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A comparison of attachment representations to father and mother using the MCAST

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Abstract

The aim of the current study was to examine the factorial structure of the Manchester Child Attachment Story Task (MCAST), using a father doll to address the child's attachment representation to father. While the MCAST, a doll story completion task measuring attachment representations in early childhood, has been validated for use with a mother doll, its use for assessing attachment to father is relatively unexplored. Thus, an additional aim was to compare the factorial structure of the child's attachment representation to father and mother, respectively. We analyzed data from 118 first-grade children who underwent counterbalanced administration of the MCAST with a mother and father doll, respectively, within a period of three months. Exploratory factorial analysis revealed similar, three-factor solutions for attachment to father and mother, with a first factor capturing the child's (scripted) knowledge of secure base/safe haven and a second factor reflecting intrusive and conflict behaviour. The third factor was different in the father and mother representations, capturing self-care and role-reversal in attachment to father and disorganization in attachment to mother. Findings support the potential usefulness of the MCAST for exploring the father-child relationship and highlight a need for further research on early attachment representations to father.

INTRODUCTION

Children develop attachment relationships to their main caregivers by the end of the first year of life (Bowlby, 1969/1982), and attachment research that included fathers has shown that they form distinct attachment relations to each of their caregivers (e.g., Main, Kaplan & Cassidy, 1985; Main & Weston, 1981). Through continuous and repeated affective exchanges and interactions, children also develop representations of these relationships (internal working models, IWMs), which include relatively constant strategies for processing attachment-related information (Bretherton & Munholland, 2008), and impact on children's memory, cognition, affect regulation and language. Whilst the literature has extensively acknowledged the maternal contribution for the child's development of attachment security, the father's contribution was for a long time underexplored (Psouni, 2019). However, the father's importance is in recent years gaining attention as a result of cultural, social and economic changes in society influencing especially dual earner families, where fathers and mothers to a greater extend share the responsibility of children's upbringing (Lamb, 2010; Pleck, 2012; Bretherton, 2011; Palm, 2014). As mothers and fathers may interact with their children differently, the degree of comfort and sensitivity they can show towards the child may vary (Fox et al., 1991), which may result in differences in the child's attachment relationship to each parent. Attachment literature has acknowledged this possibility, suggesting that the quality in the child's caregiver-specific attachment relationships may in some cases be discordant (Dagan & Sagi, 2017). Comparisons of the importance of mother and father as caregivers, however, result in inconsistent results, suggesting the attachment relationship to the father to be less important (e.g., Lucassen et al., 2011), or influential in a different way (e.g., Steele & Steele, 2005), but more recent findings highlight unique

developmental benefits from the child's attachment to father, for instance with respect to control of aggressive behaviour, popularity among peers, self-worth, and - on a long term trajectory - internalizing and externalizing symptoms in adulthood (Groh et al., 2014; Kochanska & Kim, 2013; Lucassen et al., 2015; Sagi-Schwartz & Aviezer, 2005).

Although there is evidence that fathers begin to be more involved in caring for their children by early childhood (Cabrera, Fitzgerald, Bradley, & Roggman 2014), research regarding attachment to father in early childhood is scarce and not up to date (Bretherton, 2011; Di Folco & Zavattini, 2014; Psouni, 2019), apart from some recent contributions (Bacro & Florin, 2008; Bureau et al., 2017; Di Folco, Messina, Zavattini, & Psouni, 2017; Janse et al., 2017; Psouni, Di Folco, & Zavattini, 2015) all of which conclude the need for more research addressing the specific impact of the father-child attachment relationship to the child's development and mental health. Empirical information over the past years is in its nature mainly descriptive and concerns features of the father-child relationship, such as focus on play and risk-taking, and competing activities aimed at challenging emotion regulation, and the control of aggressive behaviour (Grossman et al., 2002; Flanders, Leo, Paquette, Pihl, & Séguin, 2009; Paquette, 2004). It is reasonable to suggest that a deeper investigation of the features of attachment to father is needed.

Early childhood is a sensitive developmental period when the attachment system undergoes a process of reorganization of how the needs of the child and the availability of caregiver support are negotiated. During this time, the goal of the child's attachment system is psychological availability of the caregiver, rather than physical proximity, requiring the development of mental and abstract strategies of

self-regulation when the caregiver is not available (Kerns, Tomich, Aspelmeier, & Contreras, 2000; Kerns, Tomich, & Kim, 2006). As attachment representations become more elaborate, enhanced by increased verbal and memory skills, narrative, rather than observational, methods, suitable for early infancy (e.g. the Strange Situation Procedure, SSP Ainsworth & Wittig, 1969), are required to tap into children's attachment representations of relationships (Psouni & Apetroaia, 2014). The main premise of such methods is that using narratives, children enact the IWMs of attachment as expression of relational themes, defences and coping strategies (Bretherton, Ridgeway, & Cassidy, 1990; Psouni & Apetroaia, 2014).

The Manchester Child Attachment Story Task (MCAST)

With regard to narrative techniques, doll story completion tasks represent a reliable approach for assessing attachment with very young and preschool aged children (Solomon & George, 2008; Warren, Emde, & Sroufe, 2000). One such measure is the Manchester Child Attachment Story Task (MCAST; Goldwyn, Stanley, Smith, & Green, 2000; Green, Stanley, Smith, & Goldwyn, 2000), a semi-projective story completion task developed to elicit children's narrative with respect to four attachment-related themes depicted in four vignettes. Using a furnished doll house and dolls, the vignettes are introduced, one at a time, for instance, placing the parent doll in the parental bedroom and the child doll in the child bedroom, in their beds, and then acting a situation where the child doll wakes up because of a nightmare. Given command of the dolls, the child is then asked to continue the story.

Green et al. (2000) reported evidence of good interrater reliability of the MCAST and stability over time. Goldwyn et al. (2000) reported concurrent validity with the mother's Adult Attachment Interview (AAI; Main, Goldwyn, & Hesse,

2002), the Separation Anxiety Test (SAT; Slough & Greenberg, 1990) and teacher ratings of the child's behaviour, while Di Folco et al. (2017) demonstrated concordance with a word prompt task, the Secure Base Script Test for children (SBST; Psouni & Apetroaia, 2014). As recently suggested (Psouni & Apetroaia, 2014), doll story-completion tasks may also be considered a measure of the child's scripted secure base knowledge in situations involving the activation of the attachment system. Indeed, in a recent study (Di Folco et al., 2017) with 5-to-7 year olds children, a secure base script knowledge compound reflecting the child's knowledge of parental availability and capacity of comfort in time of distress was derived from the MCAST, based on continuous scores from some of the MCAST scales. Unlike other doll-play story stem tasks, which do not distinguish among different patterns of insecurity and disorganization (Bretherton et al., 1990; Oppenheim, Emde, & Warren, 1997), the MCAST coding system provides a four-way categorical attachment classification (secure, avoidant, ambivalent, and disorganized), similar to the SSP (Ainsworth & Wittig, 1969), as well as continuous parent-specific scores.

