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(Article begins on next page)

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# Attachment Representation in Institutionalized Children: A Preliminary Study Using the Child Attachment Interview

Maria Zaccagnino, Martina Cussino, Alessandra Preziosa, Fabio Veglia and Antonella Carassa

The experience of being removed from one's home and the transition to a residential care system pose enormous challenges for a child. Substantial evidence has been found regarding severe developmental effects due to early exposition to extreme psychosocial and affective deprivation. The research on Bowlby's theoretical proposals has highlighted the link between insecure, disorganized and atypical attachment patterns and children both living in foster care facilities and adopted out of those institutions. The goal of this pilot study is to investigate the attachment representation in an Italian sample of children in middle childhood (9–13 years old) who have been removed from their homes.

**Method:** Two compared groups of children participated in this study. The first group was composed of 24 Italian children who had been removed from their homes. The second group, considered as the control group, was composed of 35 Italian children who had never been in foster care placement. The quality of children's attachment to their primary caregivers was assessed by the Child Attachment Interview, an innovative semi-structured interview that seeks to bridge the measurement gap identified in middle childhood.

**Results:** The children in foster care placement show a higher percentage of insecure and disorganized attachment representations and lower scores on the Child Reflective Functioning Scale.

**Conclusions:** The clinical implications and enhancements to effective intervention for foster children's caretaking are discussed. Copyright © 2014 John Wiley & Sons, Ltd.

## Key Practitioner Message:

- Attachment theory.
- Clinical implications of Attachment experiences.
- Assessment tools of Attachment in middle childhood.

**Keywords:** Institutional Care, Attachment, Middle Childhood, Child Attachment Interview

## INTRODUCTION

The experience of being removed from one's home and the transition to a residential care system pose enormous challenges for a child. By the time these young children enter the foster care system, they have experienced at least one major disruption in primary caregiver relationships, they have been exposed to maladaptive caregiving at an early age and they have often witnessed traumatic events (Dozier, Albus, Fisher, & Sepulveda, 2002; Simms, Dubowitz, & Szilagyi, 2000). Moreover, it is reasonable to assume that all stages of the transition to residential care embody a whole range of stress factors: (1) the period that precedes the intervention of the welfare authorities; (2) the interim 'countdown' period of uncertainty until

the child leaves his/her home when the child does not know anything about the residential home or what awaits him/her; and (3) the period of his/her arrival at the residential care facility, where the child feels alien and must, in addition to being separated from his/her parents, cope with and adjust to the new place, peer group and staff members who should serve as alternative caregivers (Finzi, Cohen, Sapir, & Weizman, 2000).

The intention behind removing children from their natural surroundings is to enable them to move and develop in a better-functioning environment (Finzi *et al.*, 2000). Residential placement is the most common solution in Italy, such as in many other European countries. In Italy, the child protection system stipulates that intervention measures must prioritize the child's upbringing in his/her family environment. The first intervention is designed to support the family, making available social resources to overcome the social, psychological and economic

problems that resulted in the child being removed. Hence, children and especially their families must receive support in cases of separation to promote return of children to their biological family home as soon as possible (with the help of family intervention programmes). In the case that a return to the family is not viable, children should be taken in by a new family (by using the resources of foster care and adoption). The residential care function pending a family reunification plan or incorporation into a new family should be brief and strongly focused on recovery and preparation for the transition. In this sense, a family model is preferred to Italian residential care for the care of children lacking an adequate family context. The model is based on the creation of such family-style units in order to create the proper environment for upbringing. This is considering the understanding that children need family-style, comfortable spaces with affective warmth and reference figures with whom they could form significant affective relationships.

Many studies state that childhood maltreatment can have profound and wide-ranging effects on later functioning, including anxiety, depression, post-traumatic stress disorder, dissociation, somatization, antisocial personality disorder and drug and alcohol abuse (Burnam *et al.*, 1988; Dubowitz, Black, Harrington, & Verschoore, 1993; Kaufman, 1991; Luntz & Widom, 1994; Pelcovitz *et al.*, 1994; Putnam, 1997; Widom, Ireland, & Glynn, 1995; Widom, 1999). Maltreated children were found to have difficulties both on the early indicators of mentalizing ability, such as joint attention and use of mental state language (Beeghly & Cicchetti, 2008; Rogosch, Cicchetti, Shields, & Toth, 1995), and on false belief understanding.

