions was examined. Coparenting dynamics that are at play when mothers and fathers are interacting together with their children have been evidenced as exerting a unique influence on family functioning and children's socio-emotional development. Findings from the studies in the current thesis lend support to this growing body of empirical evidence. Results from Study 3 (Part 2) demonstrated the importance of the coparenting alliance in determining the relationship between parental play behaviours and toddlers' socio-emotional development. Firstly, results indicated that maternal toy play (but not fathers' toy play) within the triadic context benefits toddlers' socio-emotional development. Although fathers did not differ from mothers in the duration of time they engaged in toy play in the triadic context, their toy play did not appear to have a significant impact on toddlers'

socio-emotional development. This highlights the need to conduct more empirical investigations that examine fathers' play strategies (e.g. the extent to which they follow the child's lead), particularly in triadic level interactions, which can help to illustrate this finding further.

The key finding of this study is that maternal toy play was found to be positively associated with toddlers' socio-emotional development when the toy play was embedded within a supportive coparenting context. This is most likely owing to the positive family emotional climate created by parents engaging in more cooperative and warm coparenting dynamics. The extent to which parents model positive and supportive social behaviours via their coparenting dynamics has a meaningful impact on children's socio-emotional development. This important role of coparenting dynamics in toddlers' development was also demonstrated by findings indicating that more undermining coparenting was associated with poorer adaptive social and communicative adaptive skills in toddlers (Study 5). Just as supportive coparenting dynamics create a positive family emotional climate, undermining dynamics can create an unstable family emotional climate wherein toddlers' emotional security is threatened. This, in turn, might adversely affect their ability to regulate their emotions effectively and exhibit positive social skills. Moreover, a negative family emotional climate can limit parents' engagement with toddlers which limits opportunities for toddlers to engage in effective communication.

While these findings overall suggest that coparenting plays an important role in triadic family interactions, it should be highlighted that coparenting dynamics were not found to play a significant role in determining the relationship between parental verbal

facilitation of toddlers' play and toddlers' socio-emotional development. Additionally, coparenting dynamics were not associated with the communicative functions of parents CDS. This deserves attention because while it was suggested that in families with high coparenting undermining, parents may engage less with their children (such that they ask fewer questions, provide less positive feedback), such effects may not be apparent in a novel interactional context. Future research examining coparenting dynamics in other familiar contexts (caregiving or play at home) may help to advance research in this area.

The overall conclusion drawn from these findings is that triadic family interactions offer unique insights that go beyond what can be determined from dyadic parent-child interactions. Although there may be a significant decline in specific important parental behaviours, this context is rich in the sense that it affords young children the opportunity to experience and engage in more intricate and complex social interactions. This is not just through their simultaneous engagement with both parents but also through their observation of parents' behaviours towards each other.

Strengths of the study

The current research has several important strengths. One of the major strengths is the focus on a measure of family functioning that includes fathers. Changing definitions of the family system has been accompanied by changing definitions of the 'father'. With changing societal views of parenting as a triadic and shared experience and increasing involvement of fathers in children's lives, it is imperative that empirical studies include fathers in their investigations of children's developmental competencies and trajectories. Increasing evidence suggests that fathers can be as positively engaged,

accessible and responsible for their children as mothers and their involvement in children's lives has positive implication for their well-being (Cabrera et al., 2007; Grossman et al., 2002; Harris, 2006). Moreover, including fathers in research studies give us rich insights into their experiences within the family system that can impact the functioning of several family subsystems including coparenting alliances, dyadic adjustment and individual parenting practices. As such, this study allowed us to develop an in-depth understanding of the dynamic nature of coparenting relationships from both maternal and paternal perspectives in relation to children's development.

Although no significant associations were observed between fathers' play behaviours and toddlers' developmental competencies in the current research, it is clear from the findings that there are potential additive effects of fathers during toddlerhood. This was particularly salient in relation to the linguistic environment in triadic interactions (discussed above). Additionally, research has primarily focused on the mother-child dyad owing to the commonly held assumption that mothers are the primary caregivers and play a dominant role in the socialization of young children. However, even with specific caregiver roles, most children in two-parent families, are exposed to the dynamics that mothers and fathers share in their parental roles and responsibilities. The present research findings indicate that such dynamics, observed outside of the caregiving role, significantly determine the family emotional climate. A more positive family emotional climate arising from greater supportive coparenting and less undermining dynamics benefit toddlers' socio-emotional development.

Additionally, a significant strength of the current research was that it utilised rich data obtained from observations of dyadic and triadic parent-child interactions

which were then later coded for coparenting behaviours. This allowed us to observe the complex dynamics of coparenting relationships in real-time and in an interactional context involving play that is characteristic of early parent-child relationships. In addition, data were collected pertaining to mothers' and fathers' perceptions of their own coparenting relationship which is important for our understanding of coparenting dynamics as they unfold over the years in all child-rearing contexts. The combined strength of self-reports and observed data in this study allowed us to establish a deeper understanding and interpretation of the findings necessary for informing theory and practice.

This study makes several important contributions to literature. First, this research demonstrated that the triadic family interactions offer unique information by comparing it with dyadic parent-child interactions. This is important because while there is growing interest in examining families as a system, there is very little empirical evidence to demonstrate its distinctive nature. Thus, findings from the current research lay the foundation for further investigations that will help to illustrate the importance of studying family-level interactions. Second, while observational studies on coparenting have been primarily conducted within the context of parent-child play, the combined contributions of coparenting dynamics and parental play behaviours to children's developmental competencies have not been examined before. Prior research has independently established the positive consequences of parental engagement in object play and supportive coparenting dynamics for toddlers' socio-emotional development. However, in looking at the combined effects of both, a better understanding is gained of the role of family dynamics in family-level interactions.

