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## FROM ME TO US: THE CONSTRUCTION OF FAMILY ALLIANCE

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SARAH GALDIOLO AND ISABELLE ROSKAM

*Université Catholique de Louvain*

**ABSTRACT:** This longitudinal prospective and multi-informant study based on a three-wave research program (pregnancy, 12 months' postpartum, and 16 months' postpartum) aimed to determine the process of construction of family alliance, as assessed by the Lausanne Trilogue Play (Fivaz-Depeursinge & Corboz-Warnery, 1999). A model using parents' individual characteristics (i.e., personality traits and attachment orientations) as distal variables, coparenting as a mediator, child's temperament as a moderator, and family alliance as outcome was tested using structural equation modeling on 62 nonreferred families. Results showed that both parents' conscientiousness was positively and mothers' avoidant attachment and fathers' anxious attachment were negatively and indirectly (via coparenting) associated with the family alliance. The discussion underlines mothers' and fathers' different roles and the importance of coparenting as a core mechanism in the development of family alliance.

**Keywords:** family alliance, personality traits, attachment orientations, coparenting, child's temperament

**RESUMEN:** Este estudio longitudinal prospectivo y de informantes múltiples, basado en un programa de investigación de tres fases (embarazo, 12 meses después del parto, y 16 meses después del parto) tuvo como objetivo determinar el proceso de construcción de alianza familiar tal como se le evalúa por medio del Juego Tripartito de Lausanne. Un modelo que utiliza las características individuales de los progenitores (v.g. características de personalidad y orientaciones de afectividad) como variables periféricas, la co-crianza como punto mediador, el temperamento del niño como punto moderador, y la alianza familiar como resultado fue probado usando una ecuación estructural modelada en base a 62 familias que no habían sido referidas. Los resultados muestran que la escrupulosidad de ambos progenitores se asoció positivamente con la alianza familiar; y tanto la afectividad esquiva de las madres como la afectividad ansiosa de los papás fueron negativa e indirectamente asociadas (vía la co-crianza) con la alianza familiar. La discusión subraya los diferentes papeles de mamás y papás y la importancia de co-criar como un mecanismo central en el desarrollo de la alianza familiar.

**Palabras claves:** alianza familiar, características de la personalidad, orientaciones de afectividad, co-crianza, temperamento del niño

**RÉSUMÉ:** Cette étude prospective longitudinale et multi-informante basée sur un programme de recherche en trois vagues (grossesse, 12 mois après la naissance, et 16 mois après la naissance) s'est donné pour but de déterminer le processus de construction de l'alliance familiale, tel qu'il est évalué par le Jeu du Trilogue de Lausanne. Un modèle utilisant les caractéristiques individuelles des parents (c'est-à-dire les traits de personnalité et les orientations de l'attachement) en tant que variables distales, le coparentage comme médiateur, le tempérament de l'enfant en tant que modérateur, ainsi que l'alliance familiale comme résultat a été testé en utilisant des modèles à équation structurelle sur 62 familles n'étant pas en consultation. Les résultats démontrent que la conscience des deux parents était liée positivement à l'alliance familiale, l'attachement évitant des mères et l'attachement anxieux des pères étaient liés négativement à l'alliance familiale au travers du coparentage. La discussion souligne les différents rôles des mères et des pères et l'importance du coparentage en tant que mécanisme fondamental dans le développement de l'alliance familiale.

**Mots clés:** alliance familiale, traits de personnalité, orientations de l'attachement, coparentage, tempérament de l'enfant

**ZUSAMMENFASSUNG:** Diese longitudinale, prospektive Multi-Informanten-Studie basiert auf einem Forschungsprogramm mit drei Messzeitpunkten (Schwangerschaft, 12 Monate und 16 Monate nach der Geburt) und zielte darauf ab, mit dem "Lausanner Spiel zu dritt" den Entwicklungsprozess einer Familienallianz zu erklären. Ein Modell mit den individuellen Eigenschaften der Eltern (d.h., Persönlichkeitsmerkmalen und Bindungsorientierungen) als distale Variablen, mit Co-Elternschaft als Mediator, dem Temperament des Kindes als Moderator und der Familienallianz als Ergebnisvariable wurde unter Verwendung von Strukturgleichungsmodellen getestet (N = 62 Familien). Die Ergebnisse zeigten, dass elterliche Gewissenhaftigkeit positiv und eine mütterliche vermeidende Bindung sowie eine väterliche ängstliche Bindung negativ und indirekt (über Co-Elternschaft) mit der

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Sarah Galdiole and Isabelle Roskam, Institute of Research in Psychological Science, Université Catholique de Louvain, Louvain-la-Neuve. This research was sponsored in part by Domini Baby, Dream Baby, Nestlé, Newvalmar, Petites Bulles, The Little Gym, and Weleda.

Direct correspondence to: Sarah Galdiole, Institute of Research in Psychological Science, Université Catholique de Louvain, 10 Place Cardinal Mercier, Louvain-la-Neuve, Belgium; e-mail: sarah.galdiole@uclouvain.be.

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Familienallianz assoziiert sind. Die Diskussion unterstreicht die verschiedenen Rollen der Mütter und Väter und die Bedeutung der Co-Elternschaft als Kernmechanismus in der Entwicklung einer Familienallianz.

**Keywords:** Familienallianz, Persönlichkeitsmerkmale, Bindungsorientierungen, Co-Elternschaft, kindliches Temperament

抄録: この縦断的、前向きの、多重の情報提供を得る研究は、3波の研究プログラム(妊娠中、生後12ヶ月、および生後16ヶ月)に基づいて、ローザンヌ三者プレイLausanne Trilogue Playによって評価される家族同盟の構築過程を決定することを目的とした。親の個々の性質(すなわち、パーソナリティ傾向と愛着の方向性)を遠位変数distal variableとして、共同養育coparentingを媒介因子として、子どもの気質を調節因子として、そして家族同盟を結果として用いたモデルが、62組の医療機関からの紹介ではない家族について、構造方程式モデルを用いてテストされた。結果から、両方の親の誠実性はポジティブに、そして母親の回避性愛着と父親の不安性愛着はネガティブかつ間接的に(共同養育を介して)家族同盟と関連していた。考察は、母親と父親の異なる役割と、家族同盟の発展の中核的なメカニズムとしての共同養育の重要性を強調する。

**キーワード:** 家族同盟, パーソナリティ傾向, 愛着の方向性, 共同養育coparenting, 子どもの気質

摘要: 這個縱貫前瞻性、多線人的研究基於一個三波計劃(懷孕期、產後12個月、和產後16個月),其目的是確定建設家庭聯盟的過程,並以Lausanne Trilogue Play去評定結果。研究採用結構方程模型,對62個非臨床個案家庭進行測試一個以父母的個人特徵(即人格特質與依附取方向)為遠端變數,共分親職為中介變數,孩子的氣質作為一個調節變數,並以家庭聯盟作為結果的模型。結果表明,父母雙方的責任心和家庭聯盟有正面關係,母親逃避型依附和父親的焦慮型依附與家庭聯盟有負面和間接(通過共分親職)關係。討論強調母親和父親的不同角色,和共分親職作為家庭聯盟發展的核心機制之重要性。

**關鍵詞:** 家庭聯盟, 個性特徵, 附件取向, 共分親職, 孩子的性情

**ملخص:** هذه الدراسة المطولة متعددة المصادر تعتمد على برنامج بحثي ثلاثي يشتمل على (الحمل – 12 شهر بعد الولادة – 16 شهر بعد الولادة) وتهدف إلى تحديد عملية تكوين التحالف الأسري وفقاً لمقياس لوزان للعب ترايولوج. النموذج يشمل متغيرات السمات الفردية (مثل المزايا الشخصية وتوجهات التعلق) ومزاج الطفل كمتغير وسيط والتحالف الأسري كمتغير ناتج. تم إدخال هذه المتغيرات من 62 أسرة باستخدام تحليل نمذجة المعادلة الهيكلية. أظهرت النتائج أن اجتهاد الوالدين يرتبط إيجابياً بالتحالف الأسري بينما التعلق الإنطوائي لدى الأم والتعلق القلق لدى الأب يرتبطا سلبياً وبشكل غير مباشر بالتحالف الأسري. وتناقش النتائج أدوار الأب والأم المختلفة وأهمية الأبوة المشتركة كإلية محورية في تنمية التحالف الأسري.

