The study of Triadic Family Interactions: the Proposal of an Observational Procedure

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Abstract

In the present article we provide an analytical review of 26 recent studies, which investigated triadic mother-father-child interactions through observational procedures. We focused on the methodological framework and compared the studies according to different criteria, in order to highlight the complexity of the object of study as well as the variety of dimensions and measures that have been used. Even if all the considered studies were designed to analyze triads, very few used coherently triadic categories; most of them focused on the individual members of the triad or on the parents with respect to the child. Joining the research that have stressed the importance of focusing on the reciprocal interactions of all members of the triad, we propose a methodological procedure that allows to describe the triad as a system without losing sight of the single participants and the simultaneity, interdependence, and processuality of their actions.

Keywords Triadic family interactions. Family observational methods. Microanalysis. Mother-father-child triad. Microtransitions and configurations. Triadic interaction analytical procedure

Introduction

The present review concerns the methodology and the procedures for the study of triadic family interactions. The investigation of family relationships is very important in psychology, in order to understand protective and risk factors in the developmental trajectories of human beings. Indeed the relationships between family members – particularly referring to parents-children relationships – are a very important context for the development of the individuals: they represent the primary network in which individuals fulfill their needs, construct ties and identities, and learn emotional competence and social skills. Thus, research has extensively investigated the links between family relational dynamics and individual developmental outcomes from several theoretical perspectives. Among these, developmental research has focused primarily on the mother-child dyad, from different theoretical approaches. For instance, in the field of attachment research, several studies have analyzed the mother-child relationship and its influence on child's development (Steele et al. 1999, 2002; Warren et al. 1997); other studies have examined the influence of father-child interaction on attachment development (e.g.,: Grossmann et al. 2002). The connection between children's outcomes– such as socio-emotional competence in interactions with peers – and family functioning has been examined also from a social constructionist perspective focusing exclusively on the dyadic mother-child relationship (Eisenberg et al. 2003; Garner and Power 1996; Lunkenheimer et al. 2007; McDowell et al. 2002). Even though some studies have gone beyond the mother-child dyad and highlighted the importance of father-child relationship (Paquette 2004; Roggman 2004; Tamis-LeMonda 2004), the developmental research has investigated the impact of

family relationships on individual development focusing mainly on dyadic relational contexts within a family. Even though such an incredible amount of studies have produced a great deal of understanding on the parents-children relationships, the family cannot be reduced to a sum of dyadic relationships (Everri et al. 2014). To this end, Cox and Paley (1997) have underlined the importance of using a systemic perspective to understand families as well as child development. The use of systems metaphor in studying families highlights the idea that the family is a "complex, integrated whole" (Minuchin 1988, p.8) in which members are inevitably interdependent, exert a continuous and reciprocal influence on one another, and are inextricably embedded in the larger family system. The interdependence doesn't concern only the family members and their behaviors but also the relationships between them. Furthermore, Cox and Paley (1997) describe the hierarchical structure of family as an organized system, made of smaller subsystems (e.g., parental, marital, and sibling) that influence each other and organize into an adaptive whole. Given these properties of the family system, the need for studying families as units and thus extending the analysis from a dyadic to a triadic or a whole-family level is particularly felt. Triadic contexts, such as mother-father-child interactions, represent a more complex environment than the sum of the several separate dyadic relationships. Indeed in triadic contexts children can repeatedly experience and explore different interactive configurations and roles; they can learn abilities such as interacting with one partner, interacting with two different partners at the same time, and being in the "third party" role while the other two are in relationship (Cigala et al. 2014; FivazDepeursinge and Corboz-Warnery 1999). They can also experience patterns of conflict management (Grych 1998), and learn patterns of turn-taking, co-operation, and hostility-competitiveness between adults (McHale and Rasmussen 1998). Hence triadic family interactions may play an important role in the development of children's social and emotional competences. With reference to the studies that have investigated triadic relational contexts, some important authors are worth considering for their pioneering work. A revolutionary contribution in the field of family research originates from the construct of coparenting elaborated by McHale (McHale 1995, 2007; McHale and Cowan 1996; McHale and Lindahl 2011). In a context in which researchers have considered mainly the dyadic mother-infant relationship for decades, the conception of a shared parenthood – hence co-parenthood – is truly innovative, as it has introduced a triadic look on interactions occurring within the family. McHale and colleagues have elaborated an original procedure for evaluating the family, the Coparenting and Family RatingSystem (CFRS; McHale et al. 2000a), using global ratings to capture the quality of the coordination between adults while interacting with the child. Another important and influential piece of work comes from the Lausanne group's studies that have represented a turning point in family research and a meeting point of family theorists' and developmental researchers' contributions. In their The primary triangle (1999), Fivaz-Depeursinge and Corboz-Warnery have introduced an innovative way of thinking and studying families, pointing out the importance of considering the mother-father-child triangle as the primary developmental context for children. Furthermore, they have introduced their innovative method for studying family interactions: the Lausanne Trilogue Play (LTP), a procedure that has inspired several following works, as it allows to capture all three participants' contribution to the interaction. In studying triadic interactions, the methodological issues are of central importance. Although self-report methods have been extensively used in

family research in order to investigate the representative level (perceptions and representations of family's members), among the different methods that can be used, the observational procedures are the most suitable ones to assess the interactive level. Indeed, they allow to directly observe how one's behavior interrelates with the others'. Furthermore, they allow studying how the different interactive behavioral sequences unfold across time and hence they allow to observe and describe the ongoing processes (Margolin et al. 1998). Finally they allow investigating aspects and dimensions beyond the participants' awareness, unlike self-report procedures which necessarily detect behaviors, feelings or perceptions accessible to the participants (Margolin et al. 1998). Although the observational research of triadic family interactions is rare, because of the difficulty in developing proper procedures, a growing number of studies inspired by the pioneering work of the McHale 's and Fivaz-Depeursinge's groups is lately pointing out the importance of triadic relationships and processes; most of them propose an integrated approach, which combines highly sophisticated methods of microanalysis of observed interactions on the one hand and the adoption of the whole-family perspective on the other hand. Because of the multiplicity of layers implied in the analysis of an object of study that is defined by the interconnection of individual and system processes, some methodological specifications are needed. Among them, we claim that it's important to distinguish between the triadic perspective and the triadic categories. Triadic perspective refers to the theoretical level, and evokes the need of considering triadic contexts of interaction; the triadic categories refer to the methodological level, in particular to simultaneously focusing on the three members' behaviors and their circularity and reciprocity. Triadic perspective is now widespread in family research and it is expressed in the elaboration of triadic theoretical constructs on which there is agreement among researchers. Instead, there is a lack of convergence on the triadic indices through which to assess the triadic constructs. In fact, the indices used present a great variability both for the typology and the level of the interactive focus. It's exactly this variability that needs to be emphasized and examined.

The Aim of This Article

According to the reflections exposed above, this review represents a critical analysis of the recent empirical studies on triadic family relationships investigated by the means of observational procedures. We aim specifically to compare the methodological frameworks in order to highlight similarities and differences in the application of these methods. In particular, we will focus on the above described methodological distinction between triadic perspective and triadic analytical categories. Finally we present an observational procedure that we elaborated for studying triadic interactions.