In fact, one of the original contributions of Bowlby's (1951) report to the World Health Organization was 'the claim that the causal link between placement at institutions and mental and behaviour problems was the deprivation of maternal love, which he subsequently elaborated as the attachment relationship' (Cyr, Euser, Bakermans-Kranenburg, & Van IJzendoorn, 2010). It has been shown that insensitive caregiving behaviours and high-risk ecological contexts are among the most important precursors involved in the development of attachment insecurity. Indeed, attachment is currently one of the key concepts most broadly used to build intervention programmes designed for high-risk, disadvantaged and/or maltreated children (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2003; Berlin, Ziv, Amaya-Jackson, & Greenberg, 2005; Oppenheim & Goldsmith, 2007).

So far, substantial evidence has been found regarding severe developmental effects due to early exposition to extreme psychosocial and affective environments (e.g., Rutter *et al.*, 2007; Zeanah *et al.*, 2009), and the research on Bowlby's theoretical proposals has highlighted the link between insecure, disorganized, atypical attachment patterns and children living in institutional care

and adopted out of institutions (e.g., Carlson, Cicchetti, Barnett, & Braunwald, 1989; Chisholm, 1998; O'Connor, Bredenkamp, & Rutter, 1999; Rutter *et al.*, 2007; Smyke, Dumitrescu, & Zeanah, 2002; Tizard & Rees, 1975; Vorria *et al.*, 2003; Zeanah & Smyke, 2008; Zeanah, Smyke, Koga, & Carlson, 2005). Child attachment is predictive of short- and long-term psychosocial adaptation and cognitive functioning in normative as well as clinical groups. Several studies have found associations between insecure attachment with the primary caregiver(s) in infancy—in particular, children showing disorganized behaviours—and poor social competence and peer relations, increased hostility and aggression, lower ego resilience, behaviour problems, stress dysregulation and poor cognitive performance in the preschool and pre-adolescent years (Lyons-Ruth, Connell, Zoll, & Stahl, 1987; Lyons-Ruth & Jacobvitz, 2008; Shaw & Vondra, 1995; Sroufe, Egeland, & Kreutzer, 1990; Sroufe, 1983; Stams, Juffer, & van IJzendoorn, 2002; Urban, Carlson, Egeland, & Sroufe, 1991; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). Closely related to attachment is reflective functioning. According to Fonagy, one of the defining qualities of the human mind, given its eminently interpersonal nature, is its capacity to take into account its own state and the mental state of others. This ability to reflect upon thoughts and feelings is constructed through an intersubjective process between child and parent. The effectiveness of the reflective function determines not only a coherently structured identity but also the quality and coherence of the reflective part of the self. This is why Fonagy believes that this capacity can fully emerge only in the presence of secure attachment: in the context of a secure or contained relationship, the child's affective signals are received and interpreted by the caregiver, who has the capacity to reflect upon the mental states underlying the child's distress (Fonagy *et al.*, 1991).

Thus, the goal of this present pilot study was to investigate the attachment representation and reflective functioning in an Italian sample of children in middle childhood (9–13 years old) who have been removed from their homes. We have to consider central conceptual and methodological issues concerning the peculiarities of middle childhood. In fact, during the middle childhood years, the goal of the attachment system is no longer considered to be the physical proximity but rather the representation of the availability of the attachment figure. Also, Furman and Simon (2004) underline that at this age, children seem to have independent working models of attachment in relation to their caregivers and not an integrated one (as expected in adulthood). To investigate the attachment organization, several instrument for early infancy (Strange Situation Procedure, Ainsworth, Blehar, Waters, & Wall, 1978) and adulthood (Adult Attachment Interview [AAI], George, Kaplan, & Main, 1985) were developed, but there is a gap for school-age children. In the current

investigation, we have used a high-quality interview measure of attachment collected directly from the children and coded in accordance with best practice. Thus, we assessed the Child Attachment Interview (CAI; Shmueli-Goetz, Target, Fonagy, & Datta, 2008; Target, Fonagy, & Shmueli-Goetz, 2003; Target, Shmueli-Goetz, Datta, & Schneider, 1999a). This instrument was ideally suited to evaluate the attachment relationship for middle childhood and adolescence (Borelli *et al.*, 2010; Scott *et al.*, 2011) and allowed us to have a separate classification derived for the child's relationship with each caregiver. This could be very useful clinically in order to help each caregiver better manage his/her resources in the relationship with the child. Moreover, the CAI encloses both narrative and behavioural measures of attachment, allowing us to capture disorganization. Investigating the attachment representations in children who have moved away from the family and who stay in residential home may pose new challenges in programming care interventions.