**كلمات مفتاحية:** التحالف الأسري – المزايا الشخصية – توجهات التعلق – الأبوة المشتركة – مزاج الطفل

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In infancy, important differences exist between triadic mother–father–infant interactions and parent–infant relatedness (McHale & Cowan, 1996). Even when the interaction is primarily dyadic (e.g., the mother feeding the baby), the presence of the other parent (in this case, the father) influences the behavior of each member of the dyad and the quality of the emotional exchanges (Labrell, 1996). Such observations have emphasized the need for a fuller exploration of family-level processes. To this purpose, many studies on family interactions have considered the family as a primary socialization agent for children. For example, McHale (2007) showed that conflictual or disorganized family practices are predictive of maladaptive child social development. Healthy child development is most likely to occur in the context of high levels of family warmth and acceptance (McHale & Fivaz-Depeursinge, 1999). Besides the systemic and developmental theories, recent developments in neuroscience, genetics, and epigenetics have suggested that the family environment influences children’s genetic traits and triggers their expression (Sluzki, 2007). Conversely, the child’s genetic predisposition could significantly affect family functioning and the mental health of other family members. Such influences

of family interactions on child development would be particularly significant during sensitive periods early in child’s life.

To that purpose, our study focused on a model of early family interactions called “family alliance” (FA), which refers to the degree of early family engagement and cooperation in everyday activity involving triadic father–mother–child interactions, such as playing together or having a meal (Favez, Frascarolo, & Fivaz-Depeursinge, 2006; Favez, Lavanchy Scaiola, Tissot, Darwiche, & Frascarolo, 2010; Fivaz-Depeursinge & Corboz-Warnery, 1999). Interactive family coordination depends on four hierarchical functions (i.e., in descending order of importance): (a) participation of all family members, (b) organization in role distribution, (c) focalization on a common focus of interaction, and (d) affect sharing and empathy (for more details, see Favez et al., 2010). The FA seems fairly stable from pregnancy to toddlerhood (Favez, Frascarolo, Carneiro, Montfort, Corboz-Warnery, & Fivaz-Depeursinge, 2006; Favez, Frascarolo, & Fivaz-Depeursinge 2006; Favez et al., 2012). Longitudinal studies have repeatedly shown the influence of early family interactions on child development: FA is predictive of child outcomes at 18 months and 5 years of age, particularly regarding

the development of the child's theory of mind and understanding of inner states (Favez, Frascarolo, Carneiro et al., 2006; Favez, Frascarolo, & Fivaz-Depeursinge, 2006). However, few studies have focused on the other variables that one would expect to be associated with FA and the process of construction of early family interactions. At present, prenatal interactions, the child's temperament (Favez, Frascarolo, Lavanchy Scaiola, & Corboz-Warnery, 2013), parents' role reversal [i.e., one of the three scales in the Adult Attachment Interview (George, Kaplan, & Main, 1985) evaluating signs of role reversal with the caregiver during childhood], and the fathers' involvement in the child's care (Simonelli, Bighin, & De Palo, 2013) have been identified as important predictors of FA. Moreover, associations have been found between less adaptive early family interactions and (a) parents' marital withdrawal and (b) the fathers' insecure attachment (Paley, Cox, Kanoy, Harter, Burchinal, & Margand, 2005). Now, one difficulty in the study of family-level processes has been the fact that multiple sources of influence impact the family system. Longitudinal research is therefore needed to disentangle parental and child dynamics to identify the weight of variables that are potentially associated with FA. The aim of our study was thus to fill this gap and to answer the following question: Which characteristics of parents and children could be significantly associated with FA? According to S. Minuchin (1974), a family structure comprises different subsystems characterized by unique patterns of relationships which appear at different family periods (Aldous, 1977). Initially, we find a subsystem constituted by two individuals: the future father and mother. After childbirth, two other subsystems appear: the child's and the coparenting. In this study, we hypothesized that the parents', the child's, and the coparenting subsystems would affect the process of FA construction.

#### BEFORE THE CHILDBIRTH: PARENTS' CHARACTERISTICS AS VARIABLES ASSOCIATED WITH FAMILY FUNCTIONING

Parents' individual characteristics are considered the most influential determinants of parenting (Belsky, 1984; van Bakel & Riksen-Walraven, 2002) because they are thought to affect parental behavior both directly and indirectly (i.e., through support provided by the partner and the broader social network). The contribution of parents' individual characteristics to their quality of parenting has received a lot of attention (for a meta-analysis, see Prinzie, Stams, Deković, Reijntjes, & Belsky, 2009). However, although parenting and FA share some common characteristics, they constitute two separate constructs, notably because of their individual (i.e., parenting) versus triadic (i.e., FA) processes. Even though parents' characteristics such as parental attachment also have been considered as related to early family interactions (Lerner, 1989; Paley et al., 2005; Simonelli et al., 2013; Stright & Bales, 2003), this influence has received little attention.

As an extension of Belsky's (1984) and van Bakel and Riksen-Walraven's (2002) models, our study has included two important domains of parents' characteristics during pregnancy as potential determinants of family interactions: parents' personality and attachment characteristics. First, a major determinant of the sta-

bility of family functioning stems from the parent's personality traits; that is, their stable characteristics with respect to thinking, feeling, and behaving (McCrae & Costa, 1999; Saucier & Simonds, 2006). Research has reached near a consensus (Plaisant, Courtois, Réveillère, Mendelsohn, & John, 2008) on a five-trait structure of personality (i.e., the "Big Five"): *Neuroticism* (withdrawal behavior, anxiety, and detection of threat), *Extraversion* (intensive pursuit of interpersonal relationships, activities, stimulations, and joy), *Agreeableness* (empathic orientation), *Openness to experience* (intellectual curiosity, imagination, and new cultural experiences), and *Conscientiousness* (ability to organize, plan, and respect conventions). Personality traits shape how people experience and respond to a wide variety of developmental tasks such as parenting and the establishment of a family (Belsky, 1984; Caspi, Roberts, & Shiner, 2005; Prinzie et al., 2009; van Bakel & Riksen-Walraven, 2002). Adult personality also is an important predictor of relationship patterns (Caspi et al., 2005) such as relationship (dis)satisfaction, conflict, abuse, and ultimately, dissolution (Karney & Bradbury, 1995), as it influences and alters microinteractional processes. To illustrate, people high in neuroticism are more likely to be exposed to daily conflicts in their relationships (Bolger & Zuckerman, 1995) and to escalate negative affect during these conflicts (Gottman, Coan, Carrere, & Swanson, 1998). Personality also influences every aspect of an intimate relationship, from the selection of one's spouse to the way the spouses perceive, communicate with, and behave toward one another (Botwin, Buss, & Shackelford, 1997). The influence of personality on relationships over time is considerably stronger than is the influence of relationships on personality (e.g., Neyer & Lehnart, 2007). To date, only a few studies have addressed the association of personality with family functioning. These have shown a negative influence from neuroticism and a positive influence from extraversion, agreeableness, and conscientiousness on family functioning (Miller et al., 2000). In this research, we expected that parents' personality would influence early family interactions. We specifically hypothesized that high levels of extraversion, agreeableness, and conscientiousness and low levels of neuroticism would be positively associated with FA.