The present study

As Bureau and Moss (2010) recently pointed out, most methods of assessment of attachment in childhood do not distinguish between mothers and fathers in coding criteria. In fact, few studies using story stems have included a father character, and even these studies did not specifically code for father attachment (Bernier & Miljkovitch, 2009; Miljkovitch, Danet, & Bernier, 2012; Page & Bretherton, 2001; Seven & Ogelman, 2013; Portu-Zapiraun, 2013). Separate MCAST administration addressing attachment to father specifically has only been carried out with two small

samples of late-adopted children (Barone & Lionetti, 2011; Piermattei, Pace, Tambelli, D'Onofrio, & Di Folco, 2017), and in a recent study on children's emotion understanding (Psychogiou et al., 2018). In the latter, attachment to mother and father, respectively, converged, while insecure father-child attachment was related to lower level of emotion understanding, supporting the unique contribution of father-child attachment for children's affect regulation. Yet, the construct structure for the MCAST administered to address the father-child attachment has not been explored.

Thus, the purpose of the current study was to explore the factorial structure of the MCAST administered with a father doll assessing attachment security in the father-child relationship, in order to reveal the important features of father-child attachment relationship as depicted in children's stories around the MCAST attachment themes. Understanding the construct structure of the MCAST when administered with respect to the child's attachment to father will not only provide information on the reliability and construct validity of the method for exploring attachment to father but also enhance our knowledge of features in the child's representation of attachment to father in early childhood. Further, we aimed at comparing this structure with the factor structure in the mother MCAST, when using the same MCAST themes.

Method

Participants

The sample included 118 first grade (M_{Age} of 75.20 months, SD= 10.67; range= 68.0-87.0 months) Italian-speaking children (59 boys, M_{Age} of 75.13 months, SD = 10.74 and 59 girls, M_{Age} of 75.27, SD =10.70), recruited from five primary schools in the city of Rome and surrounding area for a larger longitudinal study (Di Folco et al.,

2017). Only children who completed two separate administrations of the MCAST, with a mother and father doll, respectively, were included in this study. Children affected by psychiatric disorders, mental disabilities or behavioural problems referred from the local Health Service were excluded. Parents' mean ages were 38.7 years for mothers (SD = 3.90) and 43 years for fathers (*SD* = 5.42). Regarding parents, 75.5% of the mothers had an education corresponding to 7–12 years' full time studies, 24.5 % had qualifications corresponding over 15 years' full time study whereas 83.3% of fathers had an education corresponding to between 7 and 12 years of full time study, while 16.7 % had 15 or more years' fulltime study. 58.2% of mothers worked fulltime, 14.5% were employed part-time, while 27.3% were not employed at the time of the study. Among fathers, 94.4% worked fulltime and 5.6% were not employed. The average annual household income (ISTAT report 10th December 2012) was about 30,000 Euros (*SD* = 10,800), above average income for a family living in Northern Italy (24,600 Euro: ISTAT report 10 December 2012).

Materials

Attachment representations with respect to mother and father were assessed with the MCAST (Green et al., 2000; Goldwyn et al., 2000). The attachment-related themes depicted in the four vignettes are: nightmare, hurt knee, tummy ache and child gets lost in the shopping centre. A furnished, wooden house, a mother/father doll and a doll representing the child are used. The child is asked to complete the story introduced by the interviewer, using the dolls. For example, for the nightmare vignette, the interviewer says: "It is in the middle of the night and the mummy doll and the child doll are in their bed sleeping. It is all dark outside and quiet…you cannot hear any noise…At some point, the child doll wakes up "Ohh…I have had a

terrible nightmare! A terrible dream! I have had a nightmare…ohhhh….what a terrible dream! Could you show me and tell me what happens next?"

Children's stories and behaviour during the test are video recorded. Video and transcripts are scored according to a coding system (Green *et al.*, 2000/2009) based on the rating of ordinal scales (1 to 9) around four focal areas: The first area regards engagement of the child in the task and quality of arousal, meant at capturing the degree of the child's involvement in the task and his/her level of activation, respectively. The second area concerns attachment-related behaviours attributed to the child in the child's story. These include (a) proximity seeking, which represents the degree to which the child makes the child doll seek for proximity to the mother doll; (b) self-care, capturing the degree to which the child doll uses his/her own strategies to soothe him/herself; (c) role-reversal, capturing the degree to which a child doll is engaging in parenting the parent or in addressing parental needs; (d) assuagement, capturing the degree to which a child is soothed and comforted and caregiving behaviours attributed to the parent in the child's story; (e) warmth, capturing the degree to which affect expressed in the story; (f) sensitivity, reflecting the degree of appropriateness of parental responses to the child's distress, as depicted by the child's story; (g) disengagement, measuring the degree of non-involvement of the parents in the story; and (h) angry resistance/motivational conflict, capturing the degree of conflictual themes in child-parent interaction. The third area concerns narrative coherence, according to Grice maxims (quantity, quality, relevance, and manner) and finally, the fourth area concerns disorganization related to episodic phenomena and bizarre themes. The specifics of how to assign specific (1-9) scores for each ordinal scale are described in detail in the method manual (Green *et al.*, 2000/2009).

The MCAST coding is summarized in an overall attachment classification, assigned according to the following strategies underlined to each pattern of attachment: *Secure (B)*, when stories present a child-character who asks for support and caregivers who are capable of providing it; *Avoidant (A)*, when stories portray a caregiver who is stern and rejecting, and a child who displays self-care and/or displacement; *Ambivalent (C)*, if stories involve not effectively soothing or nurturing child-caregiver relationships, the parent-child interaction promoting instead an escalation of distress and anger and no positive resolution of the story; and *Disorganized (D),* where stories are characterized by incoherence and inefficacy in dealing with distress, total lack of strategy or rapid shifts between incompatible strategies. MCAST vignettes were coded by a reliable judge (trained by Professor Green). A second reliable judge coded 20% of videos. Interrater agreement was 89% (k = .82) for four-way (A, B, C, and D) attachment classifications. Internal consistency for the MCAST subscales was Cronbach's α = .72 MCAST-mother and Cronbach's α = .71 MCAST-father.