Method

Inclusion Criteria

The studies we will examine below resulted from the adoption of strict inclusion criteria. First of all we considered only recent research contributions, more specifically those published between 2000 and 2014[1] Secondly, research articles had to be published on journals indexed both on Web of Science and SCOPUS (2). As we were interested in the investigation of family relationships, we selected only the studies that specifically

focused on triadic family interactions between mother, father, and child (3). The adoption of observational procedures in the analysis of interactions was an additional inclusion criterion (4). Selected studies were then required to have used interactive tasks in the assessment of mother-father-child interactions such as structured or non-structured play, excluding those employing only discussion tasks (5). Finally, only the investigations that considered non-clinical families samples were included (6). We excluded the articles that focused on physiological aspects –for instance levels of oxytocin and cortisol – related to patterns of triadic interactions because not pertaining to our scope. We also excluded the contributions that introduced interventions or trainings in order to promote interactions between parents and child, as we only aimed to investigate the methodological procedures through which triadic interactions had been studied and assessed, and not specific intervention programs.

Research Parameters

The reviewed studies were identified consulting the EBSCO psychology online database, more specifically PsychINFO and Psychology and Behavioral Sciences Collection. The search literature was conducted through the following key words present in the articles' title or abstract: triadic family interactions, triadic play, triadic context, triangular interactions, mother-father-child interactions, and mother-father-infant interactions. Some additional studies were located from the references of the previously identified studies. 26 articles matched the inclusion criteria; they were published on several journals indexed in Web of Science and SCOPUS, with a greater confluence of contributions in two : Journal of Family Psychology (6 articles) and Family Process (5 articles).

Comparison Criteria

We compared the 26 studies on the basis of several parameters: 1) sample characteristics (samples size, ethnicity, family composition, and mean age of children); 2) observational procedures (the observational setting, the task used, the duration of the assessment, and the data collection procedures); 3) theoretical constructs addressed by researchers; 4) coding systems adopted for the data analyses. We report below the results of the analysis for each of these dimensions (see also Table 1 in appendix).

Sample Characteristics

The number of participants varied from a minimum of 16 (Westerman and Massoff 2001) to a maximum of 234 families (Sturge-Apple et al. 2010). For half of the studies (13 out of 26) the sample size was between 40 and 70 triads. Many other studies (9 out of 26) were conducted on samples between 90 and 150 families. Only two studies surpassed the threshold of 150 triads (Feldman et al. 2001; Sturge-Apple et al.2010) while other two considered less than 40 families (Keren et al. 2005; Westerman and Massoff 2001). Two-thirds of the contributions (17 out of 26) had a sample composed by American families of Caucasian ethnicity. However some studies had more ethnically heterogeneous samples (see: Doohan et al. 2009; Lindsey and Caldera2006; Stroud et al. 2011; Westerman and Massoff 2001) or families of different nationalities (e.g.,: Feldman et al. 2006; Gordon and Feldman2008; Keren et al. 2005; Favez et al. 2013; Frascarolo et al. 2003; Von Wyl et

al.2008; De Mendonça et al.2011). The samples were all composed of mother, father and child triads. Children's age varied depending on the research aims: the minimum age was 3–4 months (see: Cannon et al. 2008; Frascarolo et al. 2003; McHale et al. 2008; Von Wyl et al. 2008) up to a maximum of 7–9 years (Doohan et al. 2009) and 5 –12 years (Westerman and Massoff 2001) with an average of 29.01 months. We reported the samples characteristics in order to offer the readers a global picture of the participants in the studies we chose to analyze, but for the aim of the present article, the dimensions we will particularly focus on are those that follow from now on.

Observational Procedures

All the authors considered at least one observation of a triadic family interaction – which was one of our inclusion criteria – where parents and child were involved. One study (McHale et al. 2000b) included also the siblings. For the purpose of comparing different interactive contexts, 14 studies contemplated also the observation of parent– child dyadic interactions (see for instance: Brownetal.2009; De Mendonçaetal.2011; Kwon and Elicker 2012; Lindsey and Caldera 2006; Shigeto et al. 2014), or mother-father dyadic interactions (see: Elliston et al. 2008; Kitzmann2000; Sturge-Apple et al. 2010). 22 families were observed once, four were observed twice or more over time (Favez et al. 2013; Feldman and Masalha 2010; Feldman et al. 2006; McHale et al. 2000b). For about half of the reviewed studies (14 out of 26) the observational settings were research laboratories (see for example: Kitzmann 2000; Von Wyletal. 2008; Frascarolo et al. 2003; Von Wyl et al.2008). For the remaining 12studies the families were visited at home (see: Elliston et al. 2008; Feldman and Masalha 2010; McHale et al.2008; Schoppe et al. 2001; Elliston et al. 2008; McHale et al.2008). As far as the tasks to be accomplished by participants, these studies show a large variety. Overall two types of task can be recognized: the unstructured ones and the more structured ones, the latter including specific activities or instructions. Generally the unstructured tasks called for free play sessions involving the parents and the child: in some cases researchers provided some children age-appropriate toys (see: Keren et al. 2005); in other cases, families used the child's own ones (see: Feldman et al. 2001; Gordon and Feldman 2008). Some studies contemplated a combination of different tasks, including both specific structured tasks and free play sessions (Blandon et al. 2014; Cannon et al. 2008; Feldman et al. 2006; Kwon et al. 2012; McHale et al.2000b; Sturge-Apple et al.2010). The duration of observed triadic interactions, when specified, varied on the basis of the tasks from a minimum of 5 min (Feldman et al. 2001; Gordon and Feldman 2008) to a maximum of 30 (Jacobvitz et al. 2004), with an average of 13.63 min. Finally, regarding the data collection procedure, all the reviewed studies videotaped the observed interactions, and the coding process was conducted directly on videorecordings.

Theoretical Constructs

Across the reviewed articles several theoretical constructs investigated through the observational assessment of the triadic interactions can be identified, and they vary according to the focus of the analysis, the level of abstraction and the level of analysis. In fact, even if all the reviewed articles claim to analyze triadic interaction, not all of them focus on triads. Some constructs concentrate on parents' relationships or interactions within the