Beyond personality traits, attachment theory is another useful framework to examine family interactions (Cohn, Cowan, Cowan, & Pearson, 1992). Originally developed by Bowlby (1969) to explain the close bonds between children and their caregivers, attachment theory was given new life when Hazan and Shaver (1987) applied the tenets of the theory to adult relationships. Security in attachment can be conceptualized as a function of two dimensions: anxiety and avoidance (Brennan, Clark, & Shaver, 1998). The first dimension, anxiety, measures the degree to which individuals worry that their close relatives do not really love them and might be unavailable or unsupportive in stressful situations. The second dimension, avoidance, assesses the degree to which individuals desire limited intimacy with, and strive to remain psychologically and emotionally independent from, close relatives. People characterized by high levels of attachment security (i.e., those who are low on both dimensions) are willing to rely on

others for comfort and are confident that those close to them will be responsive and supportive in times of need. Adult attachment is thought to influence one's perceptions of, and behaviors in, close relationships. Attachment plays a role in predicting parent-child and adult romantic relationships (Simpson, Collins, Tran, & Haydon, 2007). For example, Cohn et al. (1992) found secure parents to be more warm and engaged and to provide more structure to their child than were insecure parents. Finally, Paley et al. (2005) showed that families with fathers with an insecure attachment had fewer positive and more negative interactions when the child was 24 months old. Consequently, we expected to observe an influence of attachment orientations on family interactions, with a negative effect of avoidant attachment and anxious attachment on FA.

### AFTER THE CHILDBIRTH: COPARENTING RELATIONSHIPS AND CHILD TEMPERAMENT

Childbirth brings about major changes in dyadic woman-man interactions, such as the development of the family's "executive subsystem" (S. Minuchin, 1974) or "coparenting relationship" as concerns the degree of collaboration, affirmation, and support between the mother and the father sharing responsibility for their children. Coparenting functions effectively when parents collaborate, communicate solidarity and a consistent and predictable set of rules and standards to children, and provide a safe and secure home base (McHale et al., 2002). Positive coparenting relationships are sources of support for mothers and fathers in their role as parents (Belsky, 1984; van Bakel & Riksen-Walraven, 2002).

Do coparenting relationships differ from FA? Actually, the two constructs are similar in the extent to which they consider the mother-father-child triad. Coparenting relationships are understood as how two parents work together to raise a child (Talbot & McHale, 2004) while FA concerns the degree of early family engagement and cooperation involving the father-mother-child triad. However, these two constructs differ in the extent to which they consider the child's contribution: The child's emotions and behaviors and their effect on parents' emotions and behaviors are taken into account in the FA, but not in the coparenting relationships. Moreover, coparenting is conceived as "shared parenting" (Ehrenberg, Gearing-Small, Hunter, & Small, 2001), referring to the parents' psychology, while the FA construct considers the triad as determined more by family psychology. FA considers a set of family interactions (i.e., the dyadic relationships parent-infant and mother-father, the relationships between the parents-infant subsystems, and the triadic relationships involving mother-father-child) and interactional influences (i.e., the dyadic parental influence, the influence of the child on the parents, and the influence of the parents on the child) while coparenting is mainly concerned with parenting relationships and interactions.

From a family systems theory perspective (P. Minuchin, 1985), the coparenting relationship represents a unique subsystem within the family and is an extension of the marital relationship that involves interactions with the child. It represents a

point of intersection between two family subsystems, the marital and parent-child relationships. Following the ecological model (Feinberg, 2003), coparenting relationships are a mediator of influence on important family outcomes, indicating that multiple factors influence coparenting and that coparenting influences multiple parent and child outcomes. Parents' characteristics seem typically to be an influential factor on coparenting. For example, parents' personality adjustment (characterized by a high level in agreeableness, conscientiousness, extraversion, and openness to experience and a low level in neuroticism) is related to coparenting: When parents are less well-adjusted, they perceive their coparenting partner as likely to compete, contradict, criticize, or interrupt their interactions with the child (Stright & Bales, 2003). On the other hand, Talbot, Baker, and McHale (2009) showed that maternal insecure attachment predicted higher levels of coparental conflict, as did paternal secure attachment. This negative influence of paternal security on coparenting could be explained by the secure fathers' tendency to get involved in childcare and therefore play an active role in coparenting, thus creating occasions for the mother and the father to clash. Results also showed that insecure fathers exhibited a lower level of coparental cohesion and that maternal attachment status moderated the relation between paternal attachment status and coparental cohesion, with insecure father/secure mother dyads exhibiting the lowest level of cohesion and secure/secure dyads showing the highest levels. Moreover, prenatal coparenting relationships were considered as predictors of triadic interactions during infancy (Favez et al., 2013). Couple cooperation was correlated with almost all dimensions of the FA at 3 and 18 months of the child's age.

In this study, because of (a) the influence of parents' characteristics on coparenting and (b) the predictable role of coparenting on FA, we hypothesized that perceptions of coparenting acted as mediators in the association of parents' characteristics (i.e., parents' personality and attachment) and FA. To avoid any overlap between coparenting and FA in this study, self-reported and observational measures were used to assess parents' perceptions of coparenting and FA, respectively.

Furthermore, family functioning cannot be understood without the child's contributions, indexed here by infant temperament. Temperament refers to biologically based individual differences in reactivity and the ability to self-regulate (Rothbart, Bates, & Damon, 1998). Contemporary research in the area of temperament has postulated a model considering three global dimensions: surgency (activity level and tendency to approach or withdraw from novel situations), negative affect (sadness, distress to limitation, and soothability), and effortful control (systems of attention and behavioral inhibition) (Rothbart et al., 1998). Young children have the capacity early on to engage reciprocally with their two parents simultaneously (Fivaz-Depeursinge, Favez, Lavanchy, de Noni, & Frascarolo, 2005). They elicit parenting behavior and respond in ways that shape parenting. From a family perspective, the infant has the capacity to facilitate or disrupt triadic processes (McHale, 2007). Consequently, the interaction effects of parents' characteristics and child's temperament need to be



studied to consider the complexity of family development and its processes (Kochanska, 1997). Moreover, research has been conducted on the associations between the child's temperament and coparenting. Direct associations between self-reported coparenting and the child's temperament have been found, especially for fathers: When fathers perceived greater undermining of coparenting at 3 months' postpartum, they also perceived an increase in infant negative affect from 3 to 9 months' postpartum (Donnally-Cooper, 2011). Results from observational research have been more mixed. Jacobson, Belsky, and Crnic (1995) showed that negative affect predicted more supportive and fewer unsupportive coparental behaviors during toddlerhood. Schoppe-Sullivan, Szewczyk Sokolowski, Brown, Beggs, and Mangelsdorf (2004) found that parents of more temperamentally difficult infants displayed both less supportive and less undermining coparenting behavior. In contrast, McHale et al. (2004) found no direct associations between observed coparenting and child temperament. Considering the relation between coparenting and child temperament, two directions of effects are possible. One possible reaction to a child's difficult temperament is for parents to compensate by making a more determined effort to present a cooperative parenting team. On the other hand, parents may fail to coparent effectively when the stress of interaction with a temperamentally difficult infant negatively affects the quality of the coparental relationship. The possible relation of child temperament to coparenting and the possible moderator role of child temperament in the association between parent's characteristics and FA led us to test, after the mediated model, a conditional model using parents' characteristics (i.e., personality traits and attachment orientations) as distal variables of influence, coparenting as a mediator, child's temperament as a moderator, and FA as an outcome.

### CURRENT STUDY AND HYPOTHESES

This three-wave longitudinal study (pregnancy, 12 months' postpartum, and 16 months' postpartum) was based on (a) mothers' and fathers' self-reported measures of personality traits, attachment orientations, and coparenting; (b) parent-reported measures of child's temperament, and (c) the observation of the FA. Hence, this study can be qualified as multi-informant. A structural equation model was tested implying (a) direct associations between the parents' characteristics (i.e., parents' personality and attachment) and FA, (b) indirect effects via perceptions of coparenting as mediators in the association between parents' characteristics and FA, and (c) moderated effects with child's temperament as a moderator in the direct and/or indirect relationship between parents' characteristics and FA. First, we hypothesized that parents' personality traits and attachment orientations would be directly and/or indirectly associated with FA. Specifically, we expected that extraversion, agreeableness, and conscientiousness would be positively linked to FA while neuroticism and both attachment orientations (i.e., avoidance and anxiety) would be negatively associated with FA. No research has yet examined the associations between parents' characteristics and FA. Therefore, our first hypothesis was essentially

exploratory. Second, we hypothesized a mediation by perception of coparenting in the association between parents' characteristics and FA. Finally, a conditional indirect model (i.e., a moderated mediation, including all parents' characteristics and the interaction terms between the child's temperament and parent's characteristics and coparenting as a mediator) was hypothesized and tested.