As a control measure, children's verbal intelligence was assessed using the verbal scales of the WISC-III (Weschler, 1991; Italian validation Orsini & Picone, 2006).

Procedure

The study was approved by the Research Ethical Committee at [xxx]. Permission by school principals was sought and written informed consent was provided by the parents. All children who participated also gave their consent. Individual MCAST administration took place in designated rooms at the children's schools, and each session lasted approximately 30 min. Children's attachment was tested with respect

to one parent in the first session. A second testing was carried out approximately 3 months later, where the MCAST was administered with respect to the other parent. Children's verbal ability was tested during the first MCAST administration session. The order of the two administrations was counterbalanced.

Statistical analysis

All statistical analysis was performed with SPSS 25 (IBM Corp., Armonk, NY, USA). Besides protocol placement into the classification categories (Secure, Ambivalent, Avoidant, and Disorganized), continuous subscale scores were generated and used in an exploratory factorial analysis (EFA), since no previous assumptions about a given structure could be made.

Shapiro-Wilk's test was used to test whether the sample was normally distributed on the continuous MCAST subscale scores. Normal distribution could not be achieved for any of the variables, despite rank transformation and logit transformation. Since factorial analysis is sensitive to non-normally distributed data, we used for the EFA the principal components method. When based on a robust correlation matrix, the principal components method represents an alternative to the Maximum Likelihood (ML) method for factor extraction as the latter is sensitive to skewed data and outliers (Briggs & McCallum, 2003; Pison, Rousseeuw, Filzmoser, & Croux, 2003).

To obtain the robust correlation matrix, the MCD (Minimum Covariance Determinant) estimator was used, as suggested by Pison et al. (2003). To avoid under-factoring, factors were selected according to the results provided from the scree plot and the Eigenvalue criterion considering Eigenvalues greater than 1. Since orthogonal rotation methods such as the Varimax do not allow factor correlation

(although items may load on more than one factor) and often produce structures that may be easily interpretable but unlikely to represent a plausible representation of reality (Costello & Osborne, 2005), oblique rotation (Oblimin) was selected (see also Zygmont & Smith, 2014). Oblimin rotation allows inter-factor correlations and increasing cross-loadings, producing a less rigid factor loadings pattern. Based on Comrey and Lee (1992) and Tabachnick and Fidell (2007) suggestions regarding loading cut-offs, item loadings ≤ 0.32 were considered as poor, <0.45 as fair, <0.55 as good, <0.63 as very good and <0.71 as excellent. Thus, only values $\geq .45$ were accepted. For each scale, the factor with the highest loading was considered.

Results

Preliminary analysis

Descriptive statistics for the MCAST father and mother scales, respectively, are reported in Table 1. The distribution of four-way attachment classifications according to the MCAST was 73.5% secure (B) (n = 86), 9.4% avoidant (A) (n = 11), 15.4% ambivalent (C) (n = 18) and 1.7% disorganized (D) (n = 2) with respect to mother, and 68.3% secure (B) (n = 82), 16.7% avoidant (A) (n = 20), 10% ambivalent (C) (n = 12) and 5% disorganized (D) (n = 6) with respect to father. This attachment distribution is consistent with meta-analytical data for this age group (Lucassen et al., 2011), but the proportion of secure attachments is somewhat higher than reported in other studies with the MCAST (Barone et al., 2009; Wan, Danquah, & Mahama, 2017). Correlation analyses were conducted to evaluate whether demographic variables (child's age, gender, and verbal intelligence) were related to the MCAST continuous subscales. Child age was not related to any of the MCAST subscales. Child gender was related to the MCAST father subscales of arousal ($r_s =$

.20, $p < .05$) and mentalizing ($r_s = .20$, $p < .001$) and to the MCAST mother

subscales of engagement ($r_s = .21$, $p < .05$), arousal ($r_s = .20$, $p < .05$), sensitivity ($r_s = .23$, $p < .05$), and mentalizing ($r_s = .35$, $p < .001$).

[Table 1 about here]

Mean scores for each ordinal scale computed across the four vignettes (nightmare, hurt knee, tummy ache, and child gets lost in the shopping centre) were considered for factorability. In line with previous praxis (Barone & Lionetti, 2012), scores across story stems for scales related to *proximity seeking* (child to mother and mother to child) ($r = .77$); caregiver's *Sensitivity* and *Warmth* ($r = .96$); *quality*, *quantity*, *relevance* and *manner* (ranging from $r = .58$ to $r = .73$) were also averaged. Prior to the EFA, the suitability of the data was assessed. Correlations among the variables were examined considering values higher than .30 as indicative of cohesion among the variables (Table 2). The Kaiser-Mayer-Oklin (KMO) test measure of sampling adequacy was about .77 (Kaiser, 1974) and the value of Bartlett's Test of Sphericity was significant ($p < .001$), thus factorability of the correlation matrix was confirmed (Tabachnick & Fidell, 2007).

[Table 2 about here]

Factor structure of the MCAST administered with father doll

Concerning the MCAST administration with father doll, a three-factor solution (Table 3) was found. When item cross-loading occurred, the highest load was considered and included in the factor interpretation. The scales of *Proximity* (child to father and father to child), *Assuagement* (both Child and Observer)*, Sensitivity*, *Coherence, Engagement*, *Arousal*, and *Mentalizing* loaded positively on **Factor 1**

12

(Eigenvalue 5.787, capturing 38.58% of variance in the data), whereas

Disorganization loaded negatively. *Conflict behaviour*, *Intrusive control,* and

Bizarre Themes loaded positively on **Factor 2** (Eigenvalue 2.487, capturing 16.58%

of variance) whereas *Self-care*, *Reversal*, and *Disengagement* loaded negatively on

Factor 3 (Eigenvalue 1.696, accounting for 11.30% of variance).

Only the first factor was significantly related with the child's Verbal IQ ($r =$

.27, $p < .01$). The internal consistency of the extracted factors (Cronbach's alpha

coefficients) were $\alpha_{Factor\ 1}$ = .78, $\alpha_{Factor\ 2}$ = .75 and $\alpha_{Factor\ 3}$ = .73.