triadic interactive context. Among them, coparenting has a central position. Coparenting is conceptualized as the quality of the coordination between adults in their parental roles while interacting with the child. All the studies agreed in considering coparenting as a complex construct composed by several dimensions, among which the supportive/cooperative and the undermining/competitive behaviors (Blandon et al. 2014; Gordon and Feldman2008; Kitzmann2000; Kwon and Elicker 2012; McHale et al. 2000b, 2008; Schoppe et al. 2001; Stroud et al. 2011). Parenting quality concentrates on parents yet it points at their behaviors instead of their relationship. In particular parenting quality refers to the quality of behaviors that the parents direct toward the child, suchas sensitivity, involvement, positive regard, and affect on the one hand,orintrusiveness,detachment,disengagement,negativeregard,parentalcontrol on the other hand (Kwon et al. 2012; Lindsey and Caldera 2006;,Elliston et al. 2008; Kwon and Elicker 2012). Some authors explicitly talk of family relational patterns that are though operationalized in terms of child–parent interaction or parents' behaviors. For example, Feldman et al. (2006) focused on the constructs of family relational patterns and teaching strategies, the first operationalized in terms of face-to-face exchanges, social gaze, active touch, object presentation, and physical contact, and the latter in terms of directions, suggestions, reinforcement, and concrete assistance. Doohan et al. (2009) focused on parental structuring behavior during parent–child teaching interactions. Interesting is the notion of interactional synchrony that focuses on parents' relationship, also considering though how the child responds to parents behaviors. In particular, interactional synchrony is defined as the temporal coordination of microlevel relational behaviors into patterned configurations, repeated over time (Gordon and Feldman 2008) and as an optimal adjustment between the social partners' behaviors that are mutually regulated, reciprocal, and harmonious (De Mendonça et al. 2011). Other constructs, instead, refer only to children's behaviors, particularly i) child's interactive behavior toward parents, evaluated in terms of positive engagement or negativity (Kwon et al. 2012), and ii) child compliance, that is a prototypic form of early self-regulation defined as the ability of children to initiate, manage, and modulate their behavior in response to parental requests emerging as a result of the interaction between the child's individual characteristics and parental control strategies (Kwon and Elicker 2012). McHale et al. (2008) proposed the concept of the infant triangular capacity, as the capacity of sharing attention with two people. However most of the theoretical constructs concerned systemic aspects related to family functioning, processes, or structure. Doohan et al. (2009) for example introduced the notion of family warmth in terms of positive and negative verbal and non verbal expressions. Family functioning was differently defined and operationalized. Many have referred to family functioning in terms of cohesiveness, yet some identified such a construct through the analysis of the sense of togetherness and closeness expressed by family members (Shigeto et al. 2014) or in terms of cooperation and autonomy versus avoidance and rigidity (Feldman and Masalha 2010); other authors evaluated the level of cohesiveness through the analysis of boundaries. In particular Sturge-Apple et al. (2010) evaluated "family functioning" according to three profiles (harmony/cohesiveness, disengagement, and enmeshment) detectable through the analysis of the boundaries differentiating the family subsystems. Also Jacobvitz et al. (2004) referred to boundaries (defined as implicit rules that govern interaction and regulate the amount of contact with others) and boundary disturbances indicative of different triadic family interaction

patterns: the enmeshing, the controlling, the hostile, and the emotionally disengaged interaction patterns. Von Wyl et al. (2008) focused on Trilogue Quality, in terms of emotion charged circular process of action and response within a mother-father-child triad. Referring to marital conflict, Westerman and Massoff (2001) considered a similar construct which is the process of the child being "caught in the middle" of interparental discord, and approached this issue by studying family interactions in terms of triadic coordination; this construct was defined as how a contribution by one participant in a three way interaction relates to how another participant is behaving toward a third person. Family alliance is a multidimensional construct used by many authors to analyze family functioning. Favez et al. (2013) operationalized family alliance as "the family's ability to coordinate to successfully fulfill a task in everyday activity such as playing together or having a meal" (p. 26). This interactive coordination depends on four hierarchical functions: a) participation of all family members; b) organization in role distribution; c) focalization on a common focus of interaction; d) affect sharing and empathy. Also McHale et al. (2008) referred to the construct of family alliance providing the same definition. Instead Schoppe et al. (2001) and Kitzmann (2000) considered family alliances as a structural property of the family system, referring to dimensions such as authority distribution and boundaries between different family subsystems (Minuchin 1974). In addition to the consideration of the structural aspects of family functioning, these authors considered the family affective processes, conceptualizedasemotionalexchangesamongallfamilymembersincludingbothpositiveand negative aspects, and also the family's typical response to interactions within and among family subsystems. From this analysis, the triadic family interactions emerge as declined in many and different constructs revealing how the object of study is complex, polyhedral and multifaceted. In particular, the various authors analyzed the triadic interactive space starting from constructs that differ from each other with respect to the interactive level considered. Some constructs, such as parenting quality or child's interactive behaviors (Kwon et al. 2012), actually highlight an individual level; others, such as interactional synchrony (De Mendonça et al. 2011), consider the dyadic level; coparenting (see: McHale et al. 2000b) refers to a"two+one" interactive level; and finally other studies emphasize a triadic level addressing constructs such as Family Alliance as studied by Favez et al. (2013), Family Functioning as studied by Sturge-Apple et al. (2010), or Trilogue Quality studied by Von Wyl et al. (2008).

Coding Systems

An aspect of particular interest concerns the coding system through which the triadic interactions were coded and analyzed. Each study adopted specific measures; they are all defined triadic by the authors but they are triadic in different terms and generally four types of codes can be identified across the studies, according to the coding system's interactive focus: a) those that considered the whole family system and all three participants simultaneously; b) those that considered each individual's relational behaviors toward the others separately; c) those that considered the mutual behaviors of two partners with respect to a third; d) those that considered the mutual relational behaviors within the different dyads, even though in the context of the triadic interaction.

a) Some triadic codes rated the whole family system's characteristics (threesome interactive focus). As highlighted in Table 2, the more recurring categories described the family emotional atmosphere and style (9 studies). These measures were assessed on the whole family as a single unit and generally referred to dimensions addressed by classic family studies, such as cohesion, conceived as the extent to which the family worked as a unit rather than as disconnected individuals. Other categories, adopted by three studies, referred to aspects of family structure, such as alliances construction and boundary disturbances, highly investigated with in systemic family research. Finally other triadic codes that recur in two studies derived from the "Grid for Trilogue Evaluation of the Centre for Family Study" rating system (GETCEF; Fivaz-Depeursinge et al. 1997) and referred to family alliances, conceived as the family's ability to coordinate during interactions. Compared to the previous categories, which provided global ratings, the latter assessed the whole family considering each participant's role and contribution to the interaction. It's noteworthy that only one category (trilogue quality) described an interactive processual dynamic, combining each participant's individual contributions but also taking into consideration feedback circuits among the three partners.

b) Some codes identified participants' individual interactive behaviors (individual interactive behavior focus) (Table 3). The most part considered parents ' relational behaviors toward the child and child's relational behaviors toward the parents conversely. Other categories assessed one parent's behavior toward the other. It's noteworthy that Gordon and Feldman (2008) used individual codes to capture coparenting, a construct that refers to parents' mutual behaviors rather than each parent's ones: as specified, the authors assessed coparental behaviors for each parent while the other parent was interacting with the child and then composed individual measures of coparental and relational behaviors of all three participants in order to highlight interactional synchrony, by means of further statistical analysis. Finally, it's interesting that in one study (Frascarolo et al. 2003) the interactive functions of participation, organization, and focalization deriving from GETCEF (Fivaz-Depeursinge et al. 1997) were used for assessing mothers' and father's performances separately during the first two parts of the LTP procedure (in which each parent alternatively interacts with the child while the other is the third party), while they were usually adopted for providing whole-family global assessments.