## METHOD

### Sample

Data were collected from a sample of 62 nonreferred, French-speaking, heterosexual triadic families ( $n = 42$  primiparous families; children = 35 girls, 27 boys). At the beginning of the study, parents were 23 to 43 years old (mothers:  $M = 29.85$ ,  $SD = 4.04$ ; fathers:  $M = 32.24$ ,  $SD = 4.05$ ). Three waves of data were collected in a longitudinal prospective research program: pregnancy ( $M = 24.47$  pregnancy weeks,  $SD = 8.39$ ), 12 months' postpartum ( $M = 12.46$  months' postpartum,  $SD = 1.20$ ), and 16 months' postpartum ( $M = 15.75$  months' postpartum,  $SD = 2.73$ ). Parents' characteristics were measured before childbirth. These characteristics tend to be highly stable between pregnancy and 1 year' postpartum (Galdiolo & Roskam, 2014). Next, coparenting and child temperament were evaluated at 12 months' postpartum because (a) coparenting tends to be stable within developmental periods such as infancy (Van Egeren, 2004) and because (b) child temperament is characterized by an increase in expression, level of activity, approach, distress to limitations, and fear throughout the first year of life (Gartstein & Rothbart, 2003), which allows a more stable measure of child's temperament at 1 year of age and thus a more stable interaction effect with the parents' characteristics. Finally, FA was evaluated at 16 months' postpartum since (a) infants tend to show substantive prosocial behaviors at this age (Roth-Hanania, Davidov, & Zahn-Waxler, 2011), which facilitate family interactions and (b) longitudinal and prospective condition complete. Family monthly incomes were distributed as follows: €0 to 1,999 (11.3%), €2,000 to 3,499 (72.6%), €3,500 to 4,999 (12.9%), and more than €5,000 (3.2%). In Belgium, the mean income is €2,987 (Colicis et al., 2004). With an income below €2,000, a family is considered to be near the poverty line. Between €3,500 and €4,999, incomes are considered as above average. Incomes above €5,000 are considered very high.

### Procedure

Participants were recruited during the second trimester of pregnancy with the assistance of gynecologists who verbally gave information about our study to their patients and by means of a leaflet. Afterwards, interested parents contacted us to volunteer for the study. At Time 1 (T1; pregnancy) and Time 2 (T2; 12 months' postpartum), parents were asked to separately complete questionnaires assessing their personality traits and attachment orientations (T1), coparenting (T2), and child's temperament (T2). At

Time 3 (T3; 16 months' postpartum), FA was assessed via observations of families engaged in the Lausanne Trilogue Play (LTP; Fivaz-Depeursinge & Corboz-Warnery, 1999) collected at home. Originally assessed in a lab situation, the LTP can be easily performed elsewhere. Indeed, we used exactly the same procedure and materials as in the lab. Data were recorded with parents' informed consent, and parents were assured that the data would remain confidential. For ethical reasons, this study was registered with the Commission for the Protection of Privacy.

### Measures

This longitudinal study was prospective and multi-informant. Family observational assessment allowed us unique data on family functioning and was a crucial complement to questionnaires for the following reasons: (a) The exclusive use of self-reported measures would have raised the "glop problem" (Gottman, 1998) when comparing the results from different questionnaires (i.e., the same variance may be captured by different instruments, so that any correlation between them may result from a lack of independence in the measures rather than from any actual association between the constructs); (b) the family has emergent properties that cannot be captured by individual self-reported measures (McHale, Kuersten-Hogan, Lauretti, & Rasmussen, 2000); and (c) many behaviors are performed unconsciously, and, even if they are conscious, social desirability could well prevent family members from reporting them if they are not socially "correct" (Weiss & Heyman, 2004).

**FA.** The observational paradigm used in this study to assess FA is the LTP procedure (Fivaz-Depeursinge & Corboz-Warnery, 1999), which is a semistandardized observation play situation involving the father, mother, and baby together. During LTP, the family plays several games (Frascarolo, Favez, & Fivaz-Depeursinge, 2003). Co-constructing family games promotes sharing affects and reciprocity between family members (Tronick, Als, & Adamson, 1979). LTP grants access to information about the way in which family members deal with emotions and daily family difficulties. Family interactions were video-recorded. The parents sat in front and on each side of their child; their body positions thus formed a triangle. The technical equipment included two cameras; one recorded the parents and the other the baby. The following instructions were given: "We'll ask you to play together as a family in four separate parts. In the first part, one of you plays with the child and the other one is simply present. In the second part, you reverse the roles. In the third part, the three of you will play together. In the last part, you will talk a while together and it will be the child's turn to be simply present." The play thus followed a four-part scenario, related to the four possible relational configurations in a triad: (a) 2 + 1, one parent was active with the child; (b) 2 + 1, the other parent was active; (c) 3, all played together; and (d) 2 + 1, both parents talked together while the child was in the third-party position. Pairs of socks and soft toys were given to the family who played different games such as "peek-a-boo," puppets, and so on.

The research team decided who began the game to counterbalance any possible order effect between the mother and the father. Mean duration of the LTP in this study was 14 min, 34 s ( $SD = 4'47$ ), instructions included. All videos were coded by one certified coder (i.e., trained at the coding of the LTP in Lausanne). Two additional coders each coded half of the videos (Videos were randomly attributed to one or to the other coder.) so that all the videos were double-coded. FA was assessed with the Family Alliance Assessment Scale (FAAS; Favez et al., 2010), which is composed of 11 scales that operationalize the four functions and the dynamics aspects of FA. Each scale allows an assessment of the interaction according to an ordinal scoring system in 3 points: *appropriate* (2 points), *moderate* (1 point), and *inappropriate* (0 point). Scores are added to obtain an FA score between 0 and 22. The higher the score, the more functional the FA. All details of the scales are described in the coding manual (Favez et al., 2010). In our sample, high internal consistency ( $\alpha = .90$ ) and interrater reliability (intraclass coefficient = .87) were found, all correlations being significant to at least  $p < .05$ . Coders were used as independent variables to test systematic differences in the level of coding between two coders; paired comparisons ( $t$  test) showed no significant differences. A one-factor solution emerged, explaining 51.46% of the variance. Confirmatory factor analysis (CFA) of a second-order factor model of the FAAS provided acceptable fit to the data,  $\chi^2(39) = 66.94$ ,  $p < .01$ ;  $\chi^2/df = 1.72$ ; Comparative Fit Index (CFI) = .91; root mean square error of approximation (RMSEA) = .07.

**Parents' characteristics.** Personality was assessed by means of a short, self-reported version of the NEO Personality Inventory-Revised, the NEO-60 (Aluja, García, Rossier, & García, 2005). This questionnaire consisted of five subscales (12 items each): Neuroticism (anxiety, distress, and nervousness), Extraversion (quantity and intensity of interpersonal interaction and capacity for joy), Agreeableness (kindness, sympathy, and empathy), Openness to experience (pursuit of new experiences, broad interests, and imagination), and Conscientiousness (organization, strong sense of purpose, and high standards). A 5-point Likert-type scale was provided for each item, ranging from 0 (*Strongly disagree*) to 4 (*Strongly agree*). The NEO-60 has shown good reliability coefficients and factor structure. Correlations between items of the NEO-60 and NEO-PI-R domain scores are high (Aluja et al., 2005). In our sample, a five-factor solution emerged, explaining 43.66% of the variance and all items loading on the expected factor. Alphas ranged from .79 to .88. Measurement models assessed with structural equation modeling software and CFA showed that the NEO-60 provided acceptable fit to the data,  $\chi^2(15) = 12.92$ , n.s.–27.49,  $p < .05$ ;  $\chi^2/df < 1.83$ ; CFI > 0.99; RMSEA < .06.