[Table 3-about here]

Factor structure of the MCAST administered with mother doll

Concerning the MCAST administration with mother doll, a three-factor solution was

found. The scales of *Proximity* (child to mother and mother to child), *Assuagement*

(both Child and Observer), *Sensitivity, Coherence, Engagement, Arousal,*

Mentalizing loaded positively on **Factor 1** (Eigenvalue 5.850, capturing 39% of

variance in the data), whereas *Disengagement* and *Self-care* loaded negatively. The

scales of *Conflict behaviour, Reversal* and *Intrusive control* loaded positively on

Factor 2 (Eigenvalue 2.069, capturing 13.79% of variance), whereas

Disorganization and *Bizarre Themes* loaded positively on **Factor 3** (Eigenvalue

1.751, accounting for 11.67% of variance).

Both the first and third factor of the MCAST administered with a mother doll

was significantly related with Verbal IQ (Factor 1 $r = .31$, $p < .001$; Factor 3 $r = -.29$,

$p < .001$). Internal consistency (Cronbach's alpha coefficients) for each of the three

factors here was: $\alpha_{Factor\ 1}$ = .88, $\alpha_{Factor\ 2}$ = .51, and $\alpha_{Factor\ 3}$ = .54, suggesting poor

internal consistency for all but the first factor.

Based on the definition of the subscales that loaded on each factor, Factor 1 was named *"Child's (scripted) Knowledge of Secure Base/Safe Haven"*, Factor 2 was named *"Intrusive/Conflict Behaviour"*, and Factor 3 was named *"Disorganization"* with respect to attachment to mother and "*Self-care/ Reversal"* with respect to attachment to father.

Discussion

This study explored the factorial structure of the MCAST ordinal scales as they apply to an administration with a father doll, and elicited, for comparison, the factorial structure obtained from mother doll administration. The EFA revealed three-factor solutions for the ordinal scales, both regarding attachment to father and attachment to mother. The structures were partly similar, comprising a first factor tapping into the child's (scripted) knowledge of secure base/safe haven with respect to father and mother, respectively, and a second factor capturing the intrusive/conflict behaviour in the child-parent attachment relationship. The third factor was distinctively different in the two MCAST structures, summarizing features of disorganization in the structure concerning attachment representation with respect to mother, as compared to self-care and role-reversal in the structure concerning the child's attachment representation with respect to father.

To our knowledge, the present study is the first to describe the structure of the MCAST when used to assess father-child attachment. The three-factor MCAST structure when assessing mother-child attachment is in line with previous findings from Barone & Lionetti (2012) and Green et al. (2000). Unlike those studies, however, the present findings concern both attachment to father and attachment to

mother, revealing, for the first time, similarities and differences in the structure of the child's representations of attachment to each parent, respectively, as measured by the MCAST. By conceptualizing the mother-child and father-child attachment relationships not in isolation, but aside one another, it is possible to understand whether some responses, or representational features, are unique with a particular caregiver. Whilst some scholars may claim that it is unnecessary to force a distinction in the assessment of attachment to mother and father at this stage, recent evidence (Jansen, Bodden, Muris, van Doorn, & Granic, 2017) indicates the value of assessing the attachment relationship to each caregiver specifically.

Scripted knowledge of secure base in representations of attachment to mother and father

The first factor, termed *"Scripted Knowledge of Secure Base/Safe Haven"*, captured the largest amounts of variance in the data concerning the child's representations of both attachment to mother and attachment to father. It comprises the MCAST scales of arousal, sensitivity, care, proximity seeking, assuagement, coherence, and mentalizing, similar to previous findings regarding the mother-child attachment assessment with the MCAST (Barone & Lionetti 2012; Green et al., 2000). High scores on these MCAST scales suggest narratives reflecting the child's expectation that there exists a supportive and sensitive caregiver who can be relied upon, a realization that help by a competent and caring adult figure may be needed in order to move forward in times of difficulty, and a strategy of seeking proximity and physical contact as means of soothing (Psouni & Apetroaia, 2014). High score on these scales also typically lead to a secure classification of attachment in the MCAST (Green et al., 2000/2009).

It is promising for the suitability of the MCAST for assessing attachment to father in early childhood that the factor emerges both related to the mother-child attachment, and the father-child attachment assessments. Our findings suggest that, when using the MCAST stems with father doll, the task may equally capture the child's safe haven and secure base functioning, as the core feature of the attachment system (Waters & Cummings, 2000), indicating that the MCAST yields a "secure attachment" factor for father administration, as it does for mother administration. Our results are in line with previous studies suggesting at least partial concordance between mother-child and father-child attachment (Bacro & Florin, 2008; Booth-LaForce et al. 2006; Diener et al. 2008; Kochanska & Kim 2013; Di Folco et al., 2017), as well as with recent evidence that both mothers and fathers are regarded as secure base and safe haven (Kerns, Mathews, Koehn, Williams, & Siener-Ciesla, 2015). Moreover, our findings are in line with findings reported by Barone & Lionetti (2012) and Green et al. (2000), suggesting that the factor explaining most variance in MCAST subscale scores concerned attachment security and coherence.

The similarity in the first factor for the MCAST structure concerning representations of mother and father, respectively, may be thought of as originating from different sources. Both parents may be equally sensitive in parenting the child (Braungart-Rieker et al., 2014) or one parent may represent a positive model for the other (Fox, Kimmerly, & Schafer, 1991) or act as a buffer when the parental functioning of his/her partner is impaired or totally lacking. However, it cannot be excluded that children may be generalizing from the attachment relationship with the mother to the relationship with the father. This may be particularly likely in the present study, considering that the MCAST stems were not originally developed based on prototypical situations frequent in the father-child interaction, as also

16

suggested previously (Di Folco et al., 2017; Psychogiou et al., 2018).

Intrusive and conflictual behaviours in children's representations of attachment

The second factor based on both father and mother MCAST administration captured conflictual and intrusive controlling behaviours in the child's representations of the attachment relationships with the caregivers, with the additional feature of bizarre themes concerning attachment to father, and reversal concerning attachment to mother (both subscales denote features of disorganization). This finding is in line with Barone and Lionetti's study (2012) presenting a second factor representing an ambivalent-disorganized feature.