Third, this study was the first to explore associations between (1) coparenting dynamics and children's adaptive functioning and (2) coparenting dynamics and the communicative functions of parental CDS. First, given that very young children's adaptive skills, particularly those related to their social and emotional functioning, are likely to develop within the context of parent-child play interactions, it is surprising that this developmental domain has not received much attention. Just as coparenting dynamics influence children's core social and emotional competencies, findings show that such dynamics are equally important for children's adaptive skills. Second, even though prior empirical evidence suggests that coparenting dynamics influence the linguistic properties of paternal CDS, no further investigations were undertaken for extending these findings to other properties of parental CDS like the communicative functions. Although no significant associations were observed between the two, these findings provided preliminary evidence for the relevance of further examining direct and indirect associations between coparenting dynamics and parental CDS in a diverse range of interactional contexts.

Limitations and future directions of the study

Notwithstanding the contributions of the present work to the extant literature on family dynamics in triadic parent-child interactions, several limitations have to be acknowledged. The observations of coparenting dynamics and parent-child interactions took place in a laboratory setting which presents as a novel environment to families. Coparenting and parental play behaviours may have been modified in such conditions which limit the ecological validity of the findings.

Additionally, it is important to mention that the observations were brief which limits the ability to detect variations in coparenting dynamics and parental play behaviours over longer durations. Although this design was efficient in terms of engaging toddlers and older children in the play tasks, and the findings did contribute to a better understanding of contextual variations in observed behaviours, it limited the ability to capture all the complex dynamics of family functioning. However, lab-based observational methods of similarly brief durations has frequently been employed in developmental research which have allowed for detailed analysis of parent-child interactions and yielded similarly important results (Bingham et al., 2013; Kwon et al., 2012).

In relation to sample characteristics, it is not clear whether the results from the studies in the current research would generalise to more diverse samples. Given that the participants were predominantly White, heterosexual, well-educated with the majority of mothers and fathers in full-time employment, the findings may not generalize widely. This homogeneity in sample characteristics may help to explain the lack of associations between factors such as parental education and coparenting dynamics. As pointed out by Bornstein, Putnick, & Lansford (2011) coparenting dynamics are likely to be influenced by individual characteristics which are formed within the context of larger cultural themes. Parents' childrearing beliefs, values and expectations are to a large extent governed by the cultural milieu in which families function. Future investigations need to be undertaken in culturally, ethnically and economically diverse samples for generalisability of the findings.

Additionally, the present sample volunteered to participate in the study. Recent research shows that self-selected samples may be reflective of some inherent bias in the characteristics or traits of the participants (Yu, Shafto, & Bonawitz, 2020) which may lead to the sample not being representative of the population. However, self-selection sampling is a popular sampling technique and is regarded as effective in science that involves human participants.

In relation to toddlers' socio-emotional functioning and adaptive skills, mother-reported questionnaires were utilized in the current investigations. It is often suggested that parents lack the necessary expertise in evaluating children's development which affects the reliability of the reports (Nordahl-Hansen, Kaale, & Ulvund, 2014).

However, evidence indicates that parents are reliable reporters of their children's developmental skills, competencies and deficits as they are uniquely positioned to observe and interact with their children across a range of contexts (Sasche & Von Suchodoletz, 2008). They provide information on children's development that is otherwise difficult to capture and measure in laboratory and clinical settings.

Additionally, maternal reports of child competencies have been suggested as having high predictive validity for later child outcomes (Kwon et al., 2013). Perhaps, a combination of parent-reports and direct observations of toddlers' behaviours during play may have afforded us a fuller picture of child social, emotional and adaptive competencies. Future studies incorporating both methods may help to strengthen the findings reported.

Additionally, owing to the relatively small sample size, the different types of coparenting were loaded into two broad coparenting domains. For future research, it

might be interesting to evaluate and understand the independent roles of the different family interactions in child development. For example, how each aspect of the coparenting relationship such as cooperation, competition, warmth, pleasure and displeasure might have differential implications for children's emerging competencies and overall family functioning might give newer insights in this domain of inquiry.

Another limitation is that the data in the majority of the studies were cross-sectional in nature and as such it is not possible to determine cause and effect between coparenting dynamics, parental play behaviours and CDS and toddlers' developmental competencies. A snapshot view of triadic family interactions is not fully representative of the dynamic nature of family relationships. Just as parents influence their children, children too are likely to affect their parents' behaviours (Sameroff, 1975). Such effects were reported and discussed in the longitudinal investigation of the role of toddlers' temperamental traits in the stability of the coparenting relationship (Study 2). As such, a similar longitudinal approach examining the relations between coparenting dynamics and child developmental outcomes may help to illuminate such findings further.

Theoretical Implications

Studies in the current thesis show that although there is value in examining specific relationships in the family systems in relation to child development, it has to be recognized that family processes do not occur in isolation. Lending support to a systemic view of the family, this research highlights that the patterns or dynamics of interactions that exist within a family system regulate the behaviours of the individual members of the system. As pointed out by Minuchin (1985, p.2), "if the individual is part of an organized family system, he or she is never truly independent and can only be

understood in context”. Trying to understand an individual out of context provides incomplete information.

Findings from the current thesis contribute to the relatively young but growing field of coparenting research. First, in relation to the coparenting construct itself, findings showed that the coparenting relationship is influenced by the characteristics and attributes of the interacting partners. While there has been a greater emphasis on understanding such influences in relation to other family subsystems, such as the marital or the parent-child systems, the current findings show that the coparenting relationship too is malleable and susceptible to such influences. Furthermore, despite the null finding pertaining to the cross-sectional association between observed coparenting and toddler temperament, the findings relating to the role of toddler temperament in the development of the coparenting relationship over time illustrate that while parents affect their children’s behaviour, children too exert tremendous influence on the coparenting relationship.

The findings in this research are consistent with the family systems perspective which emphasizes that triadic family interaction is an entity unto itself and not merely the sum of dyadic ones. Focusing solely on dyadic interactions means collecting data from parent-child interactions out of context, the validity of which has been challenged by systems theorists, particularly in relation to children’s social development (Minuchin, 1985).

However, it is worth acknowledging the null findings pertaining to the relationship between coparenting dynamics and parents’ CDS (Study 4 part 2). As discussed in the study itself, the lack of an association between coparenting and

parental CDS could be partly explained by the context in which the interaction occurred. Within a structured-play context involving novel toys, parents may have assumed greater responsibility for familiarizing the toddler with the toy. Thus, irrespective of their coparenting dynamics, parents were focused on assisting their toddler through the task. Additionally, the pathway between coparenting and parental CDS may be an indirect one. Given that this was the first study to examine such associations, further research in a variety of contexts and testing indirect effects is encouraged before reaching a conclusion.