Attachment was assessed by means of the Experiences in Close Relationships Questionnaire-Revised (ECR-R; Brennan et al., 1998; Fraley, Waller, & Brennan, 2000). This questionnaire consisted of two subscales (18 items each): Anxiety (e.g., I worry about being abandoned) and Avoidance (e.g., I prefer not to show a close relation how I feel deep down). A Likert-type

scale of 1 (*completely disagree*) to 5 (*completely agree*) was provided. The ECR-R has been used in many studies since 1998, and has been found to be highly reliable and to have high construct and predictive validity (Shaver & Mikulincer, 2002; Sibley & Liu, 2004). Latent variable path analyses showed that longitudinal measures of both the Anxiety and Avoidance subscales were stable over a 6-week assessment period (86% shared variance over time), which suggests that the ECR-R provided stability estimates of trait attachment that were largely free from measurement error over short periods of time (Sibley & Liu, 2004). In our sample, a two-factor solution emerged, explaining 43.48% of the variance, and all items loaded on the expected factor. Alphas were greater than .90. Measurement models assessed with SEM software and CFA showed that the ECR-R provided acceptable fit to the data,  $\chi^2(127) = 271.34\text{--}279.38$ ,  $p < .001$ ;  $\chi^2/df < 2.41$ ; CFI  $> 0.94$ ; RMSEA = .06.

**Mediator.** Perceptions of coparenting were assessed by means of a French version (back-translation) of the revised Coparenting Scale questionnaire (CPS; Feinberg, Brown, & Kan, 2012). Mothers and fathers separately completed this questionnaire, which consists of six subscales: (a) Agreement (e.g., My partner and I have the same goals for our child(ren); four items), (b) Increased Closeness (e.g., I feel close to my partner when I see him (her) play with our child(ren); five items); (c) Exposure to Conflict (e.g., How many times a week do you argue with your partner in front of your child(ren)?; five items); (d) Active Support/Cooperation (e.g., My partner supports my parenting decisions; six items); (e) Competition/Undermining (e.g., My partner sometimes makes jokes or sarcastic comments about the way I am as a parent; six items); and (f) Endorsement of Partner's Parenting (e.g., I think that my partner is a good parent; seven items). A Likert-type scale of 1 (*not at all true for us*) to 7 (*absolutely true for us*) for Items 1 to 28 and 1 (*never*) to 7 (*very often*) for Items 29 to 33 was provided. The French version was tested in an independent sample ( $n = 630$ ) with  $\alpha = .78$  for the total score and  $\alpha$ s ranging from .66 to .88 for the different subscales. In this research, only the total score was calculated (i.e., to obtain the mean score, all the items were summed, and the items of Competition and Exposure to Conflict were reversed) and used because (a) we did not have specific hypotheses for the different subscales, and (b) the subscales were intercorrelated. A one-factor solution emerged, explaining 33.65% of the variance, and all the items loaded on the general factor. Alpha was .90. There was a significant relationship between mothers' and fathers' coparenting rates,  $r = .45$ ,  $p < .01$ .

**Moderator.** Child's temperament was assessed by means of the French short version (back-translation) of the revised Infant Behavior Questionnaire (IBQ-R; Gartstein & Rothbart, 2003). Mothers and fathers separately completed this questionnaire, which consisted of three higher order factors: (a) Surgency (e.g., When tossed around playfully how often did the baby laugh?; 13 items), (b) Negative Affect (e.g., When tired, how often did your baby show distress?; 12 items), and (c) Effortful Control (e.g., How often dur-

ing the last week did the baby enjoy being read to?; 12 items). In completing the IBQ-R, mothers and fathers were asked to read the description of each of the baby's behaviors, indicating how often the infant engaged in the various behaviors during the last week (i.e., the last 7 days). They responded by using a Likert-type scale of 1 (*never*), 2 (*very rarely*), 3 (*less than half the time*), 4 (*half the time*), 5 (*more than half the time*), 6 (*almost always*), and 7 (*always*). This short-form scale demonstrated adequate internal consistency and criterion validity, and was consistent across time. The French version was tested in an independent sample ( $n = 630$ ), with  $\alpha$ s ranging from .64 to .78 for the different subscales. In our sample, a three-factor solution emerged, explaining 43.00% of the variance. The majority of items loaded on the expected factors. After removing items with low loading (four items from the Surgency scale, two items from the Negative Affect scale, and six items from the Effortful Control scale),  $\alpha$ s were .58 for Surgency, .72 for Effortful Control, and .79 for Negative Affect. Because of its low  $\alpha$ , Surgency was not taken into account in this study, and only Negative Affect (NA) and Effortful Control (EC) were used. CFA provided acceptable fit to the data, for NA:  $\chi^2(50) = 59.83$ , n.s.;  $\chi^2/df = 1.20$ , CFI = .95, RMSEA = .06; for EC:  $\chi^2(50) = 56.67$ , n.s.;  $\chi^2/df = 1.13$ , CFI = .95, RMSEA = .05. There were significant relationships between mothers' and fathers' reported rates of the child's NA,  $r = .48$ ,  $p < .01$ , and the child's EF,  $r = .30$ ,  $p < .05$ .

### Analytical Strategy

Recall that our objective was to evaluate the relative weight of each parents' characteristics and to test their direct and indirect (via the perception of coparenting as a mediator and child's temperament as a moderator) associations with FA. Concerning the mediated model, several scenarios of a nonrecursive longitudinal causal model are possible (Zhao, Lynch, & Chen, 2009): (a) a complementary mediation (i.e., mediated and direct effects both exist and point at the same direction), (b) a competitive mediation (i.e., mediated and direct effects both exist and point in opposite directions), (c) indirect-only mediation (i.e., mediated effect exists, but not direct effect), (d) direct-only nonmediation (i.e., direct effect exists, but no significant indirect effect), and (e) no-effect nonmediation (i.e., neither direct nor indirect effect exists). In this study, we expected that perception of coparenting would act as a mediator and "transmit" a portion of the effect of the distal predictors onto the outcome (Kline, 2005).

Preliminary analyses (i.e., bivariate correlations) were computed to highlight significant relationships between the parents' characteristics, the mediator, the moderator, and the outcome (Holmbeck, 1997). Next, the mediated full model in which the tests were performed involved (a) direct effects between the parents' characteristics and the FA, and (b) indirect effects via the perception of coparenting in the link between parents' characteristics and the FA. Multigroup analyses were performed to evaluate the gender differences and the relative weight of each mother's and father's characteristic in the mediated model. Afterward, the

TABLE 1. Descriptive Statistics

		<i>M</i>	<i>SD</i>	Range
Outcome	Family Alliance	14.48	5.28	3.00–22.00
Mediator	Coparenting	5.86 (M)/5.97 (F)	0.79 (M)/0.70 (F)	3.18–6.91
Moderator	Negative Affect	3.47 (M)/3.67 (F)	0.87 (M)/1.08 (F)	1.56– 5.90
	Effortful Control	5.66 (M)/5.83 (F)	0.87 (M)/0.61 (F)	3.00– 7.00
Parents' Characteristics	Neuroticism	2.94 (M)/2.36 (F)	0.71 (M, F)	1.00– 4.50
	Extraversion	3.74 (M)/3.36 (F)	0.61 (M)/0.59 (F)	2.25– 5.00
	Openness to Experience	3.17 (M)/3.23 (F)	0.66 (M)/0.71 (F)	1.83–4.67
	Agreeableness	3.76 (M)/3.43 (F)	0.57 (M)/0.60 (F)	2.00–4.83
	Conscientiousness	4.06 (M)/3.77 (F)	0.55 (M)/0.63 (F)	2.17–5.00
	Anxious Attachment	2.44 (M)/2.18 (F)	0.85 (M)/0.64 (F)	1.00– 4.22
	Avoidant Attachment	2.35 (M)/2.42 (F)	0.75 (M)/0.69 (F)	1.17–4.44