c) Almost all of these studies analyzed coparenting ("two+one" interactive focus) (Table 4). As underlined by McHale and Fivaz-Depeursinge (1999), "it is important to recognize the important differences that distinguish studies of triadic coordination from studies of coparenting coordination assessed within the family triad or group" (p. 123). The first studies considered the infant contribution to a greater extent than those focusing on coparenting process do. In fact the studies on coparenting behaviors (11 studies) mainly focused on parents' mutual behavior while interactingwiththe child,and theircodingsystemgenerally derivedfromthe Coparenting and Family Rating System (CFRS; McHale et al. 2000a). These behaviors included several dimensions, in general describing parents' behavior toward each other, for instance in terms of competition, cooperation and warmth, but also parents' behavior toward the child, in terms of management of toddler behavior and child/adult centeredness; furthermore, in two studies among the above mentioned ones, coding systems considered parental behaviors assessed for the coparental team as a unit and directed toward the child. In one case the coding system described more processual and dynamic features of interactions: indeed Westerman

and Massoff's study (2001) assessed triadic coordination focusing on the parents' behavior and stressing feedback circuits between them while guiding the child during the interaction. Although the authors used the term "triadic" in defining this kind of coordination, they actually didn't consider the child's contribution. d) Four studies considered mutual relational behaviors within the different dyads (dyadic interactive focus), even though in the context of the triadic interaction (Table5). Among them, two studies focused on relational and interactive behaviors within each parent and child dyads, while the other two (Elliston et al. 2008; Feldman et al. 2006) considered also parents' mutual behaviors directed toward each other. Among this group of studies, there is only one that presented a process analysis of interactions. Indeed Feldman et al. (2006), in order to investigate parents' teaching strategies towards the child during a semi-structured task, considered all parent–child mutual behaviors, that is one's behavior and the recipient's responses within the parent–child dyads. In this study it's clear that the assessment of individual behaviors can be composed in more complex measures that code dynamic and processual aspects without losing sight of the individuals' contribution. Another aspect to consider about the coding systems is the distinction between microanalytical procedures and global measurement approaches (McHale and Fivaz-Depeursinge 1999). Among the reviewed studies only six adopted microanalytical procedures considering specific and precise interactive behaviors and assessing the mon each participant, considering specific time intervals or behaviors occurrences (De Mendonça et al. 2011; Favez et al. 2013; Frascarolo et al. 2003; Gordon and Feldman 2008; Kwon and Elicker 2012; McHale et al.2008). All these studies applied microcoding systems referring to individual behaviors or mutual behaviors in dyads rather than in the triad, except for the two studies which adopted the GETCEF rating system, that considered each participant in order to provide a global assessment of family interactive patterns (see: Favez et al. 2013; Frascarolo et al. 2003).

TIAP: Triadic Interaction Analytical Procedure

The review of the studies that focused on the analysis of triadic family interactions through observational procedures has detected a great complexity especially from the point of view of the constructs and the coding systems used. Considering the coding systems, it's important to stress the variety of measures adopted in the investigation of triadic interactions. In general, the choice of one type of measure rather than another depended on the issues the authors addressed. Some of the studies have analyzed the triadic interactions using global measures that capture some aspects of the quality of the functioning of the triad "as a whole" (Feldman and Masalha 2010; Shigeto et al. 2014). Others studies, always conducted within triadic interactive situations (mother-father-child), used categories of analysis that capture mainly the coparental interactive dimension (McHale et al. 2000b; Stroud et al.2011) and the parent–child interactive dimension (De Mendonça et al. 2011). Others have pointed out individual measures that members exhibit in the triadic situation (Cannon et al. 2008; Gordon and Feldman 2008), and finally a few studies have provided important and revolutionary methodologies that include measures capable of capturing the triadic dynamics among all members highlighting the contribution of each participant (Favez et al. 2013; Von Wyl et al. 2008). Following the suggestion of the last group of studies, we have also tried to address the challenge to analyze the triadic interactions considering the active role of all members at the same time. Specifically, we consider that the task

of the researchers in this sense is to identify coding systems that detect specific dimensions of triadic interactions: 1) the simultaneity of the participants' behaviors in the interaction; 2) the interdependence of the participants' behaviors; 3) the processuality, namely categories of analysis capable of describing the dynamics that unfold in the triadic interaction, highlighting the role of co-construction of each participant. The methodological procedure that we present below is proposed as a contribution that takes into account these significant dimensions of the triadic interactions.

TIAP: Theoretical Premises

In order to study the complex interactive processes involved in every day family life, we have elaborated the Triadic Interaction Analytical Procedure (TIAP) that serves as a guide for a micro-analysis of video recorded family interactions. TIAP is based on the following theoretical premises:

1) Drawing from the original results of the research conducted within the field of interactional linguistics, three are the notions that have inspired the elaboration of our procedure: a) the minimum unit of analysis is not a behavior or an action but a sequence of actions; b) actions within the unfolding flow of an interactive process occupy a uniquely interstitial position in that they are simultaneously context shaped (that is, they are built in response to the frameworks of intelligibility and action created by the immediately prior action) and context renewing in that each action provides the contextual point of departure for the action(s) that will follow (Schegloff 2007); c) actions can be properly understood only when the whole proceeding interaction or the comprehensive activity is taken into account (Norén and Linell 2007). In other words, the action of one family member has implications on the whole interactive process for what actions are done as a response to it. These ideas have been particularly fruitful in developing the notion of potential for change, which in fact refers to those behaviors enacted during an interactional situation that could bring about a change in the whole interaction, but that we know whether it does or not only after we have observed the response to it. This notion is interesting because it allows overcoming the idea of "error and reparation of the error" with respect to those behaviors that do not fit a given interactive form. In the above described interactional perspective, there are no errors in interactions, there are just behaviors whose function can be seen only after the observation of the response to it. In fact a behavior that potentially brings about a change in the form of the ongoing interaction could be the beginning of a change process or the perturbation activating a process of reconstruction of the previous form. Whether it will be a change process or a reconstruction of the perturbed stability is not by any means information contained in the behavior triggering the process, but in the responses that will follow. A behavior that perturbs a given interactive form can be ignored or can be acknowledged, but not followed through, or it can be amplified thus bringing about a transition to a new interactive form. In the methodological paragraph we will classify these constructs into analytical categories (see Fig. 1). 2) As brilliantly showed by the group of Lausanne (Fivaz-Depeursinge and CorbozWarnery 1999), during the "unfolding flow of the interactive processes" characterizing family life, members can interact in four different triadic interactive forms: twomembers(i.e.,:fatherandchild)entertaineachotherwhileathirdone(mother) is observing their interaction from a peripheral position; other two members (i.e.,: mother and child) entertain each other while