Overall, the findings from these investigations contribute to developmental theories of early influences on children's social and emotional development. The findings draw attention to the importance of taking both positive and negative patterns of coparenting behaviours into consideration to provide a more complete picture of the role of coparenting in child development.

Practical Implications

Findings from this research also have practical implications for family therapy, intervention planning and policy formulation. These findings contribute to the extant literature on family dynamics and their associations with toddlers' developmental competencies. As suggested by Feinberg (2002), family intervention plans targeting the coparenting relationship have stronger effects than those targeted at improving the overall couple adjustment or even individual parenting programs. Early empirical evidence also suggested that coparenting dynamics are more proximally related to individual parenting practices and child outcomes than couple dynamics (Abidin & Bruner, 1995; Bearss & Eyberg, 1998). Given the circumscribed nature of the

coparenting relationship, it presents as a more modifiable target for intervention. Parents may be more accepting of intervention programs targeted at improving their coparenting dynamics compared to programs targeted only at their marital dynamics or parenting practices.

The importance of targeting the coparenting relationship is also reflected in evidence indicating the coparenting relationship as a potential protective and risk mechanism for child socio-emotional and behavioural problems. Increasingly, research suggests that coparenting acts as a mediator of the association between marital adjustment and parenting behaviours (Bonds & Gondoli, 2007; Floyd et al., 1998; Pedro et al., 2012). Strong and supportive coparenting alliances can buffer the negative effects of marital problems on child outcomes whereas undermining coparenting dynamics can have negative implications for child outcomes even within the context of supportive marital relationships. Moreover, given the important role of toddler temperament in the development of the coparenting relationship, professionals like parent educators and family therapists might usefully target coparenting relationships in conjunction with parenting skills that help to meet the temperamental needs of young children, thus ensuring the best possible child and family outcomes.

Additionally, this research can help to inform national policies that invest resources in family services supporting children and families. Such services can be streamlined in ways that help in stabilising and strengthening coparenting relationships in “fragile families” within which mothers and fathers have either failed to establish supportive coparenting relationships or have experienced a disintegration of this relationship over time.

In conclusion, findings from this research make several important contributions. They will help in highlighting the need for agencies, practitioners and educators to be mindful and sensitive to the demographic and individual characteristics of the families and family members that they work with as well as to mothers' and fathers' personal resources and dynamics within the various family subsystems that contribute to the coparenting relationship. Given that the coparenting relationship has been consistently identified as an important source of influence on child development, sensitivity to such factors is critical for the planning, designing and implementation of strategic frameworks for providing family support. This will also aid in deciding what specific accommodations need to be in place for at-risk and distressed families for ensuring the best possible outcomes for children. This is particularly important because coparenting has been consistently identified as an ideal target for intervention that is non-stigmatizing (Feinberg & Kan, 2008). Additionally, fathers tend to view coparenting interventions as important (Frank, Keown, Dittman, & Sanders, 2015) and such interventions have been known to positively impact child outcomes.

The central goal of coparenting interventions with at-risk or distressed (conflicted coparenting) families is to (re)establish consistent child-centred structures in the family system through the development of a supportive coparenting alliance between mothers and fathers. This is primarily done by integrating couple adjustment, education and parenting programs (Feinberg, 2003). For instance, prior to developing an effective coparenting intervention plan, educational programs that increase parents' understanding of the impact of ongoing coparental undermining (conflict, competition) on children is important. With increasing levels of father involvement in children's

lives, findings from this research will help bring to light the nature and processes of parent-child interactions that occur within dyadic and triadic contexts and the implications for toddlers' developing competencies. Most importantly, the findings in this research will help in advancing knowledge and promoting more research in areas that focus on delineating and defining the important role of coparenting dynamics in relation to children's developmental trajectories.

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Appendix A. Ethical Approval



Coláiste na Tríonóide, Baile Átha Cliath
Trinity College Dublin
Ollscoil Átha Cliath | The University of Dublin

F.A.O. Angana Nandy

School of Psychology Research Ethics Committee

2nd July 2018

Dear Angana,

The School of Psychology Research Ethics Committee recognises you as a named investigator on the project entitled "Parent-child interaction and child development outcomes" which received ethical approval in September 2014.

Adverse events associated with the conduct of this research must be reported immediately to the Chair of the Ethics Committee.

Yours sincerely,

Richard Carson
Chair,
School of Psychology Research Ethics Committee

SCHOOL OF PSYCHOLOGY
Áras an Phiarsaigh
Trinity College
Dublin 2

Scoil na Síceolaíochta

Dámh na nEolaíochtaí Sóisialta agus Daonna,
Áras an Phiarsaigh, Coláiste na Tríonóide,
Baile Átha Cliath 2, Éire.

School of Psychology

Faculty of Arts, Humanities and Social Sciences,
Áras an Phiarsaigh, Trinity College,
Dublin 2, Ireland.

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Appendix B. Information sheet for families

Infant and Child



Research Lab

School of Psychology, Áras an Phiarsaigh, Trinity College, Dublin 2

Dear Parent,

Re: time, date

We look forward to welcoming you to the lab on the time and date above. This letter contains some more information about your visit.

Arriving at the lab

Please find a map showing how to find the lab attached.

Taking part

Your child will be with one of you for the entire visit. However, mother and father will be asked to come into a separate nearby testing room, one at a time, to complete some questionnaires and a verbal performance task. You and your child will be able to take breaks when you need them. Tea, coffee and a changing mat are available.

If you are coming in the afternoon, it would be a good idea to schedule your visit for just after your child's naptime. A number of the tasks are intended to be challenging for a two year old and it will be helpful for your child to be well-rested.

The length of the visit depends on the mood of each child on the day, but we will do our best to finish within approximately three hours.

Before visiting the lab

One of the tasks we will ask of your child involves manipulating pieces of cereal (we typically use Cheerios), although your child is not required to eat anything. Please let us know if they have any allergies, or any other information about your child you think might be relevant.