## METHODS

### *Participants*

Two compared groups of children participated in this study. The first group was composed of 24 Italian children who had been removed from their homes and spent, on average, 14.8 months in a residential foster home in northern Italy. They were removed from their homes for a period of 8–14 months ( $M = 11.16$ ; standard deviation [ $SD$ ] = 2.03) as a result of neglect and abuse. The group (Institutionalized Group [IG]) was composed of 12 boys and 12 girls; their ages ranged from 10 to 13 years ( $M = 11.26$ ;  $SD = 1.69$ ).

The second group was composed of 35 Italian children who had never been in foster care placement and were recruited from an elementary school in northern Italy. They were considered to be the control group (Never IG [NIG]). The NIG is composed of 18 boys and 17 girls; their ages ranged from 9 to 13 years ( $M = 10.69$ ;  $SD = 0.79$ ).

The exclusion criteria for both groups were child and caregiver that are not Italian mother tongue and child having a previously established learning disability, significant sensory loss or severe mental health problems (severe psychosis or schizophrenia). Moreover, the NIG family has never been incurred in court proceedings.

### *Measures*

#### *Attachment*

The quality of the children's attachment to their primary caregivers was assessed by CAI (Shmueli-Goetz, Target, Datta, & Fonagy, 2004; Target *et al.*, 1999a). This instrument, as a downward extension of the AAI (George *et al.*, 1985), is

a semi-structured interview for 7- to 13-year-old children. It is composed of 19 questions concerning the child's current and past experiences with primary caregivers (both in the same interview) and prompts the child to evaluate the quality of these relationships (e.g., 'What's it like to be with your mom/dad?', 'What happens when mom/dad gets upset or angry?' and 'Have you ever felt like your parents don't really love you?'). The interview lasts approximately 30–45 mins and is both videotaped and transcribed verbatim; both the contents of interview and behaviours are analyzed, taking into account, e.g., the child's behaviour, his/her expressed affective state, his/her stance towards the interviewer and any behavioural oddities and details occurring during the interview.

Each interview is coded on eight nine-point rating scales. Three scales (Preoccupied Anger, Idealization of Attachment Figure/s and Dismissal of Attachment) are rated separately for mother and father. The remaining scales are Emotional Openness, Use of Examples, Balance of Positive/Negative References to Attachment Figures, Resolution of Conflicts and Overall Coherence (for details, see Target *et al.*, 2003). As with the AAI, the overall narrative coherence score is a summary scale of the other ratings scales and measures regarding how the child's narrative is coherent and comprehensive. Similar to the AAI, this scale can be used as a dimensional measure of attachment security, with higher scores indicating greater security and lower scores indicating lower levels of security (Shmueli-Goetz *et al.*, 2004). By definition, children who are classified into one of the three insecure categories (dismissing, preoccupied and disorganized) have low coherence scores. Coders assign each interview an overall narrative coherence score, on the basis of the child's scores on the other state of mind scales; this score can then be used as a continuous measure of attachment security. Coding involves an assessment of the child's state of mind in respect to the attachment, not the actual experiences with their attachment caregivers. Therefore, coders are interested in identifying whether the child is generally able to describe experiences with caregivers openly or whether the child's descriptions are forced by one or more factors (e.g., idealization of parent) (Target *et al.*, 2003).

The final attachment classifications, determined independently for each parent, have the same names as those used for the three main categories of adult attachment: dismissing, secure and preoccupied, together with the disorganized category of infant attachment. Each child received one attachment classification for each parent. Moreover, we calculated the percentage of children that have the same classification for both parents, which we refer to as a combined classification. Generally speaking, children are classified as secure if they provide concrete examples that support the stated assessment of their relationships with their parents, appear emotionally open and can freely discuss positive and negative aspects of these