a third one (father) is in the peripheral position; other two members (i.e.,: father and mother) entertain each other while a third one (child) is peripheral; finally they can all interact2. Consequently, during the "unfolding flow of the interactive processes" characterizing family life, family members are involved in several different moments of transition from one form to the other. We distinguish microtransition from configuration in any interactional process. Configuration refers to how family members coordinate while they are involved in a specific interactive situation (for example, how they interact while playing together, or while father and child are involved in some activity while mother is present but is not directly participating, and so on). Microtransition, on the other hand, refers to how family members coordinate in order to change from one particular configuration to a new one (for example, when mother comes home from work: her entrance elicits a change in the ongoing father-child dyadic interaction that needs to be dstructured in order to open as pace for the mother, who on her part has the opportunity to enter into a new interactional space in which all the family members are involved). With few exceptions (Frascarolo et al. 2005), the research on parents-child relationships and processes has neglected the microtransitional moments characterizing families' everyday life, focusing instead on how family members coordinate while they are engaged in a specific interactional configuration. We claim that in order to understand family functioning the information provided by studying how people interact and maintain a given form of interaction, have to be completed with the information provided by studying how family members coordinate when moving from one type of configuration to another (i.e., microtransitions). 3) From a relational point of view, the transitions from one configuration to another occurring in family everyday life can be considered as microseparations that anticipate new relational involvements. Considered in a triadic context, it is evident that the "separation–rejoining" dynamics can no longer be described as a fragmented process (the mother leaves the child, the child is alone, the mother returns, and the child welcomes her) but as a continuous process involving all members of the interaction, all the time. In fact, in a triadic context, "separating" and "being together" can be connected by the processes of "entrusting" and "welcoming" (the mother, when beginning to leave the child, entrusts him or her to the father – or to someone else – who welcomes the child, thus starting a new interaction together). In this sense, a microtransition implies that participants coordinate to create a relational dynamic, which is conveyed through four complementary and interconnected processes: detaching – entrusting – welcoming – joining (Cigala et al. 2013, 2014). Even if inevitably described in sequential terms, the dynamic involved in a microtransition is circular and the processes that comprise it are interconnected. Based on the above illustrated premises, we identified the task, operationalized the units of analysis, chose the method of transcribing the video material, and elaborated the coding system of TIAP.

TIAP: Task

In order to study the "unfolding flow of the interactive processes" of family life, the task used should reproduce an ecological setting, which allows observing the family triads while they are jointly reproducing, in a short time, different interactive situations that usually take place in everyday life. For this reason, we chose an ecological task that engages the family triads in the four possible configurations and the connected transitions described above, furthermore allowing to capture processual aspects of family in movement. In particular, in

our procedure, the participants, in a laboratory setting, are given the following instructions: “We are asking you to play together for approximately 10min, in four different combinations: first a parent plays with the child whilst the other parent watches; next the other parent plays with the child and this time the parent previously involved watches; next all of you play together; and finally parents may talk with each other whilst the child plays alone.” Through the assigned task, taken from the Lausanne Trilogue Play procedure (Fivaz Depeursinge and Corboz-Warney 1999), the family triads are asked to act in four different configurations and thus to deconstruct and co-construct their interactional configuration three times, accomplishing three transitions: from a configuration in which a parent (e.g., the mother) plays with the child and the father watches [(MC)F], to another in which the father plays with the child and the mother is in a peripheral role [(F-C)M], to one in which they all play together [(M-C-F)], and finally to the configuration in which the parents interact whilst the child is in the peripheral position [(F-M)C]. It should be noted that the only coincidence of our procedure with the LTP procedure is the assigned task. As shown in the following paragraphs, the constructs, the categories, the focus of the analysis of TIAP were originally elaborated by the authors (Cigala et al. 2013, 2014). The family triads are invited to settle in around a table with three chairs placed at the center of the observation room. Families are also provided potentially interesting toys for children aged 4–5 years, such as modeling paste, a doll, and toy cars. The triads’ interactions are recorded by three video cameras that allow detailed filming from three different perspectives simultaneously, so as to be able to count for a detailed view of the child, of the parents, and of the overall situation.

TIAP: Identification of the Units of Analysis

In order to identify the units of analysis, we distinguished the following different moments of “The unfolding flow of an interactive process”: configurations, microtransitions, andpotentially transformative interactive spaces. We define configuration as the interactive space in which individuals act jointly maintaining the same interactive positions: active or peripheral (i.e., mother and son are both involved in dealing with the son’s homework and father listens to their exchanges while preparing dinner nearby). Microtransition refers to the interactive space that emerges as members move from one configuration to a new one (i.e.,son turns to father who is nearby preparing dinner asking him a question, father answers engaging directly with son while mother takes a position of observer of their interaction). The change occurring in a microtransition corresponds to a variance of the interactional position (active/peripheral) that the individuals have in the interactive space. Finally, during a configuration several potentially transformative interactive spaces can be observed. They emerge when one of the members actively or peripherally involved in the interaction makes a verbal, a corporal or an expressive movement, which, by bringing a variation in his/her position, could bring about a change in the whole ongoing configuration. We called such movements potentials for change, because, as illustrated in the introduction of the present paragraph, the chances that they could actually trigger a variation in the configuration depend on the responses of the other partners in the interactive space. In our model, we considered three possible responses to the potentials for change, and three connected consequences: 1) we can observe a response of Disregard when the potential for change falls in the void, it is not seen or it is voluntarily ignored; consequently, the ongoing configuration does not vary (child and father are playing while mother who

is reading a book nearby looks at them and comments “looks like you are having fun”; child and father continue playing without paying any attention to her); 2) Absorption, one partner acknowledges the potentialfor changeyetmaintaininghis/herpositionintheongoingconfiguration(child looks at the mother and nods, smiles and continues his activity with father); 3) Amplification, the potential for change is noticed, fed back and amplified by a change in the behavior of everyone involved. In this case the potential for change becomes the first action of deconstruction of the ongoing configuration, thus the beginning of a microtransition (father and child look at mother and invite her to join them, she stands up and reaches them at the table). According to the type of response given, the potential for change does not vary the configuration, it can lead back to the re-establishment of the previous configuration (reconstruction of stability), or it can trigger a microtransition that leads to a new configuration (construction of change). Given these definitions the units of analysis are identified according to the following criterium: a configuration starts when the members of a triad begin to play according to the given instructions. In order to distinguish when a configuration ends and a microtransition starts, it is necessary to identify the potentially transformative interactive space by pointing out the potential for change and the responses to it (Disregard, Absorption, Amplification). Of the three possible responses considered, only Amplification transforms the potential for change in the first action of deconstruction of the ongoing configuration. Consequently, a microtransition starts with a potential for change amplified by partners, and ends when all participants reach a stable role in a new interactive configuration. Configurations, potentials for change, responses, and microtransitions are identified according to the above criteria by two independent judges.

TIAP: Transcription of the Videotaped Material

The analysis is carried out on the transcriptions of the video material. This choice was made because the transcript of the video data allows for an “in-depth” analysis by means of which specific and redundant family interactional patterns can be identified (Kreppner 2001, 2002; Margolin et al. 1998). Transcriptions are conducted in such a way as to show the triadic nature of the interaction, placing the emphasis on the simultaneity, complementarity and circularity of the actions performed by all the members through different channels (verbal, corporal, expressive). In particular, the verbal communication of all participants is transcribed; the transcribed corporal indices are bust’s orientation, movements of participants in the setting and movements with respect of the toys used; the expressive indices are direction of the glances, emotional expressions (general configuration of face and other macroscopic indices) of discrete emotions such as: happiness, sadness, anger, etc. We report below an example of triadic transcription.