Controlling behaviour in 6-year-olds' doll story completion consists of either punitive behaviour toward the caregiver (e.g., the child giving orders to the caregiver, rejecting or derogating the caregiver) or caregiving behaviour (e.g., the child helps, assists, guides, encourages, or is overly cheerful or compliant toward the caregiver), the latter also known as "role reversal", implying the child stepping into the parental role (Main, Kaplan, & Cassidy, 1985; Solomon, George, & DeJong, 1995). Within the context of disorganization of attachment, reversal reflects fuzzy boundaries and roles, intrusiveness, over-protectiveness, and enmeshment (Jacobvitz, Morgan, Kretchmar, & Morgan, 1991). However, role reversal could also be seen as an organized strategy, reflecting the child's efforts to use an adaptive strategy to accomplish his/her attachment needs and closeness to the caregiver (Boldt, Kochanska, Grekin, & Brock, 2016). Notably, previous research has demonstrated that while role reversal in the form of caregiving behaviour in the child is associated with more helpless and passive parenting (Lyons-Ruth, Yellin, Melnick, & Atwood, 2005; Moss, Bureau, Beliveau, Zdebik, & Lepine, 2009), punitive

behaviour is more common when the child experiences parental hostility and intrusiveness (Solomon & George, 2008).

According to Main and Cassidy (1988), as children disorganized in infancy mature, they may organize their behavior in relation to the caregiver in a more predictable way, by consistently attempting to control it. Moreover, they may also be inclined to satisfy parental implicit needs and expectations in order to increase their perception of emotional security. Our findings align with this suggestion when considering the child's attachment relationship to the mother as captured by MCAST with a mother doll - the reversal feature indicating a tendency of the child to take care of the mother's needs, in addition to the conflict and intrusiveness features. However, considering the child's attachment relationship to the father, MCAST administration with the father doll indicates instead bizarre themes, positioning spots of attachment disorganization in the factor. Because conflictual behaviour in the father-child attachment relationship is still within the range of an insecure but organized strategy, these bizarre themes may not escalate into a disorganized pattern of attachment. Notably, in the only study so far concerning attachment disorganization with respect to father (Miljkovitch et al., 2012), disorganization of attachment related to the father's own experiences was transmitted to the child in the form of preoccupation of attachment. It is also possible that bizarre themes emerge as children struggle to give the father a role within story stems that do not reflect prototypical father-child attachment interactions (Di Folco et al., 2017; Psychogiou et al., 2018). Due to the shortage of research on disorganization of attachment to father, it is not possible to draw definitive conclusions on this finding.

Disorganized and self-care strategies

The third factor in the MCAST structures regarding father and mother administrations, respectively, differed. Concerning attachment to mother, the factor captured a pure disorganization factor with respect to mother, comprising the Total Disorganization and Bizarre Themes' subscales. This finding is not in line with previous studies as Barone and Lionetti (2012) found a factor related to appropriate child engagement (arousal, engagement, and assuagement), whereas Green et al. (2000) found scales coding anger and conflict behaviour loading on a third factor. Maternal conversation style has been proposed as a mechanism mediating the transmission of attachment and has indeed been shown to mediate in the transmission of attachment in mother-child dyads (Cyr, Dubois-Comtois, Pascuzzo, Béliveau, & Moss, 2014). In everyday conversation with the child, maternal conversation about previous or past experiences with the child may trigger unintegrated emotional experiences leading to inappropriate ways of regulating the child's own affective experiences. The negative correlation found in the present study, between attachment disorganization to mother and the child's verbal ability, may have remarkable effects on the child's organization of attachment, as captured at a representational level by the MCAST administered with mother doll.

Notably, this was not the case for attachment to father. The MCAST is composed of specific scales and clearly identifiable markers to detect attachment disorganization on a behavioural and narrative level, assessing attachment both in terms of pervasive collapsed strategy and/or of minor spots of a temporary collapsed existing organized strategy (Green et al., 2000). With respect to father, the Self-care and Disengagement strategies came together in the third factor, which reflects an organized, functional

adaptation strategy to the relationship with a caregiver who is however often emotionally unavailable and unresponsive to the child's attachment needs. These behaviours may later take the form of dismissive strategies within an organized, insecure attachment, including avoidance in seeking help and comfort in times of distress, and over-reliance in a strong self.

Overall, the difference in the factorial structure of the child's representation of attachment to mother and father, respectively, may suggest two different and salient features of the attachment relationship with the caregivers. While the disorganization of attachment to mother marks a collapse in the child's attachment strategy, the self-care shown in the child attachment to father may reflect the child's representation of the father as a companion and playmate (Paquette & Dumont, 2013). As Bureau et al. (2017) recently argued, the role of fathers is less prescribed in current society, compared to the maternal role, which is more tightly related to prioritising childcare above any other aspect of life. Alternatively, as the MCAST stems are built on vignettes eliciting caregiving situations where typically the mother has been the active caregiver, it may be more powerful in eliciting the child's attachment disorganization within the relationship with the mother.

Influences from verbal fluency

In line with recent studies (Bacro, 2012), our results suggested that the child's (scripted) knowledge of secure base/safe haven, both with respect to mother and father, was positively related with verbal IQ. On the contrary, attachment disorganization with respect to mother, identified in the third factor, was negatively related to verbal IQ. This may suggest that attachment disorganization has a detrimental impact on the development of the linguistic ability of the child.

20

Alternatively, it may also be the case that, when assessed with the MCAST, children who are less verbally skilled produce incoherent, unclear narratives, and more bizarre themes in their stories. Future research ought to further explore the possible link between the child's verbal abilities and the outcome of attachment assessment by story completion tasks as in the MCAST, and the assessment of linguistic ability may have to routinely be taken into account when administering story completion task tests, in order to support the discriminant validity of these measures in assessing attachment.

Limitations and future directions

The structure of the child-parent attachment representation based on the MCAST, as presented here, was not confirmed and validated against other established attachment measures. Albeit the novelty of findings on child-attachment to father provided by this study, this represents a limitation. Furthermore, the internal consistency for factor 2 "Intrusive and conflict behaviour" and factor 3 "Disorganization" for the MCAST administered using the mother doll was unsatisfactory. This may be due to influences from sample features, since participating children came from two-parent families with relatively high income and education and showed very little signs of attachment disorganization. The low internal consistency of these factors may also suggest that the factors are unstable at this age. To address this issue, further research is necessary on the factorial structure of the MCAST as related to other attachment measures and other developmental outcomes. Confirmatory factorial analysis is also necessary in order to confirm the structure of the MCAST as well as invariance testing.