Note. *N* = 124. M = Mothers, F = Fathers.

conditional model (i.e., a moderated mediation, including all parents' characteristics and the interaction terms between the child's temperament and parents' characteristics and coparenting as a mediator) was tested. The models were computed with the manifest variables because the sample size was not large enough for the computation of latent variables. Goodness-of-fit indices were used in conjunction with the  $\chi^2$  statistic to determine the acceptability of the models: the  $\chi^2/df$ , the Akaike Information Criterion (AIC), the CFI, and the RMSEA.  $\chi^2/df$  is considered satisfactory when its value is smaller than 2. For CFI, values close to .90 or greater are desirable whereas RMSEA should preferably be less than or equal to .06 (Hu & Bentler, 1999). The AIC is a comparative measure of fit and is meaningful when two models are estimated and compared (i.e., our mediated and conditional models). Lower values indicated a better fit; thus, the model with the lowest AIC is the best fitting model (Blunch, 2008). The main statistical analyses were carried out using SEM software AMOS 17.0 (Arbuckle, 2007). This statistical technique allows including simultaneous predictors of the FA and using bootstrap techniques. The bootstrapping method is a nonparametric test; as such, it does not violate assumptions of normality and is therefore recommended for small sample sizes. Bootstrapping involves repeatedly randomly sampling observations with replacement from the data set to compute the desired statistic in each resample. Over hundreds of bootstrap resamples, an approximation of the sampling distribution of the statistic of interest is provided. This method provides point estimates and confidence intervals by which one can assess the significance or nonsignificance of a mediation effect (Byrne, 2001).

## RESULTS

### Preliminary Analyses

The descriptive statistics and the bivariate correlations between the parents' characteristics, the coparenting (i.e., mediator), the child's temperament (i.e., moderator), and the FA (i.e., outcome) are presented in Tables 1 and 2. The mothers' perception of coparenting was moderately correlated with their Extraversion ( $r =$

.30) and Conscientiousness ( $r = .41$ ) and strongly correlated with their Avoidance ( $r = -.53$ ) while the fathers' perception of coparenting was moderately correlated with their Neuroticism ( $r = .30$ ), Openness to Experience ( $r = .30$ ), Conscientiousness ( $r = .30$ ), and Anxious Attachment ( $r = -.49$ ). Weak correlations were found between parents' ratings of the child's temperament and the other constructs of interest. Finally, FA was weakly correlated with mothers' Agreeableness ( $r = .29$ ) and Avoidant Attachment ( $r = -.26$ ) and moderately correlated with mothers' Conscientiousness ( $r = .37$ ) and perception of coparenting ( $r = .39$ ).

### Mediated Model: Direct and Indirect Effects

First, the full model of mediation (Figure 1) was tested and fit the data well,  $\chi^2(17) = 25.95$ , n.s.;  $\chi^2/df = 1.53$ , CFI = 0.95, RMSEA = .06, AIC = 145.96). Recall that the objective was to evaluate the relative weight of parents' characteristics and to test their direct and indirect (i.e., via coparenting) effect on FA. This model also included the infant's gender and family income as control variables. Only family income had a positive influence on FA,  $\theta = .60$ ,  $p = .00$ .

In this model, parents' characteristics did not have a significant direct effect on FA, and some of them were not associated with coparenting. An alternative and parsimonious model was therefore tested,  $\chi^2(3) = 3.79$ , n.s.;  $\chi^2/df = 1.26$ , CFI = 0.99, RMSEA = .05, AIC = 37.79, with a lower AIC than that in the full model: Only Conscientiousness, Anxious attachment, and Avoidant attachment showed significant associations with perception of coparenting. Figure 2 depicts the parsimonious model where the links between the parents' characteristics and FA were only indirect via coparenting.

Bootstrapping allows testing mediation (Zhao et al., 2009). Anxious attachment,  $\theta = -.06$ ,  $p = .009$ , Avoidant attachment,  $\theta = -.06$ ,  $p = .040$ , and Conscientiousness,  $\theta = .05$ ,  $p = .017$ , had only an indirect effect on FA via coparenting (Bollen-Stine Bootstrap,  $p = .399$ ). Consequently, the results underlined an indirect-only mediation of Avoidant attachment, Anxious attachment, and



**TABLE 2.** Pearson Correlation Coefficients Between Parents' Characteristics, Perceptions of Coparenting, Child's Temperament, and Family Alliance for (a) Mothers and (b) Fathers

		Moderators		Mediator	Outcome
		Child's NA	Child's EC	Coparenting	FA
Mothers' Personality	Neuroticism	.08	-.06	-.26*	-.07
	Extraversion	-.05	-.00	.30*	.21
	Openness to Experience	-.00	.09	.10	-.09
	Conscientiousness	-.23†	.27*	.41**	.37**
	Agreeableness	-.10	.03	.24†	.29*
Mothers' Attachment	Anxiety	.08	-.14	-.28*	-.15
	Avoidance	.10	-.09	-.53**	-.26*
Moderators	Child's NA	-	-.10	-.10	-.08
	Child's EC	-.10	-	.29*	.20
Mediator	Coparenting	-.10	.29*	-	.39**
Fathers' Personality	Neuroticism	.05	-.21	-.30*	-.12
	Extraversion	-.07	.20	.12	.07
	Openness to Experience	-.02	.00	.30*	.11
	Conscientiousness	-.27†	.24	.30*	.11
	Agreeableness	-.08	-.16	.09	.11
Fathers Attachment	Anxiety	-.05	-.05	-.49***	-.09
	Avoidance	.10	-.15	-.25†	-.19
Moderators	Child's NA	-	-.17	-.18	.02
	Child's EC	-.17	-	.24	-.05
Mediator	Coparenting	-.18	.24	-	.10

Child's NA = Child's negative affect, Child's EC = Child's effortful control, FA = family alliance.

† $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

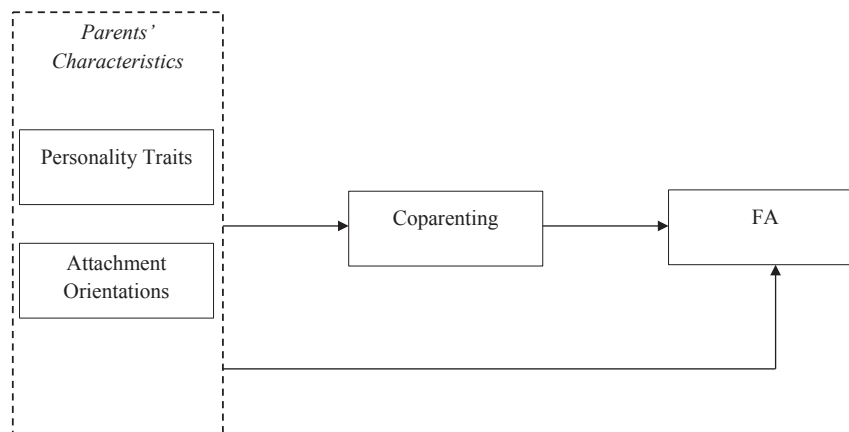


FIGURE 1. Model of direct and indirect effects with parents' characteristics as distal variables, perception of coparenting as a mediator, and family alliance (FA) as an outcome.

Conscientiousness in FA with coparenting as a mediator (i.e., mediated effect exists, but not direct effect).

*Multigroup analyses: differences between mothers' and fathers' characteristics.* The multigroup analyses aim to compare pairs of path coefficients for identical models (e.g., associations between parents' characteristics and FA with coparenting as a mediator), but based on different samples (e.g., mothers vs. fathers). Our objective was to identify whether mothers and fathers differ from each other

in their associations between individual characteristics and FA. Table 3 compares the cross-path coefficients ( $z$  scores) and gives the critical ratios between mothers and fathers. The models for mothers and fathers differed only in the associations between (a) Anxious attachment and Avoidant attachment with (b) perception of coparenting. Thus, the mothers' Avoidant attachment and the fathers' Anxious attachment were negatively associated with coparenting while the fathers' Avoidant attachment and the mothers' Anxious attachment did not have any significant association.