Thank you

At this point, we would like to thank you again for generously giving your time to take part in the study. As always, please feel free to contact us with any questions.

infantresearch@tcd.ie

www.facebook.com/TCDinfantchildresearch

Dr Jean Quigley	quigleyj@tcd.i <u>e</u>	01 896 2697
Dr Elizabeth Nixon	enixon@tcd.i <u>e</u>	01 896 2867

Appendix C. Consent Forms

Parent-Child Interaction: Consent form

I have read the information leaflet and I agree to take part in the study. I understand that this involves being observed and recorded as I interact with my child. I understand that the study will also involve some testing and assessment of my child.

☐

I understand that the information that the researcher collects will be confidential to the research team and used only for the purpose of the research. Any identifying information will be changed.

☐

I understand that I am free to withdraw from participation at any time, and take breaks for me and my child at any time during the study. However I also understand that I will not be able to retrieve my data once it becomes part of an analysis or report.

☐

I understand that if anything emerges during the lab visit that causes the researcher to be concerned about me or my child, the researcher will have an obligation to follow this up afterwards.

☐

Participant (Parent)'s Name(s) [Printed]

.....

Participant (Child)'s Name(s) [Printed]

.....

Participant's Signature(s)

Date

.....

.....

.....

Dr Jean Quigley quigleyj@tcd.ie 01 896 2697
Dr Elizabeth Nixon enixon@tcd.ie 01 896 2867

School of Psychology, Áras an Phiarsaigh, Trinity College, Dublin 2

Future use of data and video material

Parent-Child Interaction: Information and Consent Form

The video material and data collected in the study are very valuable resources which could be used to answer a lot of different research questions.

We would be grateful if you would consider consenting to the inclusion of the data and video material collected from your family for other research projects in the future. All data would be used strictly and solely for research purposes. You and your child would be identifiable in the videos, but only researchers would have access to these and all other data would be anonymised.

Please take the time to consider this request and if you feel you would like to consent to this use of your video, please sign below.

I agree that the researchers may use the video material recorded with my family in future research projects.

☐

I understand that this stored video material will be confidential to the research team and used only for the purpose of research.

☐

Participant (Parent)'s Name(s) [Printed]

.....

Participant (Child)'s Name(s) [Printed]

.....

Participant's Signature(s)

Date

.....
.....

.....

Dr Jean Quigley

quigleyj@tcd.ie

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Dr Elizabeth

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School of Psychology, Áras an Phiarsaigh, Trinity College, Dublin 2

Follow-up

Parent–Child Interaction: Information and Consent Form

We would like to take this opportunity to thank you for your generosity in participating in this study.

This type of research assumes that the way we routinely interact with our infants and young children influences not only their behaviour and responses in the short term but critically influences many aspects of their later development.

The data we have collected from you today is very valuable and can help us to answer many questions about the dynamics of interaction. We are also very interested in how our behaviour now impacts children's development over time. We would love to be able to explore this further with your child at a later date.

If you are willing to participate in a follow-up visit or questionnaire in 1 year's time, please sign below.

I agree that the researchers may contact me to participate in a follow-up study within a 2 year period. ☐

I understand that I am free to decline to participate in a follow-up study when contacted. ☐

Participant (Parent)'s Name(s) [Printed]

.....

Participant's Signature(s)

Date

.....

.....

Dr Jean Quigley

quigleyj@tcd.ie

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Dr Elizabeth

Nixon

enixon@tcd.ie

01 896 2867

School of Psychology, Áras an
Phiarsaigh, Trinity College, Dublin 2

Appendix D. Debriefing sheet

Parent-Child Interaction: Debriefing form

Thank you for your help

Many thanks for giving us your time to participate in our study. Remember that the information which you have shared with us is **confidential** will be used **only for the purpose of the research**.

Any identifying details will be changed to protect your anonymity.

If the lab visit has raised any issues which have been upsetting or distressing for you, we recommend that you get in touch with your GP or your local health centre. Also, please find below the contact details of some relevant organisations which you may find useful.

Barnardos

CallSave 1850 222300 email info@barnardos.ie
www.barnardos.ie

Parentline: Helpline for parents under stress

LoCall 1890 927277 email info@parentline.ie
www.parentline.ie

If you require further information about the research or want to contact the research team, our details are:

Dr Jean Quigley	quigleyj@tcd.ie	01 896 2697
Dr Elizabeth Nixon	enixon@tcd.ie	01 896 2867
School of Psychology, Áras an Phiarsaigh, Trinity College, Dublin 2		

Appendix E. Questionnaires

The Coparenting Relationship Scale

For each item, select the response that best describes the way you and your partner work together as parents:

- | 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|----------------------|--|----------------------------|---|------------------------|---|-----------------------|
| Not
true
of us | | A little bit true
of us | | Somewhat true
of us | | Very
true
of us |
| 1 | I believe my partner is a good parent. | | | | | |
| 2 | My relationship with my partner is stronger now than before we had a child. | | | | | |
| 3 | My partner asks my opinion on issues related to parenting. | | | | | |
| 4 | My partner pays a great deal of attention to our child. | | | | | |
| 5 | My partner likes to play with our child and then leave dirty work to me. (R) | | | | | |
| 6 | My partner and I have the same goals for our child. | | | | | |
| 7 | My partner still wants to do his or her own thing instead of being a responsible parent. (R) | | | | | |
| 8 | It is easier and more fun to play with the child alone than it is when my partner is present too. | | | | | |
| 9 | My partner and I have different ideas about how to raise our child. (R) | | | | | |
| 10 | My partner tells me I am doing a good job or otherwise lets me know I am being a good parent. | | | | | |
| 11 | My partner and I have different ideas regarding our child's eating, sleeping, and other routines. (R) | | | | | |
| 12 | My partner sometimes makes jokes or sarcastic comments about the way I am as a parent. | | | | | |
| 13 | My partner does not trust my abilities as a parent. | | | | | |
| 14 | My partner is sensitive to our child's feelings and needs. | | | | | |
| 15 | My partner and I have different standards for our child's behavior. (R) | | | | | |
| 16 | My partner tries to show that she or he is better than me at caring for our child. | | | | | |
| 17 | I feel close to my partner when I see him or her play with our child. | | | | | |
| 18 | My partner has a lot of patience with our child. | | | | | |
| 19 | We often discuss the best way to meet our child's needs. | | | | | |
| 20 | My partner does not carry his or her fair share of the parenting work. (R) | | | | | |
| 21 | When all three of us are together, my partner sometimes competes with me for our child's attention. | | | | | |
| 22 | My partner undermines my parenting. | | | | | |
| 23 | My partner is willing to make personal sacrifices to help take care of our child. | | | | | |
| 24 | We are growing and maturing together through experiences as parents. | | | | | |
| 25 | My partner appreciates how hard I work at being a good parent. | | | | | |
| 26 | When I'm at my wits end as a parent, partner gives me extra support I need. | | | | | |
| 27 | My partner makes me feel like I'm best possible parent for our child. | | | | | |
| 28 | The stress of parenthood has caused my partner and me to grow apart. (R) | | | | | |
| 29 | My partner doesn't like to be bothered by our child. (R) | | | | | |
| 30 | Parenting has given us a focus for the future. | | | | | |