Another limitation concerns contextual generalization of the use of the MCAST. The MCAST was developed for the administration with a mother doll and

in two-parent families. Thus, further research is needed to test its suitability for the assessment of attachment in children from one-parent families or from same-gender parents, given the current changes in family structure and society. As fathers are increasingly involved in the care and education of their children, it is also possible that a distinction between primary and secondary attachment figure, and the MCAST's capacity to accurately assess the quality in the child's attachment representation to caregivers with different caregiving roles, might be increasingly relevant. Unfortunately, no specific information was available in the present study regarding how parents divided parental tasks.

Rearing practices should be also taken into account, given that children in this sample were Caucasian and from two-parents, middle class families, living in a cultural context where mother figure is still dominant and influential in children's upbringing, thus any generalization of this finding has to be considered with caution. Other distal factors, such as parental socioeconomic status (Lickenbrock & Braungart-Rieker, 2015), parental involvement and marital functioning should be taken into account, as they may impact on the parent-child system in both distal and proximal ways (Cummings & Davies, 2010).

Recent literature (Bureau & Moss, 2010) claimed that it is necessary to develop specific methods for the assessment of child-father attachment, as the methods currently used are originally developed for the assessment of attachment to mother, the MCAST being one among them (Barone & Lionetti, 2012). On the other hand, using different methods for the assessment of child-mother and child-father attachment relationships, respectively, is likely to lead to difficulties in comparing these relationships with respect to features, developmental trajectories, and links to developmental outcomes. Along with other studies (Barone & Lionetti, 2011;

Piermattei et al., 2017), the present study findings suggest that the MCAST represents a useful measure in research and clinical settings, as it may provide insight into the child's attachment representations to both parents during early childhood and at transition to middle childhood. By combining features of an observational attachment measure, such as the SSP (Ainsworth & Wittig, 1969) with features of a semi-structured interviews, such as the Friends and Family Interview (FFI: Steele & Steele, 2005), the MCAST provides comprehensive insight into the child's attachment representations to both parents.

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References

Ainsworth, M. D. S., & Wittig, B. (1969). Attachment and exploratory behavior of one-year-olds in a Strange Situation. In B. Foss (Ed.), *Determinants of infant behaviour* (Vol. 4, pp. 111–136). London: Methuen.

Bacro, F. (2012). Perceived Attachment Security to Father, Academic Self-Concept and School Performance in Language Mastery. *Journal of Child and Family Studies*, *21*, 6, 992- 1002. https://doi.org/10.1007/s10826-011-9561-1

Bacro, F., & Florin, A. (2008). Spécificité des modèles internes operants: Les représentations d'attachement au pére et à la mère chez des enfants de 3 à 5 ans = Specificity of the internal working models: Attachment representations to mother and to father in 3- to-5-year-old children. *Enfance*, 60(2), 108–119.

Barone, L., & Lionetti, F. (2011). Attachment and emotional understanding: A study on late-adopted preschoolers and their parents. *Child: Care, Health & Development*, *38*(3), 690–696. doi:10.1111/j.1365-2214.2011.01296.x.

Barone, L., & Lionetti, F. (2012a). Attachment and social competence: a study using MCAST in low-risk Italian preschoolers. *Attachment & Human Development, 14*(4), 391-403. doi: 10.1080/14616734.2012.691653

Barone, L., & Lionetti, F. (2012b). Attachment and emotional understanding: a study on late-adopted pre-schoolers and their parents. *Child Care Health Dev, 38*(5), 690-696. doi: 10.1111/j.1365-2214.2011.01296.x

Braungart-Rieker, Zentall, S., Lickenbrock, D., Ekas, N., Oshio, T., & Planalp, E. (2014). Attachment in the making: Mother and father sensitivity and infants' responses during the still-face paradigm. *Journal of Experimental Child Psychology*, *125*, 63-84.

Bernier, A., & Miljkovitch, J. (2009). Intergenerational Transmission of Attachment in Father–Child Dyads: The Case of Single Parenthood *The Journal of Genetic Psychology, 170*(1), 31-51.

Boldt, L. J., Kochanska, G., Grekin, R., & Brock, L. R. (2016). Attachment in middle childhood: predictors, correlates, and implications for adaptation. *Attachment & Human Development*, *18*, 2, 115-140. DOI: 10.1080/14616734.2015.1120334

Booth-LaForce, C. L., Oh, W., Kim, A. H., Rubin, K. H., Rose-Krasnor, L. & Burgess, K. B. (2006). Attachment, self-worth, and peer-group functioning in middle childhood. A*ttachment and Human Development*, *8*, 309 –325. doi: 10.1080/14616730601048209

Bowlby, J. (1969, 1982). *Attachment and Loss.* Vol. 1: Attachment. New York: Basic

Books. Tr. it. Attaccamento e perdita. Vol. 1: L'attaccamento alla madre. Torino: Boringhieri, 1972.

Bretherton, I. (2011). Fathers in attachment theoryand research: a review. *Early Child Development & Care*, *180*(1–2), 9–23.

Bretherton, I., & Munholland, K. (2008). Internal working models in attachment relationships: Elaborating a central construct in attachment theory. In J. Cassidy, P.R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed.), pp. 102-127. Guilford, New York, NY.

Bretherton, I., Ridgeway, D., & Cassidy, J. (1990). Assessing internal working models of the attachment relationship: An attachment story completion task for 3-year-olds. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research, and intervention* (pp. 273–308). Chicago, IL: The University of Chicago Press.

Briggs, N. E., & MacCallum, R. C. (2003). Recovery of weak common factors by maximum likelihood and ordinary least squares estimation. *Multivariate Behavioral Research*, *38*, 25-56.

Bureau, J.-F., Martin, M. J., Yurkowski, K., Schmiedel, S., Quan, J., Moss, E., Deneault, A.-A., & Pallanca, D. (2017). Correlates of Child-Father and Child-Mother Attachment in the Preschool Years. *Attachment and Human Development*, *19*(2), 130-150. doi: 10.1080/14616734.2016.1263350

Bureau, J.-F., & Moss, E. (2010). Behavioural precursors of attachment representations in middle childhood and links with child social adaptation. *British Journal of Developmental Psychology, 28*(3), 657-677. doi: 10.1348/026151009x468062

Cabrera, N. J., Fitzgerald, H. E., Bradley, R. H., & Roggman, L. (2014). The ecology

of father-child relationships: An expanded model. *Journal of Family Theory &*
Review, *6*, 336–354. doi:10.1111/jftr.12054.

Costello, A. B., & Osborne, J. W. (2005) Best practices in exploratory factor
analysis: Four recommendations for getting the most from your analysis.
Practical Assessment, Research and Evaluation, *10*, 1-9.