The child says: “Now is Dad’s turn”, Mom repeats “Now is Dad’s turn ” and then addressing the child asks, “Can I put him (the doll) to bed?” The child says “No”, and Mom says, “OK, so I let him here, ciao!” During this exchange between Mother and child, Dad maintains a peripheral position, following with his eyes mother-child interaction. Mother withdraw her body and her chair from the table, while father moves his chest closer to the table, while the child says to mother “Let’s do it in this way: dad comes here next to me”. Dad gets up and goes toward the place indicated while saying “Good idea”. At the same time mother gets up from her chair

and, while saying “yes” swaps her seat with Dad. While sitting, Dad proposes to change game pointing at some small cars, the child follows him with her glance, while mother sits with her legs directed at father’s chair, keeping her look on the child. Father and child start playing together.

In order to attain more specifically appropriate results, the transcriptions of the video data are carried out by two non-independent observers simultaneously. The correspondence between the video data and the transcripts is subsequently assessed by two other groups of mutually independent judges, as required by the post-production techniques (Kreppner 2001, 2002).

TIAP: Coding System

Coding the Outcome of the Potentials for Change

The responses to the potentials for change are categorized as described above (Disregard, Absorption, Amplification). The correspondent outcomes are named as following: invariance of the ongoing configuration is the outcome of disregarding and denying the potential for change (i.e.,: “while father and child play, mother who is in a peripheral position, takes a toy and puts it next to the child; father and child continue to play together without changing their body posture or direction of their glance”); reconstruction of previous configuration, in which the maintenance of the ongoing configuration is the outcome of a process of coping with the potential for change by absorbing it (i.e.,: “while mother and child play, father from the nearby couch asks a question to the child, who answers but going back to play with mother who meanwhile does not turn the direction of her glance from the activity she is involved in”); microtransition that is a process of deconstruction of the ongoing configuration and construction of a new one (i.e.,: “while playing all together, mother looks at the father and says to the child ‘Now daddy and I will go to sit on the couch, so you can play alone’, the child nods, father and mother stand up and go toward the couch”).

Coding Interactions During the Microtransitions

The interactions of the triads during microtransitions are analyzed according to the ability of the triad’s members to coordinate their actions in order to achieve a common goal (triadic coordination), and according to the process through which each member of the triad showed emotions and shared them with the others (emotional tuning). Coordination and emotional tuning are not new variables in the analysis of family relationships and dynamics. The novelty is that in the present procedure they are operationalized according to a micro-analytical perspective. Triadic Coordination is assessed through the following indices: 1) Attention, 2) Responsiveness, 3) Re-proposition and explanation of the signals by all members, and 4) Contingency between responses. Triadic coordination is assessed in each microtransition through a four-point Likert-type scale (present-very good/present-good/discontinuous/absence). Each level of the scale is created through the combination of the following indices: (1) Attention to signals coming from other members, (2) Responsiveness, (3) Rephrasing or rewording of the signals, and (4) Contingency between responses (Table 6). Emotionaltuningisassessedineachmicrotransitionthroughafour-pointLikerttype scale (very good/good/poor/insufficient). Each level of the scale is created through the combination of the following

indices: (1) the types of emotions expressed by the triad (positive, negative, neutral); (2) the coherence of the channels through which they were expressed (coherence/incoherence); and (3) the sharing of the emotions by the members (present/absent) (Table 7). Furthermore, the relational triadic dynamic of detaching-entrusting-welcoming-joining implied in the deconstruction of a configuration and co-construction of a new one is analyzed for each microtransition, according to the operationalization of the processes reported in Table 8

For each microtransition we analyze each process in terms of occurrence/not occurrence and consistency/inconsistency of the communication channels used (verbal, corporal, expressive). The coding of the above variables should be made by two independent observers.

Coding Interactions in the Potentially Transformative Interactive Space

The interactions of the triads in the potentially transformative interactive space is analyzed according to Emotional tuning as operationalized above, and Interactive availability of the system, that is the way through which each member pays attention to the potentials for change and how the attention is expressed during the reconstruction of stability. Each level of the scale is created through the combination of the following indices: (1) Attention to signals coming from other members; (2) Responsiveness. The Interactive availability is evaluated for each potential for change on a 3 point Likert scale (Table 9).

Conclusion

The proposed procedure fits into the line of studies that detect simultaneously the role of each participant of the interaction while focusing on the interdependence and the processual nature of behaviors. In this way the functioning of family triads is caught at the level of systemic complexity without losing the participants' role. Then, we could say that this methodology allows "the analysis of the whole without losing the parts". An example of this is the variable of coordination, a triadic dimension that takes into account the active role of mother, father and child evaluated at the interactive level (mutual attention and responsiveness). What is the reason for elaborating and presenting another procedure for the analysis of family functioning based on the observation of triadic interactions? The intent of our proposal is not to substitute any other well-established procedure. As each of the procedures and methodologies taken into account in our review of the literature, we think that our procedure adds some lenses to the analysis of family relations and processes. A specific aspect of the Triadic Interaction Analytical Procedure is that it allows analyzing the family triads from different points of view. In fact, the coding system includes variables of different types that analyzed different important dimensions of family interactions: some analyze the interactive modes of the family (coordinationand potentials for change), other variables describe the emotional exchanges (emotional tuning), and other variables describe the contents and the meanings of the interactions (the relational triadic dynamic of microtransition and the consistency/inconsistency of the communication channels). Moreover, the proposed procedure allows a process analysis of the interaction considering different interactive processes: 1) modes of mother, father and child to interact together in a situation of "stability" (analysis of the configurations); 2) the processes of change in the sense of deconstruction of the previous interactive modes and construction of new

interactive spaces (analysis of the microtransitions); 3) the processes of reconstruction of stability in the sense of deconstruction and reconstruction of the previous interactive mode (analysis of the potentials for change). This last aspect allows capturing situations of tension, contradiction, and ambivalence during the interaction, stressing their not necessarily negative role, but their important function for family development when the families don't deny them. Indeed the proposed procedure also considers how families deal with these tensions and contradictions: this is made possible by the identification of some variables, such as the types of responses to the potentials for change (disregard, absorption, amplification), capable of discriminating between different interactive family modes to reconstruct the previous configuration or to construct a new one. In this regard, the indices proposed exceed the classical bipolar distinction between rigid families and flexible families, identifying different interactive modes to change and different interactive ways to reconstruct the stability, without giving a preconceived positive value neither to stability nor to change. With reference to the procedure's limitations, the most important one is the restricted conception of context we refer to: indeed our procedure has been developed in a Western context, with middle-class Caucasian families. Hence the cultural dimension has not been considered, as the families we observed shared the same cultural environment. This has not allowed assessing the role of the broader cultural environment in shaping families' modes of interacting. This issue could be addressed through crosscultural studies. A further limitation concerns complexity of application of observational methods in general, which our procedure is a part of: observational methods entail a great time consuming in their development and application, as they require long-lasting and complex data processing (Fruggeri 2009). However, we claim that the quantity, variety, and complexity of data that could be gathered through these procedures are worth the effort they require. With regard to this procedure's applications, it can be employed both with typical and clinical families and enables to delineate different family modes of functioning and of managing the interactive change. Furthermore, it can be employed also in longitudinal studies in order to stress how families modify their interactive dynamics over time. In addition, in the targeted studies this procedure may be combined with specific instruments to assess the level of children's development with respect to certain socioemotional competences in school context (Cigala et al. 2013). These studies allow highlighting the relationships between the family functioning and the children's socioemotional adjustment or maladjustment with peers and adults: in particular, results indicate that children in families showing a higher degree of coordination are more relationally and socially competent with peers (Cigala et al. 2014).