relationships (Target *et al.*, 2003). For example, to obtain a secure classification, the child must have been assigned a rating of approximately 5 or above on all scales except Idealization of Attachment Figure/s, Dismissal of Attachment and Preoccupied Anger, where a score of 3 or less is expected (Shmueli-Goetz *et al.*, 2004). Children are classified as dismissing if they report having little or no memory of their experiences with their parents or if they grossly idealize their relationships with caregivers. Children are classified as preoccupied if they become overtly angry to the point where they lose track of the interview during a discussion of their caregivers or if they talk extensively about topics unrelated to the interview (Shmueli-Goetz *et al.*, 2004; Target *et al.*, 2003). Similar to the AAI, children are classified as disorganized as the primary classification if, when discussing loss, trauma or extremely frightening experiences, they behave different from their typical style of conversation. For the CAI coding, the following indices are taken into account as indicative of a disintegration or breakdown: sudden and marked switches in affect; interrupted speech (e.g., freezing or long, unexplained pauses); emotion states that are incompatible with the context and content of the topic discussed; bizarre and nonsensical descriptions of events; bizarre associations or catastrophic images; mixing up people repeatedly in the telling of a story without correcting the errors; talking about someone who is dead as though he is alive or more generally, displaying a hostile, punitive or controlling stance towards the interviewer (Shmueli-Goetz *et al.*, 2004; Target *et al.*, 2003).

High test-retest reliability of both scale scores and attachment classifications is demonstrated at 3 months ( $\alpha$ 's 0.74–1.00) and 1 year later ( $\alpha$ 's 0.72–0.79). In addition, internal consistency ( $\alpha$ 's ranged from 0.84 to 0.92 for two-way, 0.84 to 0.85 for three-way and 0.74 to 0.89 for four-way classifications) of the scale scores and classifications and inter-rater reliability (0.92 for two-way, 0.84 for three-way and 0.83 for four-way classifications) and validity of the measure have been determined with both clinical and normative samples (Humfress *et al.*, 2002; Shmueli-Goetz *et al.*, 2008; Target *et al.*, 2003). CAI classification correlated with the child's attachment security as measured in the Separation Anxiety Test (Wright, Binney, & Smith, 1995), maternal AAI classification (Shmueli-Goetz *et al.*, 2008; Target *et al.*, 2003) and measures of social functioning (Shmueli-Goetz *et al.*, 2008). Finally, CAI classification is not related to age, sex, socio-economic status, ethnicity, verbal IQ, expressive language ability or whether the child lives with one or two parents (Target *et al.*, 2003).

Interviews were administered by two female post-doc researchers. By using videotapes and transcriptions, interviews were coded by two researchers, M. Z. and M. C., who had been certified as reliable for coding the CAI and

the AAI. The interviews were coded by researchers who had not conducted the interviews in order to avoid any coding contamination. Coding was carried out blind in regard to whether children came from the IG or NIG. Each interview was coded by one person, and difficult cases were discussed and resolved between the two coders. Interviews were rated on the nine scales and then were classified into one of four categories in respect to each caregiver: secure, dismissing, preoccupied and disorganized. According to CAI protocol, interviews classified as disorganized were also given a secondary organized classification. Children's attachment to mother and father were rated independently.

In this sample, we assessed inter-rater agreement for the main classification using the kappa statistic, which is a standard measure of agreement between independent coders on a categorical judgment. The two coders jointly coded 36 interviews (60% of sample, 15 from the IG group and 21 from the NIG group) rating mother and father independently, and the inter-rater reliability was excellent (IG group, classification to the mother: three-way,  $\kappa = 0.89$ ,  $p < 0.001$ ; four-way,  $\kappa = 0.86$ ,  $p < 0.001$ ; classification to the father: three-way,  $\kappa = 0.86$ ,  $p < 0.001$ ; four-way,  $\kappa = 0.84$ ,  $p < 0.001$ . NIG group, classification to the mother: three-way,  $\kappa = 0.90$ ,  $p < 0.001$ ; four-way,  $\kappa = 0.87$ ,  $p < 0.001$ ; classification to the father: three-way,  $\kappa = 0.90$ ,  $p < 0.001$ ; four-way,  $\kappa = 0.86$ ,  $p < 0.001$ ).

## Procedures

Children's parents (or the people that have the parental authority) were asked to sign a consent form for their children to participate in a study about social and emotional development in childhood: the legal consent was collected by the professional staff (IG) and by teachers (NIG).