These questions ask you to describe things you do when both you and your partner are physically present together with your child (i.e. in the same room, in the car, on outings).

Count only times when all three of you are actually within the company of one another (even if this is just a few hours per week).

0 1 2 3 4 5 6

Never Sometimes Often Very Often

(once or twice (once a day) (several times
a week) a day)

How often in a **typical week, when all 3 of you are together**, do you:

31 Find yourself in a mildly tense or sarcastic interchange with your partner?

32 Argue with your partner about your child, in the child's presence?

33 Argue about your relationship or marital issues unrelated to your child, in the child's presence?

34 One or both of you say cruel or hurtful things to each other in front of the child?

35 Yell at each other within earshot of the child?

(R) = Reverse score the item

Scale creation:

Coparenting Agreement = Items 6, 9, 11, 15

Coparenting Closeness = Items 2, 17, 24, 28, 30

Exposure to Conflict = Items 31-35

Coparenting Support = Items 3, 10, 19, 25, 26, 27

Coparenting Undermining = Items 8, 12, 13, 16, 21, 22

Endorse Partner Parenting = Items 1, 4, 7, 14, 18, 23, 29

Division of Labor = Items 5, 20

Brief Measure of Coparenting:

Items 1, 2, 4, 5, 6, 9, 16, 20, 22, 24, 25, 27, 33, 34

Sources of items:

Abidin & Bruner, 1995: 1,4,6,17,23

Cordova, 2001: 10,12,16

Frank et al., 1988: 5,7,13,18, 24, 25, 26, 27,30

Margolin, 1992: 3,15,22,29,34

McHale, 1997: 31,32,33

Dyadic Adjustment Scale

Most persons have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

	Always Agree	Almost Always Agree	Occa- sionally Disagree	Fre- quently Disagree	Almost Always Disagree	Always Disagree
1. Handling family finances	O	O	O_	O	O	O
2. Matters of recreation	O	O	O_	O	O	O
3. Religious matters	O	O	O	O	O	O
4. Demonstrations of affection	O	O	O	O	O	O
5. Friends	O	O	O	O	O	O
6. Sex relations	O	O	O	O	O	O
7. Conventionality (correct or proper behavior)	O	O	O	O	O	O
8. Philosophy of life	O	O	O	O	O	O
9. Ways of dealing with parents or in-laws	O	O	O	O	O	O
10. Aims, goals, and things believed important	O	O	O	O	O	O
11. Amount of time spent together	O	O	O	O	O	O
12. Making major decisions	O	O	O	O	O	O
13. Household tasks	O	O	O	O	O	O
14. Leisure time interests and activities	O	O	O	O	O	O
15. Career decisions	O	O	O	O	O	O

	All the time	Most of the time	More often than not	Occa- sionally	Rarely	Never
16. How often do you discuss or have you considered divorce, separation,	O	O	O	O	O	O

or terminating your relationship?

17. How often do you or your mate leave the house after a fight?	O	O	O	O	O	O
18. In general, how often do you think that things between you and your partner are going well?	O	O	O	O	O	O
19. Do you confide in your mate?	O	O	O	O	O	O
20. Do you ever regret that you married? (<i>or lived together</i>)	O	O	O	O	O	O
21. How often do you and your partner quarrel?	O	O	O	O	O	O
22. How often do you and your mate "get on each other's nerves?"	O	O	O	O	O	O

	Every Day	Almost Every Day	Occa- sionally	Rarely	Never
23. Do you kiss your mate?	☐	☐	☐	☐	☐

	All of them	Most of them	Some of them	Very few of them	None of them
24. Do you and your mate engage in outside interests together?	☐	☐	☐	☐	☐

How often would you say the following events occur between you and your mate?

	Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More often
25. Have a stimulating exchange of ideas	☐	☐	☐	☐	☐	☐
26. Laugh together	☐	☐	☐	☐	☐	☐
27. Calmly discuss something	☐	☐	☐	☐	☐	☐
28. Work together on a project	☐	☐	☐	☐	☐	☐

These are some things about which couples sometimes agree and sometime disagree. Indicate if either item below caused differences of opinions or were problems in your relationship during the past few weeks. (Check yes or no)

	Yes	No	
29.	☐	☐	Being too tired for sex.
30.	☐	☐	Not showing love.

31. The circles on the following line represent different degrees of happiness in your relationship. The middle point, "happy," represents the degree of happiness of most relationships. Please fill in the circle which best describes the degree of happiness, all things considered, of your relationship.

☐	☐	☐	☐	☐	☐	☐
Extremely Unhappy	Fairly Unhappy	A Little Unhappy	Happy	Very Happy	Extremely Happy	Perfect

32. Which of the following statements best describes how you feel about the future of your relationship?

☐ I want desperately for my relationship to succeed, and *would go to almost any length* to see that it does.

☐ I want very much for my relationship to succeed, and *will do all I can* to see that it does.

☐ I want very much for my relationship to succeed, and *will do my fair share* to see that it does.