[1] omecontributionspublishedinthepreviousyearshavenotbeentakenintoconsiderationinthereviewpart, as they were mostly published within books and only research articles have been included in this review. Despite we didn't include the books published in the period before the one we considered, the important methodological procedures there contained have been so influential to be adopted in the empirical investigations published in the following period, and thus here contemplated and analyzed.

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TABLES AND FIGURES

Table 1 Studies of triadic family interactions

Study	Sample Characteristics	Sample Size (Families)	Children's Age (Months)	Observational Setting	Task	Constructs	Coding System's Categories	Coding System's Interactive Focus
Blandon et al. 2014	American families	58	42	Laboratory	Structured and unstructured	Coparenting	Coparenting cooperation; coparenting competition; child-centered behavior	"Two+one" (mother-father) + (child)
Brown et al. 2009	American families	50	36	Home	Structured	Triadic interactions	Family harmony; family discord	Threesome (mother-father-child)
Cannon et al. 2008	American families	97	3.5	Home	Structured and unstructured	Maternal gatekeeping; fathering behavior	Maternal negative control; maternal facilitation; paternal competence; father involvement	Individual Interactive Behavior (mother; father)
De Mendonça et al. 2011	French-Canadian families	42	32	Laboratory	Unstructured	Interactional synchrony	Physical distance; visual orientation; body orientation; dyadic involvement	Dyadic (each parent-child)
[a] Dochan et al. 2009	American families	108	84-108	Laboratory	Structured	Family warmth	Family warmth	Threesome (mother-father-child)
Ellison et al. 2008	American families	115	3	Home	Structured	Parental disengagement	Disengagement; overall warmth	"Two+one" (coparental unit) + (child) Dyadic (mother-father; each parent-child)
Favez et al. 2013	Swiss French-speaking families	42	3; 18	Laboratory	Structured	Family alliances	Participation; organization; focalization	Threesome (mother-father-child)
Feldman and Masalha 2010	1. Israeli families 2. Palestinian families	1. 86 2. 55	5; 33	Home	Unstructured	Triadic interactive behaviors	Family cohesion; family rigidity	Threesome (mother-father-child)
Feldman et al. 2006	1. Israeli families 2. Palestinian families	1. 86 2. 50	5; 33	Home	Unstructured and semi-structured	Early family relational patterns	Gaze; affect; proximity; touch; parents' teaching strategies (process analysis)	Dyadic (mother-father; each parent-child)

Table 1 (continued)

Study	Sample Characteristics	Sample Size (Families)	Children's Age (Months)	Observational Setting	Task	Constructs	Coding System's Categories	Coding System's Interactive Focus
Feldman et al. 2001	1. Israeli families 2. Palestinian families	1. 100 2. 62	5	Home	Unstructured	Family role	Family cohesiveness	Threesome (mother-father-child)
Frascarolo et al. 2003	Swiss French-speaking families	42	3	Laboratory	Structured	Parents' performances	Participation; organization; focalization	Individual Interactive Behavior (mother; father)
Gordon and Feldman 2008	Israeli families	94	5	Home	Unstructured	Interactional synchrony	Relational behaviors (gaze, affect, etc.); coparental behaviors (mutual, competitive, passive-neutral)	Individual Interactive Behavior (mother; father; child)
Jacobvitz et al. 2004	American families	96	24	Home	Structured	Boundary disturbances and triadic family interaction patterns	Enmeshed scale; controlling scale; emotional disengagement scale; hostile scale; balanced scale	Threesome (mother-father-child)
Keren et al. 2005	Israeli families	35	36	Home	Unstructured	Coplaying	Cooperative family style; intrusive family style	Threesome (mother-father-child)
[a] Kitzmann 2000	American families	40	72-96	Laboratory	Structured	Disruptions in family alliances	Family cohesion; balanced versus unbalanced alliances	Threesome (mother-father-child)
Kwon and Elicker 2012	American families	68	16-37	Laboratory	Structured and unstructured	Parental control; child compliance; coparenting	Parental gentle guidance; parental directiveness; child committed compliance; positive/negative coparenting behaviors; parents balanced engagement	Individual Interactive Behavior (mother; father; child) "Two+one" (mother-father) + (child)
Kwon et al. 2012	American families	67	16-36	Laboratory	Structured and unstructured	Parenting quality; children's interactive	Positive/negative parenting; child	Individual Interactive Behavior (mother;

Table 1 (continued)

Study	Sample Characteristics	Sample Size (Families)	Children's Age (Months)	Observational Setting	Task	Constructs	Coding System's Categories	Coding System's Interactive Focus
						behavior toward parents	engagement of parent; child negativity toward parent; parent-child mutual engagement	father; child) Dyadic (each parent-child)
Lindsey and Caldera 2006	American families	60	11-15	Home	Unstructured	Gender-typed patterns of interaction	Supportive/intrusive behaviors toward the spouse; parental involvement, sensitivity, positive/negative affect toward the child; cooperative/ competitive coparenting	Individual Interactive Behavior (mother; father) "Two+one" (mother-father) + (child)
[a] McHale et al. 2008	American families	113	3	Home	Structured	Family alliances	Participation; organization; focalization	Threesome (mother-father-child)
McHale et al. 2000b	American families	52	30	Laboratory	Structured and unstructured	Coparenting behavior	Coparental antagonism; warmth and cooperation; balance of positive parental engagement; management of toddler behavior; child *vs* adult centeredness	"Two+one" (mother-father) + (child)
[a] Schoppe et al. 2001	American families	57	37.23	Home	Structured	Family affective processes; family structure	Positive/negative affect; cohesiveness; alliance formation	Threesome (mother-father-child)
Shigeto et al. 2014	American families	59	12.53	Laboratory	Structured		Family cohesiveness	

Table 1 (continued)

Study	Sample Characteristics	Sample Size (Families)	Children's Age (Months)	Observational Setting	Task	Constructs	Coding System's Categories	Coding System's Interactive Focus
						Family functioning (cohesiveness)		Threesome (mother-father-child)
Stroud et al. 2011	American families	148	36-78	Laboratory	Structured	Coparenting	Parents' shared enjoyment; warmth/positive affect; hostility/ negative affect; disagreement	"Two+one" (mother-father) + (child)
[a] Sturge-Apple et al. 2010	American families	234	72	Laboratory	Structured	Family functioning (harmony, disengagement, enmeshment)	Family cohesiveness	Threesome (mother-father-child)
Von Wyl et al. 2008	Swiss German-speaking families	44	4	Laboratory	Structured	Triadic family interactions (trilogue quality)	Trilogue quality	Threesome (mother-father-child)
Westerman and Massoff 2001	American families	16	60-144	Laboratory	Structured	Triadic coordination	Parents' participation and uninvolvement; agreement/support and disagreement/ opposition one towards the other; try to involve; elaborated agreements; constructive disagreements	"Two+one" (mother-father) + (child)