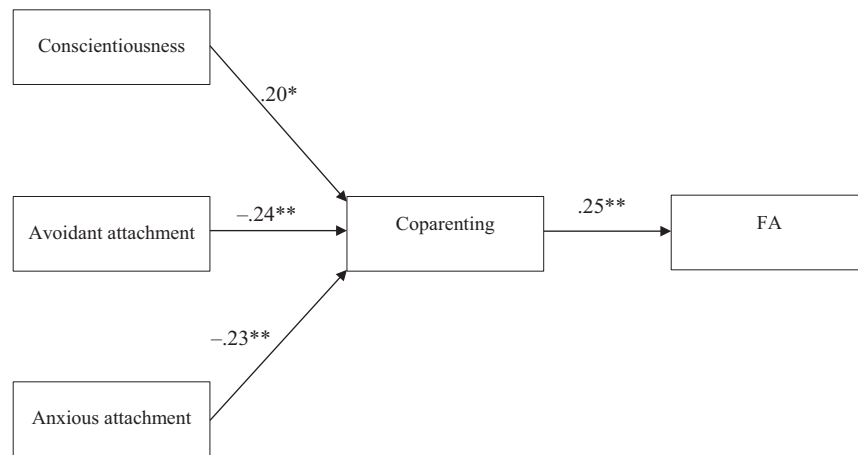


FIGURE 2. The parsimonious model with indirect effects of parents' Conscientiousness, Avoidant attachment, and Anxious attachment on family alliance (FA) with coparenting as a mediator. \* $p < .05$ . \*\* $p < .01$ .

However, in both models, Conscientiousness was related to coparenting, and coparenting was related to FA, as depicted in the mediated model.

#### **Conditional Indirect Model: Child's Temperament as a Moderator**

The second step consisted in evaluating the moderated effect of child's temperament on the parsimonious model of mediation. For this purpose, all variables from the parsimonious model and the interactions terms between child's temperament (i.e., negative affects and effortful control) and parents' characteristics were entered in the model. However, this last model did not fit the data well,  $\chi^2(33) = 189.66$ ,  $p < .00$ ;  $\chi^2/df = 5.75$ , CFI = 0.38, RMSEA = .20, AIC = 277.66. There were no interaction effects between child's temperament and the parents' variables of interest on FA. The mediated parsimonious model showed the best fit to our data.

## DISCUSSION

The main objective of this study was to identify the process of construction of family interactions and to examine the interrelations between the different family subsystems (i.e., individual, dyadic, and triadic). A model including parents' characteristics (i.e., personality traits and attachment orientations) as distal variables, coparenting as a mediator, and child's temperament as a moderator on FA was tested. Results showed that both mothers' and fathers' characteristics were associated with family interactions: Parents' Conscientiousness, mothers' Avoidant attachment, and fathers' Anxious attachment were indirectly associated with FA. Further, coparenting acted as an important mediator in the model while child's temperament did not show any moderated effect. Studies done in Lausanne (e.g., Favez, Frascarolo, Carneiro et al., 2006) have underlined the stability of FA. Such stability could be attributable to the repetition of family transactions and interactions, which could be related to family members' characteristics.

**TABLE 3.** Comparison of Cross-Path Coefficients ( $z$  scores) and Critical Ratios Between Mothers and Fathers

Associations	Mothers	Fathers	Critical Ratios
Conscientiousness– Coparenting	.24 <sup>†</sup>	.20*	$t(6) = 0.25$ , $p = .81$
Anxious Attachment– Coparenting	-.06	-.46***	$t(6) = 2.23$ , $p = .07$
Avoidant Attachment– Coparenting	-.41**	-.03	$t(6) = 2.32$ , $p = .06$
Coparenting–Family Alliance	.38***	.06	$t(6) = 1.68$ , $p = .14$

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Our study aimed to identify such parental, child, and coparental characteristics associated with FA.

#### **Parental Subsystem: Parents' Characteristics and FA**

Both attachment orientations and one personality trait (i.e., Conscientiousness) were indirectly associated with FA. First, the importance of parents' Conscientiousness in the triadic interactions could be explained by the setting of the method: The LTP is a structured play situation, which requires that parents and baby respect the structure of the play. Conscientiousness helps parents respect the frame of such a method. Another explanation is based on the importance of Conscientiousness at the time of the child's arrival in the parents' life. This period of life requires much planning concerning caregiving and the household as well as a structured and consistent parenting style for the child's development. Conscientiousness is typically a positive feature of parenting: Conscientious parents are supportive, responsive, and sensitive, and demonstrate exploratory and symbolic play with the child (Bornstein, Hahn, & Haynes, 2011). This kind of parental behavior brings consistency and structure to the family environment.

Second, parents' attachment orientations, especially Avoidant attachment in mothers and Anxious attachment in fathers, were negatively and indirectly associated with FA via coparenting. Previous research has shown that attachment patterns influence the different family subsystems. Thus, insecure people have more difficulties exhibiting sensitive and consistent parenting (Slade, Belsky, Aber, & Phelps, 1999) and satisfying romantic relationships (Crowell, Treboux, & Waters, 2002) than do secure individuals. More specifically, Anxious attachment is linked to greater anger and intrusiveness in parenting and romantic relationships (Adam, Gunnar, & Tanaka, 2004) while Avoidant attachment is associated with difficulty in providing supportive care to children and partner. In our study, we showed that attachment patterns were associated with family functioning. First, in mothers, Avoidant attachment is seen to be negatively associated with FA. As the primary caregiver, the mother has to be sensitive and very close to the baby (Cowan & Cowan, 1992). Avoidant mothers would be distant from the family and so could have some difficulties in assuming their caregiving role. Without this proximity, the child's development and family interactions could be damaged. Second, our results showed a negative association between fathers' Anxious attachment and FA. Just after childbirth, fathers can feel excluded from the family because of breast-feeding, a too-short paternity leave (i.e., compared to the mothers' leave), and perhaps also maternal gatekeeping (Mitchell-Box & Braun, 2012). This situation may not cause any trouble if the father does not tend to be anxiously attached. If he does, the feeling of exclusion is likely to alert father's anxious pattern of attachment, which may be harmful for family interactions.

Both mothers' and fathers' characteristics intervened in the process of construction of family interactions and development. Moreover, there has been an evolution in conception of gender roles (Perrone, Wright, & Jackson, 2009): Women and men are no longer constrained by the narrow roles of the woman-as-nurturer and the man-as-breadwinner. They have been able to define their identities more broadly by integrating career and family roles, leading, in our results, to significant associations between both mothers' and fathers' characteristics and FA. The biological and societal aspects of parenthood place the mother at the center of psychological and medical attention. This is clearly reflected in the number of parenting and family studies which have essentially focused on mothers. Fathers have been neglected in child developmental research (Cassano, Adrian, Veits, & Zeman, 2006) and family-based intervention in pediatric psychology (Phares, Lopez, Fields, Kamboukos, & Duhig, 2005). Therefore, one tends to think that mothers are more prone to influence family functioning than are fathers while this is not the case. Now, contrary to personality traits, parents' attachment orientations are differently associated with FA according to the parent's gender: Fathers' Anxious attachment and mothers' Avoidant attachment are related to FA while this is not the case for fathers' Avoidant and mothers' Anxious attachment.