☐ It would be nice if my relationship succeeded, but *I can't do much more than I am*

doing now to help it succeed.

☐ It would be nice if it succeeded, but I *refuse to do any more than I am doing now* to keep the relationship going.

☐ My relationship can never succeed, and *there is no more that I can do* to keep the relationship going.

Parenting Sense of Competence Scale

Please rate the extent to which you agree or disagree with each of the following statements.

	Strongly Disagree	Somewhat Disagree	Disagree	Agree	Somewhat Agree	Strongly Agree
	1	2	3	4	5	6
1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired.	1	2	3	4	5	6
2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age.	1	2	3	4	5	6
3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot.	1	2	3	4	5	6
4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated.	1	2	3	4	5	6
5. My mother was better prepared to be a good mother than I am.	1	2	3	4	5	6
6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent.	1	2	3	4	5	6
7. Being a parent is manageable, and any problems are easily solved.	1	2	3	4	5	6
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one.	1	2	3	4	5	6
9. Sometimes I feel like I'm not getting anything done.	1	2	3	4	5	
10. I meet by own personal expectations for expertise in caring for my child.	1	2	3	4	5	6
11. If anyone can find the answer to what is troubling my child, I am the one.	1	2	3	4	5	6

- | | |
|---|-------------|
| 12. My talents and interests are in other areas, not being a parent. | 1 2 3 4 5 6 |
| 13. Considering how long I've been a mother, I feel thoroughly familiar with this role. | 1 2 3 4 5 6 |
| 14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent. | 1 2 3 4 5 6 |
| 15. I honestly believe I have all the skills necessary to be a good mother to my child. | 1 2 3 4 5 6 |
| 16. Being a parent makes me tense and anxious. | 1 2 3 4 5 6 |
| 17. Being a good mother is a reward in itself. | 1 2 3 4 5 6 |

Appendix F. Coding Schemes

Coparenting Coding Scheme

Coparenting Coding Manual: New Parents Project (version April 2017)

Adapted from Cowan & Cowan (1996) and Bayer (1992). For permission to use: schoppe-sullivan.1@osu.edu

UC = Uncodable

May be due to faces not visible or voices muffled/mumbled (use sparingly)

Co-Parenting Scales

Cooperation: Reflects the degree to which parents help and support one another in teaching and playing with the child. Help and support between parents can be instrumental as well as emotional. For instance, for the pop-up toy, higher scores are warranted if one parent pushes the toy down in a helpful way. That would be an example of instrumental support.

(5) Very High Cooperation: Parents are very frequently cooperative. Cooperation seems effortless. They do not interrupt one another or distract from the other's interventions with the child.

(4) High Cooperation: Each parent builds on the other's efforts to help the child. There are a few instances of minimal interruption or distraction from the other parent's interactions. Cooperation is easy/smooth and frequent.

(3) Moderate Cooperation: Parents generally work well with and support each other, though there are times when helping one another lapses and parents appear less in concert.

(2) Low Cooperation: Parents are usually not supportive or working together; they appear to have separate ways of working with their child. Occasionally, they'll share the same approach.

(1) Very Low Cooperation: No effort is made by parents to support and assist each other. Parents appear to be working with the child independently.

Competition: Parents try to outdo each other's efforts to teach, work, and play with the child. Lower-level competition includes parents using different approaches with the child but this type of competition seems accidental. At lower and moderate levels, couples lack coordination. But, in couples that receive higher ratings, parents appear to be intentionally competing for the child's attention.

(5) Very High Competition: Efforts to outdo one another's teaching/playing take precedence over helping the child learn. Competition is consistent and obvious throughout all parts of the interaction. Parents' main concern is clearly to outdo each other.

(4) High Competition: Parents may be playing with the child, but frequently try to outdo each other to get the attention of the child. There are multiple instances of competition, but it is not seen in all parts of the interaction.

(3) Moderate Competition: There are multiple low-level instances of competition or 1 very strong instance seen.

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(2) Low Competition: Occasionally, a comment or behavior will be made by one parent suggesting that they feel they have a more effective parenting strategy, though it comes across as constructive (or accidental) and not challenging. May be 1 instance of trying to mildly out-do each other. (1) Very Low Competition: No competition visible.

Relative Interaction Time: This scale is designed to measure strictly the amount of relative time the parents spend interacting with the baby during the episode.

(5) Father Dominates Interaction: The father controls almost all interaction with the baby with almost no contributions from the mother.

(4) Mostly Father Interaction: The mother may have some interaction with the baby, but the majority of the interactions are initiated by the father. The father also spends most of the time playing with and interacting with the baby.

(3) Equal Interaction: Interactions with the baby are equally shared by mother and father.

(2) Mostly Mother Interaction: The father may have some interaction with the baby, but the majority of the interactions are initiated by the mother. The mother also spends most of the time playing with and interacting with the baby.

(1) Mother Dominates Interaction: The mother controls almost all interaction with the baby with almost no contributions from the father.

Maternal Gatekeeping Scales

Negative Control: The mother is rated on this scale for her overall negative control, based on both her verbal and nonverbal behavior during the episode as well as the intent of the message given. Negative control can be defined as any attempt/behavior to limit the father's interaction with the baby. ***A mother may demonstrate her expertise in performing a certain task, assert lack of confidence in the father's abilities, or attempt to control all interaction with the child – she appears intent on limiting the father's interactions.***

(5) Very High Negative Control: Very intense negative controlling behaviors are seen. Moreover, no effort is made to disguise this behavior. This may be seen in a comment such as “You’re not doing it right, this is how you’re supposed to do it!” or the mother taking control (negatively, not in a supportive fashion) of a task that the father is trying to do (2 clear comments; often accompanied by subtle comments/expressions).

(4) High Negative Control: Several moderate intensity gestures or comments might be made throughout the entire episode, or one very dramatic example of negative controlling behavior may be noted. These expressions may also be accompanied by nonverbal or subtle indications of disapproval, such as shaking her head or rolling her eyes (1 clear comment and other subtle comments/expressions).