[a] For a more proficient synthesis, only the triadic constructs, categories, and interactive focus are reported for this study, although it included also dyadic or individual constructs and categories

Table 2 Studies with threesome interactive focus

References of the studies	Coding system's categories	Threesome interactive focus
Brown et al. 2009	Family harmony; family discord	Mother-father-child triad
Doohan et al. 2009	Family warmth	Mother-father-child triad
Favez et al. 2013	Participation; organization; focalization	Mother-father-child triad
Feldman and Masalha 2010	Family cohesion; family rigidity	Mother-father-child triad
Feldman et al. 2001	Family cohesiveness	Mother-father-child triad
Jacobvitz et al. 2004	Enmeshed scale; controlling scale; emotional disengagement scale; hostile scale; balanced scale	Mother-father-child triad
Keren et al. 2005	Cooperative family style; intrusive family style	Mother-father-child triad
Kitzmann 2000	Family cohesion; balanced versus unbalanced alliances	Mother-father-child triad
McHale et al. 2008	Participation; organization; focalization	Mother-father-child triad
Schoppe et al. 2001	Positive/negative affect; cohesiveness; alliance formation	Mother-father-child triad
Shigeto et al. 2014	Family cohesiveness	Mother-father-child triad
Sturge-Apple et al. 2010	Family cohesiveness	Mother-father-child triad
Von Wyl et al. 2008	Trilogue quality	Mother-father-child triad

Table 3 Studies with individual interactive behavior focus

References of the studies	Coding system's categories	Individual interactive behavior
Cannon et al. 2008	Maternal negative control; maternal facilitation; paternal competence; father involvement	Mother; father
Frascarolo et al. 2008	Participation; organization; focalization	Mother; father
Gordon and Feldman 2008	Relational behaviors (gaze, affect, etc.); coparental behaviors (mutual, competitive, passive-neutral)	Mother; father; child
Kitzmann 2000	Parental rejection/coercion, support/engagement	Mother; father
Kwon and Elicker 2012	Parental gentle guidance; parental directiveness; child committed compliance	Mother; father; child
Kwon et al. 2012	Positive/negative parenting; child engagement of parent; child negativity toward parent	Mother; father; child
Lindsey and Caldera 2006	Supportive/intrusive behaviors toward the spouse; parental involvement, sensitivity, positive/negative affect toward the child	Mother; father
McHale et al. 2008	Child multishift gaze patterns	Child

Table 4 Studies with "two+one" interactive focus

References of the studies	Coding System's Categories	"Two+one" Interactive Focus
Blandon et al. 2014	Coparenting cooperation; coparenting competition; child-centered behavior	(Mother-father)+(child)
Doohan et al. 2009	Structure; parental cohesion	(Coparental unit)+(child)
Elliston et al. 2008	Disengagement	(Coparental unit)+(child)
Kitzmann 2000	Family negativity/tension; family positivity/warmth; democratic style; autocratic style; lax style; inconsistent style	(Mother-father)+(child)
Kwon and Elicker 2012	Positive/negative coparenting behaviors; parents balanced engagement	(Mother-father)+(child)
Lindsey and Caldera 2006	Cooperative/competitive coparenting	(Mother-father)+(child)
McHale et al. 2008	Coparental cohesion; coparental conflict	(Mother-father)+(child)
McHale et al. 2000b	Coparental antagonism; warmth and cooperation; balance of positive parental engagement; management of toddler behavior; child *vs* adult centeredness	(Mother-father)+(child)
Schoppe et al. 2001	Supportive coparenting; undermining coparenting	(Mother-father)+(child)
Stroud et al. 2011	Parents' shared enjoyment; warmth/positive affect; hostility/negative affect; disagreement	(Mother-father)+(child)
Sturge-Apple et al. 2010	Coparental competition; coparental cooperation	(Mother-father)+(child)
Westerman and Massoff 2001	Parents' participation/uninvolvement; agreement/support and disagreement/opposition one towards the other; try to involve; elaborated agreements; constructive disagreements	(Mother-father)+(child)

Table 5 Studies with dyadic interactive focus

References of the studies	Coding system's categories	Dyadic interactive focus
De Mendonça et al. 2011	Physical distance; visual orientation; body orientation; dyadic involvement	Each parent–child
Elliston et al. 2008	Overall warmth	Mother-father; each parent–child
Feldman et al. 2006	Gaze; affect; proximity; touch; parents' teaching strategies (process analysis)	Mother-father; each parent–child
Kwon et al. 2012	Parent–child mutual engagement	Each parent–child

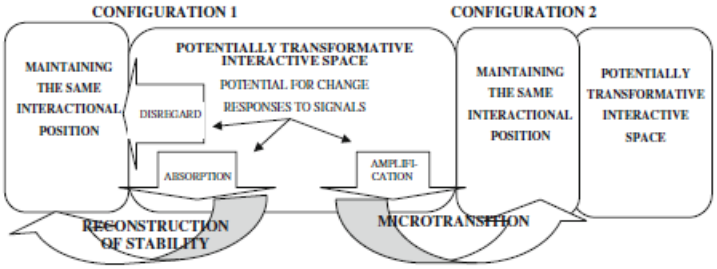

Fig. 1 The unfolding flow of an interactive process

Table 6 Levels of *triadic coordination*

Triadic Coordination			
Present		Discontinuous	Absence
Very good	Good		
attention and responsiveness by all members	attention and responsiveness are completely present by two members or nearly completely by all three	attention and responsiveness are present sometimes and involve two members at time	absence of attention and responsiveness
re-proposition by the system	re-re-proposition by system is present when attention and responsiveness involve all members	re-proposition by the system is absent	re-proposition by the system is absence
contingency between responses is complementary	contingency between responses is consecutive – fluid: some members start the process and the others follow it almost immediately	contingency between responses is consecutive – difficult: the actions of the members take place in different times	contingency between responses: rare – absent

Table 7 Levels of *emotional tuning*

Emotional Tuning			
Very good	Good	Poor	Insufficient
- presence of positive emotions, coherence of the channels sharing of emotions by all members	- mainly neutral emotions, coherence of the channels, emotions not always shared by all members.	- neutral emotions or few negative emotions coherence of the channels, emotions not shared by all members and inconsistently	- almost complete absence of positive emotions, presence of negative emotions, incoherence of the channels, lack of emotional sharing.

Table 8 The relational triadic dynamic of microtransition

Processes	Definition
Detachment	Verbal, corporal and expressive movements that allow one or more members to separate from the ongoing interaction and relate to other members or choose the role of the observer.
Entrusting	Verbal, corporal and expressive movements through which the active adult prepares the child for a new interactional involvement: the child can be left in one parent's care (entrusted to one parent); in both parents' care (jointly entrusted); or left to play alone (self-entrusted).
Welcoming	Verbal, corporal, expressive movements through which a partner shows a willingness to become involved in the interaction
Joining	Verbal, corporal, expressive movements through which the partners propose or consolidate a new interactive configuration.

Table 9 Levels of the interactive availability

Complete	Part	Absence
Attention and responsiveness by the whole system (response of absorption)	Attention and responsiveness by the system are sometimes present, or are observable in a single member or not completely in two (response of absorption and ignore)	Absence of attention and responsiveness by the system (response of ignore)