Institutionalized Group children were recruited from three residential care placements located in northern Italy, each of them composed of 8–10 children and four foster home operators. Data were collected over 4 months (February–May 2011) as, in that period, staff turnover was generally less marked than in other periods of the year. NIG Children were recruited from an elementary school located in northern Italy. Data were collected over a 5-month period (January–May 2011).

All the children were administered the CAI (Target *et al.*, 1999a) to assess the child attachment to each parent.

The interviewer initially explained the study, ensuring that the child felt at ease and he/she was willing to take part. The interviews were conducted in a private room in the residential care home and in an empty classroom in the elementary school. The length of the interview ranged from 20 mins to 1 hour. Most interviews were around 10 mins. Every session was audio recorded and videotaped.

## STATISTICAL ANALYSIS

Frequency analysis was used to test nominal and categorical variable distribution; the chi-square test was used to test nominal and categorical variables. Analysis of variance was used to test normally distributed interval and ratio variables. Finally, Pearson correlation coefficient was used to test association between normally distributed interval and ratio variables.

An analysis was considered statistically significant if  $p \leq 0.05$ .

The study procedures were supervised and are guaranteed, by F. V. and A. C. Statistical analysis using SPSS 21.0 for Windows was carried out by M. C. and M. Z.

## RESULTS

### Attachment Classifications

The distribution of attachment classifications in the NIG (N=35; Table 1) was broadly in line with distributions reported in other studies (Ainsworth *et al.*, 1978; van Ijzendoorn & Sagi, 1999). A high percentage of children was classified as secure in respect to both mother and father (22 [62.9%] and 20 [57.1%], respectively, and 19 [61.3%] when combined); there was a predominance of the dismissing classification within the insecure group (8 [22.8%] for mother, 11 [31.5%] for father and 8 [25.7%] when combined). The frequency of preoccupied attachment was low, 3 (8.6%) for mother, 2 (5.7%) for father and 2 (6.5%) when combined. All children (2 [5.7%]) coded as disorganized with one parent were also disorganized with the other.

In the IG, a high proportion of children were classified as insecure with respect to both mother and father

(21 [91.3%] and 16 [88.9%], respectively, and 15 [88.2%] when combined); in the insecure group, children were for the most part classified as dismissing (19 [82.6%] for mother, 14 [77.8%] for father and 13 [76.4%] when combined), and no child was classified as preoccupied; the 8.7% (2) of the sample was classified as primary disorganized with respect to mother and 11.1% (2) with respect to father (2 [11.8%] when combined; Table 1).

The NIG shows a higher percentage of secure attachment representations and a lower percentage of insecure representations in comparison with the IG, for both mother ( $\chi^2 = 16.78$  [1,  $n = 58$ ];  $p \leq 0.00$ ), father ( $\chi^2 = 11.56$  [1,  $n = 53$ ];  $p \leq 0.01$ ) and for parents combined ( $\chi^2 = 10.94$  [1,  $n = 48$ ];  $p \leq 0.01$ ). This result was replicated when we considered three-way attachment classifications: for mother ( $\chi^2 = 24.01$  [2,  $n = 58$ ];  $p \leq 0.00$ ), for father ( $\chi^2 = 14.31$  [2,  $n = 53$ ];  $p \leq 0.01$ ) and for both parents combined ( $\chi^2 = 16.99$  [2,  $n = 45$ ];  $p \leq 0.00$ ). Furthermore, when we considered four-way attachment classifications, the NIG had a lower percentage of disorganized attachment representations than the IG: for mother ( $\chi^2 = 22.63$  [3,  $n = 58$ ];  $p \leq 0.00$ ), for father ( $\chi^2 = 12.96$  [3,  $n = 53$ ];  $p \leq 0.01$ ) and for both parents combined ( $\chi^2 = 15.58$  [3,  $n = 45$ ];  $p \leq 0.01$ ).

No gender differences were observed in the two samples.