Except for Conscientiousness, no other associations were found between parents' personality traits and FA. While per-

sonality traits influence parenting and relationships, their association was relatively weak with family functioning. How to interpret such results? One could imagine that parents' personality traits change over time due to childbirth. Yet, Galdiolo and Roskam (2014) showed that personality traits are relatively stable after childbirth. Second, Favez et al. (2013) showed that prenatal representations of family in parents predicted FA. Consequently, it seems that parental cognitions and representations would be more related to FA than would parents' personality traits. Other parental cognitions such as self-efficacy beliefs in association with FA could be analyzed. Finally, the estimates of parents' influence were relatively modest in magnitude. Now, as McCartney and Rosenthal (2000) reminded us, even small effects can be of theoretical and practical significance. Because the effects of personality and attachment accumulate over a family life, a focus on a single point in time (i.e., 16 months' postpartum) may underestimate the contribution of parents' characteristics to family interactions.

#### ***Coparenting: The Nerve Center of the Process of Construction of the FA***

Our results showed that perceptions of coparenting were mediators between parents' characteristics and FA, as found in Stright and Bales' (2003) study. In his ecological model, Feinberg (2003) mentioned that coparenting was at least to some extent the center about which family process evolves and a mediator of influence on important family outcomes. However, to our knowledge, the ecological model was not empirically tested. Our study tested a small part of the ecological model by including only parents' characteristics as main variables of influence. These results support Margolin, Gordis, and John's (2001) view that coparenting represents a core mechanism whereas parents' characteristics may represent indicators. Whereas indicators are variables statistically associated with a particular outcome, mechanisms are factors that explain this association. When developing prevention or intervention programs, it is obviously more effective to target the mechanism rather than a factor that may be a marker of risk but that is not a causal influence on outcomes (Feinberg & Kan, 2008). This gives professionals a key mechanism for making family interventions for three reasons (Margolin et al., 2001). First, because coparenting is essentially associated with the child's well-being and development rather than with marital problems, parents tend to be more invested in the psychological follow-up. Second, because coparenting concerns both mother and father, parents tend to feel less personal guilt and thus may better accept therapy. Third, coparenting is a malleable construct that allows intervention in parental behaviors and cognitions.

Note that our results only concerned the perceptions of coparenting of both mother and father rather than the observation of coparenting behaviors. First, fathers' and mothers' perceptions of coparenting were positively and moderately correlated, and both mothers' and fathers' perceptions of coparenting acted as a mediator in our model of study. Such a similarity between mothers'

and fathers' perceptions of coparenting was found in Solmeyer and Feinberg's (2011) study, which showed an absence of gender differences in the multilevel models on coparenting, depression, and parental adjustment. The lack of gender differences suggests that both mothers and fathers might benefit from prevention/intervention programs on coparenting.

Family group process represents a unique "reality" (P. Minuchin, 1985) notably cocreated by both coparents. It is therefore not surprising that FA was associated with perceptions of coparenting. McHale et al. (2000) found that fathers' and mothers' reports of coparenting explained significant variance in family-group-level dynamics. Consequently, family therapy allows therapists to have a direct access to perceptions of coparenting which are, according to our study, reliable indicators of family functioning.

### *Child's Temperament: Role in the Family Dynamics*

For methodological reasons, among the three dimensions of child's temperament, only NA and EC were investigated. Results have shown that NA and EC were not moderators in the association between parents' characteristics and FA. In fact, as underlined in the correlations, these temperamental variables were only weakly associated with FA. Moreover, while tested at the same moment (i.e., 12 months old), child's temperament and perceptions of coparenting were weakly correlated in our study. This result contradicted those of Laxman et al. (2013), which showed the moderated role of temperament in the association between parents' personality traits and coparenting, but was in accord with those of Stright and Bales (2003). How could we explain this absence of result concerning child's temperament? First, note that our results concerned only NA and EC and not all temperamental dimensions, and so whether Surgency could act as a moderator remains to be verified. Second, FA was assessed at 16 months' postpartum. At that time, the child is still sufficiently young that his or her temperament is competing with more stable and enduring variables such as coparenting and parents' characteristics in their association with family relations (Donnelly Cooper, 2011). Finally, Favez et al. (2012) found an interaction effect between child's temperament and patterns of FA, and showed that the impact of family relations on the child's development may be exerted differently according to a child's temperament. An interaction effect between child's temperament and marital quality also was found to explain perceptions of coparenting (Schoppe-Sullivan et al., 2007). Instead of explaining FA, child's temperament interacts with FA (or marital satisfaction) to explain part of his or her own development (or perceptions of coparenting).

### *Limitations and Practical Implications*

The first limitation concerns the measure of the child's temperament. For methodological reasons, only NA and EC were used in this study. Although the French translation of the IBQ-R was validated on an independent sample, its psychometric properties caused a problem in this study. Perhaps we should have used the

normal-sized version of the instrument rather than the short one: The measures might have been more precise. Moreover, one of the thorniest issues in parental reports is a lack of standardized objectivity (Kagan & Fox, 2006). We should use an external observation of the child's temperament, such as the Lab-TAB (Goldsmith & Rothbart, 1996). In part, this shortcoming is compensated for by the rich coverage of difficult-to-observe situations, and the evidence that reports possess validity (Rothbart et al., 1998). Similarly, the bias inherent in a single parent's rating may be mitigated by aggregation with the ratings of other observers such as the other parent in this study. Laboratory measures of temperament, on the other hand, although highly standardized and objective, may capture only a section of the child's behavior. Second, longitudinal cross-lagged studies should be used to understand the transactions, the reciprocal influences, and the direction of effects between child's temperament, perceptions of coparenting, and FA. Third, coparenting was assessed by means of a self-reported questionnaire which is actually a measure of parental representations of coparenting. Hence, it would be interesting to use observational assessment to evaluate the effectiveness of the mediated model. Fourth, our study was realized in a nonclinical sample; the replicability of the model could be done in a clinical sample. Perhaps other parents' characteristics and child's temperament would have a greater influence on coparenting and family interactions as compared to the parents in the nonclinical sample. Finally, other potential parents' characteristics could influence perceptions of coparenting and FA. For example, Favez et al. (2013) showed that fathers' prenatal representations of the family were associated with postnatal family interactions. By extension, we could investigate parental cognitions such as self-efficacy beliefs. Other mediators and moderators also could be included in the model, such as marital satisfaction, as in Schoppe-Sullivan et al. (2007). Extra familial variables could be explored as moderators in this model, such as environmental supports and stressors (Feinberg, 2003). Future research should address these limitations.

Two major practical implications are highlighted in this study. First, fathers as well as mothers should be included in the therapeutic process, and therapists should base their intervention on mothers' and fathers' different resources (i.e., their attachment orientations and Conscientiousness). Indeed, parents' strengths (i.e., individual characteristics) can protect coparenting and family interactions. For example, therapists can lean on a conscientious parental structure and consistency to restore family balance. Moreover, because of the continuity of these constructs, we may suppose that this influence endures across subsequent childbirths, so that therapists have some indication of risks and protective factors to take preventative measures. Second, this study identified coparenting relationships as core mechanisms for explaining family interactions. At this developmental stage (i.e., when the child is 16 months old), practitioners should focus on the coparenting system when working with families because couples may be more open to focusing on coparenting issues than on personal or marital issues and are likely to be invested in their child's development (Margolin et al., 2001). Further, it allows the parents to defocus on their



personal and marital difficulties and to focus on developing mutual support, solidarity, and proximity. It is particularly important, through prevention programs, to help families during the transition to parenting to establish healthy coparenting interactions early in their child's life. The best known preventive intervention developed for couples at the family formation stage is the intensive "Becoming A Family" project implemented by Cowan and Cowan (1992) and replicated by Feinberg (2002) (for more details, see Feinberg, 2002).

In sum, our research highlighted five important observations. First, FA was positively and directly associated with perceptions of coparenting. Second, FA was indirectly (i.e., via perceptions of coparenting) and positively associated with parents' Conscientiousness and negatively with Avoidant attachment in mothers and Anxious attachment in fathers. Third, child's temperament was not a moderator in the model of mediation. Fourth, except for Conscientiousness, no association was found between parents' personality traits and FA. Finally, coparenting seems to be the crossroads in the association between parents' characteristics and family functioning.

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