Cummings, E. M., & Davies, P. T. (2010). *Marital conflict and children: An*
emotional security perspective. New York: Guilford.

Cyr, C., Dubois-Comtois, K., Pascuzzo, K., Béliveau, M. J., & Moss, E. (2014).
Transmission of Attachment at Preschool-Age: The Mediating Role of Mother-
Child Conversation Styles. *Journal of Child and Adolescent Behaviour*, 2, 171.
doi:10.4172/2375-4494.1000171

Dagan, O., & Sagi, S. A. (2018). Early attachment network with mother and
father: An unsettled issue. *Child Development Perspectives*.
doi:10.1111/cdep.12272

Diener, M. L., Isabella, R. A., Behunin, M. G. & Wong, M. S. (2008). Attachment to
mothers and fathers during middle childhood: Associations with child gender,
grade, and competence. *Social Development*,*17*,84–101. Doi:
https://doi.org/10.1111/j.1467-9507.2007.00416.x

Di Folco, S., Messina, S., Zavattini, G. C, & Psouni, E. (2017). Attachment to
Mother and Father at Transition to Middle Childhood. *Journal of Child and*
Family Studies, *26*(3), 721-733. doi: https://doi.org/10.1007/s10826-016-0602-7

Di Folco, S., & Zavattini G. C. (2014). La relazione d'attaccamento padre-bambino:
una rassegna della letteratura. *Giornale Italiano di Psicologia*, *1*, 159-190. doi:
10.1421/77211.

Flanders, J. L., Leo, V., Paquette, D., Pihl, R. O., & Seguin, J. R. (2009). Rough-and-

tumble play and the regulation of aggression: an observational study of father-child play dyads. *Aggress Behav, 35*(4), 285-295. doi: 10.1002/ab.20309

Fox, N., Kimmerly, N. L., & Schafer, W. D. (1991). Attachment to mother/attachment to father: A meta-analysis. *Child Development*, *62*, 210–225.

George, C., & Solomon, J. (2016). The Attachment Doll Play Assessment: Predictive Validity with Concurrent Mother-Child Interaction and Maternal Caregiving Representations. *Frontiers in Psychology* 7.

Goldwyn, R., Stanley, C., Smith, V., & Green, J. (2000). The Manchester Child Attachment Story Task: relationship with parental AAI, SAT and child behaviour. *Attachment & Human Development, 2*(1), 71-84. doi: 10.1080/146167300361327

Green, J., Stanley, C., Smith, V., & Goldwyn, R. (2000). A new method of evaluating attachment representations in young school-age children: the Manchester Child Attachment Story Task. *Attachment & Human Development, 2*(1), 48-70. doi: 10.1080/146167300361318

Grossmann, K., Grossmann, K. E., Fremmer-Bombik, E., Kindler, H., Scheuerer-Englisch, H., & Zimmermann, P. (2002). The Uniqueness of the Child–Father Attachment Relationship: Fathers' Sensitive and Challenging Play as a Pivotal Variable in a 16-year Longitudinal Study. *Social Development, 11*(3), 307-331.

Jacobvitz, D. B., Morgan, E., Kretchmar, M. D., & Morgan, Y. (1991). The transmission of mother – child boundary disturbances across three generations. *Development and Psychopathology*, *3*, 513 – 527.

Jansen, M., Bodden, D. H. M., Muris, P. E., van Doorn, M., & Granic, I. (2017). Measuring anxiety in children: The importance of separate mother and father reports. *Child & Youth Care Forum*, *46*, 5, 643-659. doi: http://dx.doi.org/10.1007/s10566-017-9402-5

Kerns, K. A., Mathews, B. L., Koehn, A. J., Williams, C. T., & Siener-Ciesla, S. (2015) Assessing both safe haven and secure base support in parent–child relationships, *Attachment & Human Development*, *17*, 4, 337-353, Doi: 10.1080/14616734.2015.1042487

Kerns, K. A., Tomich, P. L., Aspelmeier, J. E., & Contreras, J. M. (2000). Attachment-based assessments of parent-child relationships in middle childhood. *Developmental Psychology*, *36*, 614–626. doi:10.1037/0012-1649.36.5.614.

Kerns, K. A., Tomich, P. L., & Kim, P. (2006). Normative trends in children's perceptions of availability and utilization of attachment figures in middle childhood. *Social Development*, *15*, 1–22. doi:10.1111/j.1467-9507.2006.00327.x

Kochanska, G., & Kim, S. (2013). Early attachment organization with both parents and future behavior problems: from infancy to middle childhood. *Child Development, 84*(1), 283-296. doi: 10.1111/j.1467-8624.2012.01852.x

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*, 31-36.

Lamb, M. E. (ed.). (2010). *The role of the father in child development* (5th ed.). Hoboken NJ: Wiley.

Lickenbrock, D. M., & Braungart-Rieker, J. M. (2015). Examining antecedents of Infant Attachment Security with Mothers and Fathers: An Ecological System Perspective. *Infant Behavior and Development*, *39*, 173-187.

Lucassen, N., Tharner, A., Van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., Volling, B. L., Verhulst, F. C., Lambregtse-Van den Berg, M. P., & Tiemeier, H. (2011). The association between paternal sensitivity and infant–father attachment security: A meta-analysis of three decades of research. *Journal of Family Psychology*, *25*(6), 986–992. doi:10.1037/a0025855.

Lyons-Ruth, K., Yellin, C., Melnick, S., & Atwood, G. (2005). Expanding the

concept of unresolved mental states: Hostile/helpless states of mind on the adult

attachment interview are associated with atypical maternal behavior and infant

disorganization. *Developmental Psychopathology*, *17*, 1-23.

Main, M., Goldwyn, R., & Hesse, E. (2002). *Adult Attachment Scoring and

Classification Systems*.Version 7.0 Unpublished manuscript, University of

California at Berkeley.

Main, M., Kaplan, N., & Cassidy, J. (1985). Security in infancy, childhood, and

adulthood: A move to the level of representation. In I. Bretherton & E. Waters

(Eds.), *Monographs of the Society for Research in Child Development*, *50* (1-2,

Serial No. 209, pp. 66-106).

Main, M. & Hesse, E. (1990). Parents' unresolved traumatic experiences are related

to infant disorganized attachment status: Is frightened and/or frightening parental

behavior the linking mechanism? In Greenberg M.T., Cicchetti D. & Cummings

E.M. (Editors), *Attachment in the preschool years* (pp. 161-182). Chicago:

Chicago University Press.