### Child Attachment Interview Scales

By using the Pearson  $r$  coefficient, we found correlations between CAI Scales (Table 2), though most of them were expected (Shmueli-Goetz *et al.*, 2008). In fact, the highest correlations, in both groups, were found between Overall Coherence and the scales associated with attachment

Table 1. Distribution of attachment classifications using the Child Attachment Interview

Attachment	Three-way classification			Four-way classification			
	Secure	Dismissing	Preoccupied	Secure	Dismissing	Preoccupied	Disorganized
IG							
Mother ( $n = 23$ )							
$n$ (%)	2 (8,7)	21 (91,3)	0 (0)	2 (8,7)	19 (82,6)	0 (0)	2 (8,7)
Father ( $n = 18$ )							
$n$ (%)	2 (11,1)	16 (88,9)	0 (0)	2 (11,1)	14 (77,8)	0 (0)	2 (11,1)
Combined							
$n$ (%)	2 (11,8)	15 (88,2)	0 (0)	2 (11,8)	13 (76,4)	0 (0)	2 (11,8)
NIG							
Mother ( $n = 35$ )							
$n$ (%)	22 (62,9)	9 (25,7)	4 (11,4)	22 (62,9)	8 (22,8)	3 (8,6)	2 (5,7)
Father ( $n = 35$ )							
$n$ (%)	20 (57,1)	12 (34,3)	3 (8,6)	20 (57,1)	11 (31,5)	2 (5,7)	2 (5,7)
Combined							
$n$ (%)	19 (61,3)	9 (29,0)	3 (9,7)	19 (61,3)	8 (25,7)	2 (6,5)	2 (6,5)

Note: Each child received one attachment classifications for each parent. Moreover, we calculated also the percentage of children that have the same classification for both parents, namely, combined.

security (Emotional Openness [IG:  $r=0.80$ ,  $p \leq 0.00$ ; NIG:  $r=0.89$ ,  $p \leq 0.00$ ], Balance of Positive/Negative References to Attachment Figures [IG:  $r=0.77$ ,  $p \leq 0.00$ ; NIG:  $r=0.84$ ,  $p \leq 0.00$ ], Use of Examples (IG:  $r=0.74$ ,  $p \leq 0.00$ ; NIG:  $r=0.91$ ,  $p \leq 0.00$ ) and Resolution of Conflicts [IG:  $r=0.68$ ,  $p \leq 0.00$ ; NIG:  $r=0.87$ ,  $p \leq 0.00$ ]). Also, the Child Reflective Functioning (CRF) Scale was strongly correlated with these scales: Overall Coherence (IG:  $r=0.85$ ,  $p \leq 0.00$ ; NIG:  $r=0.73$ ,  $p \leq 0.00$ ), Emotional Openness (IG:  $r=0.84$ ,  $p \leq 0.00$ ; NIG:  $r=0.69$ ,  $p \leq 0.00$ ), Balance of Positive/Negative References to Attachment Figures (IG:  $r=0.75$ ,  $p \leq 0.00$ ; NIG:  $r=0.60$ ,  $p \leq 0.00$ ), Use of Examples (IG:  $r=0.69$ ,  $p \leq 0.00$ ; NIG:  $r=0.70$ ,  $p \leq 0.00$ ) and Resolution of Conflicts (IG:  $r=0.55$ ,  $p \leq 0.00$ ; NIG:  $r=0.71$ ,  $p \leq 0.00$ ).

Regarding the mean CAI Scales scores for IG and NIG, the IG consistently scored significantly lower on the scales associated with attachment security: Emotional Openness ( $F=34.39$ ;  $p \leq 0.00$ ), Balance of Positive/Negative References to Attachment Figures ( $F=25.87$ ;  $p \leq 0.00$ ), Use of Examples ( $F=27.68$ ;  $p \leq 0.00$ ) and Overall Coherence ( $F=41.14$ ;  $p \leq 0.00$ ). Also, the IG scored higher at scales associated to attachment insecurity, such as Dismissal of Attachment ( $F=104.66$ ;  $p \leq 0.00$  for mother and  $F=41.15$ ;  $p \leq 0.00$  for father) and Idealization of Attachment Figure/s ( $F=32.77$ ;  $p \leq 0.00$  for mother and  $F=17.31$ ;  $p \leq 0.00$  for father; Table 3).

Additionally, for the CRF Scale, the IG scored lower ( $F=61.24$ ;  $p \leq 0.00$ ). As we would have expected, in both groups, the secure children were the highest-scoring group at the CRF Score, and their mean scores were significantly different from those of the insecure groups ( $F=78.63$ ;  $p < 0.01$  for mother and  $F=53.29$ ;  $p < 0.01$  for father).