(3) Moderate Negative Control: Some moderate negative controlling behavior is directly expressed over the course of the episode. The behavior, however, is relatively low in intensity. The mother may assert comments that reveal her better knowledge of parenting by instructing how to perform a task “properly”. The mother may express these controlling thoughts and comments through the baby, such as, “Daddy, don’t call me that” or “Daddy, I don’t like that noise” (1 clear comment).

(2) Low Negative Control: Only mild negative controlling behavior is seen in this episode. The behavior is very subtle and is alluded to in a mild gesture, facial expression, or comment (very mild, questionable behavior).

(1) No Negative Control: No negative controlling behaviors (nothing even subtle) are exhibited over the course of the episode.

Facilitation: On this scale, mothers will be rated for their overall positive support of the fathers’ interactions with the child. Facilitation is defined as a mother’s efforts to support and encourage the father’s participation with the baby. This may be seen in compliments, positive instruction, or helping to make time with the baby more easy and enjoyable for the father.

(5) Very High Facilitation: Very intense facilitation of the mother is demonstrated dramatically throughout the entire episode. The mother’s primary goal seems to be promoting interaction with the father. Several moderately intense behaviors or comments may be seen over the episode. The mother may make comments through the baby such as, “It’s so fun to be with Daddy,” or “Daddy does such a good job of undressing me”.

(4) High Facilitation: Fairly strong facilitation is seen in the episode. Although facilitation is not seen throughout the entire task, the mother’s behaviors or comments seem to be directed towards encouraging the father’s participation with the baby. The mother’s tone must clearly be positive, and not sound the least bit critical or condescending.

(3) Moderate Facilitation: Some moderate facilitation is noted over the episode, even though this behavior tends to be more subtle and low in intensity. This could be one direct comment or a few indirect comments. A score of (3) could include one fairly strong positive comment or multiple low level positive compliments.

(2) Low Facilitation: Some mild facilitation is seen. The mother may come to the father's aid in playing with the baby. Slight acknowledgements of the father may be made through an indirect comment, but not more than once. Comments such as "Look at Daddy!" may be used. Facilitation is more than likely nonverbal.

(1) No Facilitation: No facilitation is made by the mother over the course of the episode.

Individual Maternal/Paternal Scales

Warmth: One parent demonstrates affection and positive regard for the other; laughing, touching, smiling, saying nice things to each other. Parent attempts to involve the other in the interaction – a connection is felt and can be seen between them. Parent provides emotional support, reassurance, and encouragement for the other in an authentic, not sarcastic, manner.

(5) Very High Warmth: Continual expressions of warmth (i.e. smiling, laughing, touching, gazing into each other's eyes) fill the episode. If coders see any expressions of physical affection (hugs, kisses, holding hands), a "5" should be seriously considered.

(4) High Warmth: One parent clearly demonstrates affection for the other. This warmth may be visible or just a general feeling of connectedness between them. The warmth, however, is not as pervasive as would be seen in a level (5).

(3) Moderate Warmth: Parent displays a reasonable amount of affection for the other. The sense of connectedness is apparent but not striking. The parent interacts lovingly, at times, with the other (smiles, positive comments, etc.), but this behavior or the connection behind it is not apparent throughout the episode.

(2) Low Warmth: Parent is less open and relatively tentative in their display of affection for their partner. There is a very limited sense of connectedness between them.

(1) Very Low Warmth: No warmth visible or felt from partners; seem disconnected from each other.

Coldness: Parent seems distant, closed-off, and lacks affection for the other. There is a sense of the parent keeping a distance between his/her partner. This is visible though

curtness (shortness), snubbing (ignoring), hostile responses, or a general lack of response towards the other parent's attempts to engage in interaction.

(5) Very High Coldness: Non-engagement with partner predominates and appears to be intentional. Parent seems disinterested in partner and *disdain* is visible. One parent has no reaction to the other AT ALL. **(Some snubbing must be seen).**

(4) High Coldness: Parent interacts with partner, but in a clearly withdrawn or distant fashion. Parent rejects partner's attempts for closeness (this may be *emotional or physical*). Frequent snubbing is seen. **(Some snubbing must be seen).**

(3) Moderate Coldness: Parent lacks interaction with partner throughout entire episode OR some mild snubbing (verbal or nonverbal) of partner's attempts get close to the other partner (physically or emotionally). There are multiple low level snubbing instances or 1 strong instance shown.

(2) Low Coldness: Some withdrawal is visible. Parent is generally open to his/her partner and to their attempts for warmth without necessarily initiating this contact themselves. There may be 1 instance of low level snubbing OR a slight distance between partners. They do not interact much but are not necessarily hostile.

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(1) Very Low Coldness: No coldness visible between parents.

Pleasure: The parent appears to enjoy sharing and collaborating in the parental role and is able to demonstrate that during the interaction. The partner appears to take pleasure in the OTHER PARENT'S relationship with the child. They are able to watch comfortably when the other is interacting individually with the baby. The parent displays playfulness and humor with the other about their respective parenting styles/practices and their relationship with the child.

(5) Very High Pleasure: Such expressions of pleasure and appreciation are very frequent and of high intensity throughout the entire episode. Parent is very attentive and thoroughly enjoys watching partner play with the child. The parent may smile lovingly while the other is playing, showing no negative emotion or disinterest whatsoever.

(4) High Pleasure: Parent expresses/shows their enjoyment and appreciation of how their partner plays with the child and of the relationship between their partner and the child. They can comfortably share involvement with their partner or enjoy watching the dyad together. Intensity of pleasure, however, is not as high as in a level (5).

(3) Moderate Pleasure: Parent seems to enjoy partner's relationship with child and parenting with their partner. However, enjoyment is not present at all times and is generally muted in some way. The parent's enjoyment of the other is partly inferred rather than directly observed.

(2) Low Pleasure: Though parent does not necessarily show negative feelings toward the other, they show enjoyment of the other parent's relationship with the child only on occasion.

(1) No Pleasure: No pleasure is visible between parents. Their response to partner's relationship is either neutral or negative in tone.

Displeasure: The parent expresses dislike of their partner's style of interacting with the child either directly or indirectly (sarcasm). This can be a reaction to the positivity or negativity in their relationship. Parents do not enjoy working together.