Miljkovitch, R., Danet, M., & Bernier, A. (2012). Intergenerational transmission of

attachment representations in the context of single parenthood in France. *Journal

of Family Psychology, 26*(5), 784-792. doi: 10.1037/a0029627

Moss, E., Bureau, J. F., Beliveau, M. J., Zdebik, M., & Lepine, S. (2009). Links

between children's attachment behavior at early school-age, their attachment-

related representations, and behavior problems in middle childhood. *International

Journal of Behavioral Development*, *33*(2), 155–166.

doi:10.1177/0165025408098012

Oppenheim, D., Emde, R. N., & Warren, S. L. (1997). Children's narrative

representations of mothers: Their development and associations with child and

mother adaptation. *Child Development*, *68*, 127 – 138.

Orsini, A., & Picone, L. (2006). *WISC-III. Contributo alla taratura italiana*. Organizzazioni speciali: Firenze, ISBN: 8809047273.

Page, T., & Bretherton, I. (2001). Mother– and father–child attachment themes in the story completions of pre-schoolers from post-divorce families: do they predict relationships with peers and teachers? *Attachment & Human Development, 3*(1), 1-29.

Palm, G. (2014). Attachment Theory and Fathers: Moving From "Being There" to "Being With". *Journal of Family Theory Review*, *6*, 282–297. doi:10.1111/jftr.12045

Paquette, D. (2004). Theorizing the Father-Child Relationship: Mechanisms and Developmental Outcomes. *Human Development, 47*(4), 193-219. doi: 10.1159/000078723

Paquette, D., & Dumont, C. (2013). The father-child activation relationship, sex differences, and attachment disorganization in toddlerhood. *Child Development Research*, *13*, 1–9. doi:10.1155/2013/102860.Phares, V., Rojas, A., Thurston, I. B., & Hankinson, J. C. (2010). Including fathers in clinical interventions for children and adolescents. In M. E. Lamb (Ed.), *The role of the father in child development*, (pp. 459–485). Hoboken, NJ: Wiley.

Piermattei, C., Pace, C. S., Tambelli, R., D'Onofrio, E., & Di Folco, S. (2017). Late adoptions: Attachment security and emotional availability in mother-child and father-child dyads. *Journal of Child & Family Studies*, *26*, 8, 2114–2125. doi: 10.1007/s10826-017-0732-6

Pison, G., Rousseeuw, P. J., Filzmoser, P., & Croux, Ch. (2003). Robust Factor Analysis. *Journal of Multivariate Analysis*, *84*, 145-172.

Pleck, J. H. (2012). Integrating Father Involvement in Parenting Research. *Parenting: Science and Practice*, *12*, 2-3, 243-253.

Portu-Zapirain, N. (2013). Attachment Relationships with Fathers and Mothers during Early Chilhood. *Psychology, 04*(03), 254-260. doi: 10.4236/psych.2013.43A038

Psouni, E. (2019). The Influence of Attachment Representations and Co-parents' Scripted Knowledge of Attachment on Fathers' Caregiving Representations. *Attachment & Human Development*, 21(5), 485-509. doi: 10.1080/14616734.2019.1582598

Psouni, E., & Apetroaia, A. (2014). Measuring scripted attachmentrelated knowledge in middle childhood: the secure base script test. *Attachment & Human Development*, *16*, 22–41. doi:10.1080/14616734.2013.804329.

Psouni, E., Di Folco, S., & Zavattini, G. C. (2015). Scripted secure base knowledge and its relation to perceived social acceptance and competence in early middle childhood. *Scandinavian Journal of Psychology*, *56*(3), 341–348. doi:10.1111/sjop.12208.

Psychogiou, L., Nath, S., Kallitsoglou, A., Dimatis, K., Parry, E., Russell, A. E., Yilmaz, M., Kuyken, W., & Moberly, N. J. (2018). Children's emotion understanding in relation to attachment to mother and father. *British Journal of Developmental Psychology.* doi:10.1111/bjdp.12239

Sagi-Schwartz, A., & Aviezer, O. (2005). Correlates of attachment to multiple caregivers in Kibbutz children from birth to emerging adulthood: The Haifa Longitudinal Study. In K. E. Grossmann, K. Grossmann & E. Waters (Eds.), *Attachment from infancy to adulthood* (pp. 165–197). New York: Guilford Press.

Seven, S., & Ogelman, G. H. (2013). Attachment stability in children aged 6 to 9

years in extended and nuclear families. *Early Education & Development*, *23*(5), 766–780. doi:10.1080/10409289.

Slough, N. M., & Greenberg, M. T. (1990). Five-year-olds' representations of separation from parents: Responses from the perspective of self and other. *New Directions for Child and Adolescent Development*, 67–84. doi:10.1002/cd.23219904806

Solomon, J., & George, C. (2008). The measurement of attachment security in infancy and childhood. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of Attachment: Theory, Research, and Clinical Applications* (pp. 384-416). New York: The Guilford Press.

Solomon, J., George, C., & DeJong, A. (1995). Children classified as controlling at age six: Evidence of disorganized representational strategies and aggression at home and at school. *Development and Psychopathology*, *7*, 447–463.

Steele, H., & Steele, M. (2005). The construct of coherence as an indicator of attachment security in middle childhood: The Friends and Family Interview. In K. Kerns & R. Richardson (Eds.), *Attachment in middle childhood (pp 137–160)*. New York, NY: Guilford Press.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*. Fifth Edition. Boston: Pearson Education, Inc.

Wan, M. W., Danquah, A., & Mahama, S. (2017). Child-caregiver Attachment Representations in a Non-Western Context: The Feasibility and Cultural Equivalence of Story Stems in Urban Ghana. *Social Development*, *26*, 1, 59- 79.

Warren, S. L., Emde, R. N., & Sroufe, L. (2000). Internal representations: Predicting anxiety from children's play narratives. *Journal of the American Academy of Child and Adolescent Psychiatry*, *39*, 100 – 107.

Waters, E., & Cummings, E. M. (2000). A secure base from which to explore close relationships. *Child Development*, *71*, 164–172. doi:10.1111/1467-8624.00130

Wechsler, D. (1991). *WISC-III: Wechsler intelligence scale for children.* New York: The Psychological Corporation.

Zygmont, C., & Smith, M. R. (2014). Robust factor analysis in the presence of normality violations, missing data, and outliers: Empirical questions and possible solutions. *The Quantitative Methods for Psychology*, *10*(1), 40-55.