(5) Very High Displeasure: Parent is displeased OR threatened by other parent's relationship with the child. Displeasure characterizes the episode. This may be expressed through *comments or gestures throughout the episode* ("He likes playing with you more than me" "Don't hold her like that!" or rolling of the eyes) (at least 2 comments and low level expressions/behaviors).

(4) High Displeasure: One parent actively shows or says they dislike how the other is parenting, or criticizes the other's relationship with the child. Statements are overt and feelings are clearly shown, though not as often as in a level (5) (Multiple comments).

(3) Moderate Displeasure: Predominately sarcastic or subtle comments or tone during interaction suggest a parent's dislike of the other's relationship with the child, OR on only one occasion a partner shows one clear comment indicating displeasure OR multiple low level displeasure indications.

(2) Low Displeasure: Parent is generally unbothered by their partner's relationship with the child; however, they might occasionally jab or otherwise indicate some negative feelings. *Non-verbal* indications of displeasure: laughter, sounds, or faces. If situations are difficult to decipher but appear to possibly be negative in some way score a 2.

(1) Very Low Displeasure: No displeasure is visible.

Perception of Competence: This scale measures each parent's observed/inferred feelings of how competent they are as a parent. It measures their confidence in their abilities to interact with the baby without assistance from the other parent.

(5) Very High Competence: Parent seems to perceive themselves as quite competent with the baby. They perform tasks with a self-assured attitude, and portray themselves as extremely competent throughout the episode. The parent seems to have implicit knowledge of the baby's preferences, which is likely derived from a history of time spent with the baby. Interactions and tasks are performed fluidly, not awkwardly, and they do not make any negative attributions about their own competence with the baby.

(4) High Competence: The parent seems to perceive themselves as handling the task well and is in control of the situation with the baby; they are clearly more confident than not. Although some slight doubt about their own abilities could be introduced, it is rather mild in intensity, and does not detract from their perception of their confidence. Nonverbal or subtle doubt; faces, laughter, etc. General sense of hesitance about certain aspect of parenting skill.

(3) Moderate Competence: The parent portrays themselves as fairly confident and secure in their interactions with the baby, but may also question their ability to respond to the baby's needs. The tone is not that the parent perceives themselves as unable to handle the baby; but rather, the parent questions a particular aspect of their level of ability with the baby. This may be seen in a comment they make about a particular action they took with the baby, questioning their decision. One comment is made such as, "You're not making this very easy for me!" (to the baby). The parent seems uncomfortable at times, but still completes tasks.

(2) Low Competence: The parent portrays themselves as not being very competent with the baby during the episode, although some slight confidence about how to handle the baby might be indicated. One parent may not involve themselves much with the baby, or they may make several self deprecating comments during the episode ("I made her upset"), but confidence is not completely lacking. More than one self-deprecating comment is made by the parent.

(1) Very Low Competence: Parent seems to strongly question his/her competence level. S/he makes several negative comments about his/her abilities throughout the entire episode and perceives the self as being rather inadequate in handling the baby. No positive attributions toward their own interactions with the baby are made. May defer to other parent for tasks they doubt their skill in.

Parental play behaviours coding scheme

Codes	Behaviours
Active Play/play partner	This applies when the parent models/physically manipulates some aspect of the toy as a way of exploring the toy, modelling an action for the child or physically facilitating the child with a specific activity. This is most frequently accompanied by verbal instructions/commands/commentary/questions (although a few short instances may occur during which there is complete absence of any verbalisations). As such, the parent relies heavily on both visual and verbal cues as a means of helping the child enjoy the play activity, stay focused on the goals, reduce distractibility and build frustration tolerance. This is considered to be an active play role as parents are not just facilitating but also engaging in play themselves.
Verbal facilitator	Parent observes and provides verbal instructions/commands/ commentary and asks questions to facilitate the child's play. However, there is complete absence of modelling/physical manipulation of any aspect of the toy. In other words, parents adopt a facilitative role relying only on verbal cues as a means to keep children engaged, focused on their goals and to reduce distractibility
Observer	Parent sits back and observes the play activity. There is complete absence of physical manipulation of toys/play facilitation as well as any verbalisations. There may be vocalisations such as laughter and/or random toy touches. This is considered to be a passive role as parents are neither facilitating nor engaging in playful behaviours themselves.
Other	Parent engages in non-play task activity such as giving a sippy cup/snack to the child or stopping the child from touching the cameras or running out the door. Getting up to drink their coffee etc. Verbalisations are also non-play task related such as when parents talk to each other about their child or a separate even altogether. Parent touches the toy without any specific purpose. The touch is not intended to facilitate the child's play or for exploring the toy themselves. This might involve putting a few toy pieces back into a box/nudging the toy slightly which have very little to do with the actual play activity.

Parents' child-directed speech (CDS) coding scheme

<u>Facilitative speech</u>	<u>Directive speech</u>	<u>Gentle guidance</u>	<u>Referential speech</u>	<u>Other</u>
Questions 'Wh' Questions (open-ended questions)/information seeking questions: Used for seeking information from children Examples: "Where is Mr. Teddy's coat?" "Where's Mr. Potato head's hat?" What do you want to play with next? Close-ended/informative questions Examples: "Do you want to play?" "What colour is the jacket?"	Commands Examples: "Put this piece there" "Give Mr. potato head a hat" "Show it to mummy" "Sit down" "Look" "See" Prohibitions Examples: "Stop throwing the toys" "Stop running"	Suggestions, praise and encouragement "Maybe we should help teddy get dressed" "Good job" "Good boy" "Well done"	Describing events or labelling objects Language focussing on playful explanations/descriptions, labelling of objects in the ongoing play task. Examples: "I think Mr. Bear is cold" "That's a blue lace" "It's like the strap on your buggy" "Oh!The zip is stuck" Includes "yes/no, now, yeah, Ok"	Random exchanges that contribute little to the task at hand Example: parents asking the child if he/she needs a snack/use the toilet/needs a pacifier and other exchanges that have little to do with the play task Parents' talking amongst themselves-unrelated to the play task Fillers such as Oh, Umm, Hmm Incomplete utterances