Table 3. Means and standard deviations for Child Attachment Interview Scales in Never Institutionalized Group and Institutionalized Group

Scale	Total ( $n=59$ )		NIG ( $n=35$ )		IG ( $n=24$ )		ANOVA ( $df=1, 57$ )
	M	SD	M	SD	M	SD	
EO	4.10	1.95	5.09	1.61	2.67	1.46	34.39**
BAL	4.07	1.72	4.86	1.65	2.92	1.06	25.87**
UoE	4.36	1.98	5.29	1.71	3.00	1.53	27.68**
PA-M	1.50	1.45	1.69	1.79	1.22	0.60	1.45
PA-F	1.43	1.26	1.63	1.52	1.06	0.24	2.52
ID-M	3.60	2.58	2.34	1.94	5.52	2.25	32.78**
ID-F	3.45	2.78	2.46	2.32	5.39	2.64	17.31**
DS-M	3.50	2.57	1.83	1.54	6.04	1.52	104.66**
DS-F	3.42	2.49	2.23	1.94	5.72	1.74	41.16**
RES	3.98	1.59	4.69	1.55	2.96	0.99	23.18**
COH	4.15	1.54	4.97	1.32	2.96	0.95	41.14**
CRFs	4.03	1.73	5.06	1.14	2.54	1.32	61.24**

Note: NIG = Never Institutionalized Group. IG = Institutionalized Group. SD = standard deviation. ANOVA = analysis of variance.  $df$  = degrees of freedom. EO = Emotional Openness. BAL = Balance of Positive/Negative References to Attachment Figures. UoE = Use of Examples. PA-M/F = Preoccupied Anger with respect to Mother/Father. ID-M/F = Idealization with respect to Mother/Father. DS-M/F = Dismissal with respect to Mother/Father. RES = Resolution of Conflicts. COH = Overall Coherence. CRFs = Child Reflective Functioning scale.

\*\* $p \leq 0.00$ .

\* $p \leq 0.05$ .

## DISCUSSION

The data of this preliminary study show that the NIG attachment distribution is similar to previous investigations, assessed by CAI (Borelli *et al.*, 2010; Shmueli-Goetz *et al.*, 2008). These results are very encouraging in respect to the possibility of using CAI to evaluate attachment representations in school-aged children.

Table 2. Correlation matrix for Child Attachment Interview Scales for Never Institutionalized Group above the diagonal ( $n=35$ ) and Institutionalized Group below the diagonal ( $n=24$ )

Scale	1	2	3	4	5	6	7	8	9	10	11	12
1. EO	—	0.88**	0.95**	-0.35*	-0.31	-0.37*	-0.40*	-0.49**	-0.48**	0.80**	0.89**	0.69**
2. BAL	0.82**	—	0.83**	-0.38*	-0.34*	-0.35*	-0.41*	-0.44**	0.38*	0.74**	0.84**	0.60**
3. UoE	0.72**	0.64**	—	-0.37*	-0.34*	-0.38*	-0.40*	-0.53**	-0.43*	0.84**	0.91**	0.70**
4. PA-M	0.23	0.00	0.13	—	0.70**	-0.27	-0.25	-0.21	0.00	-0.51**	-0.40*	-0.28
5. PA-F	0.02	0.01	-0.05	0.64*	—	-0.03	-0.27	-0.08	-0.19	-0.51**	-0.34*	-0.29
6. ID-M	-0.58**	-0.54**	-0.32	-0.36	0.15	—	0.64**	0.40*	0.13	-0.21	-0.34*	-0.25
7. ID-F	-0.39	-0.49*	-0.03	0.09	-0.13	0.33	—	0.36*	0.19	-0.15	-0.41*	-0.29
8. DS-M	-0.14	-0.20	-0.22	0.44*	0.15	-0.06	0.12	—	0.69**	-0.34*	-0.54**	-0.53**
9. DS-F	-0.46	-0.29	-0.39	-0.09	0.04	0.39	0.02	0.60*	—	-0.30	-0.54**	-0.38*
10. RES	0.64**	0.50*	0.60**	0.16	0.21	-0.28	-0.05	-0.52*	-0.69**	—	0.87**	0.71**
11. COH	0.80**	0.77**	0.74**	-0.08	-0.03	-0.23	-0.32	-0.47*	-0.58*	0.68**	—	0.73**
12. CRFs	0.84**	0.75**	0.69**	-0.05	0.06	-0.27	-0.40	-0.23	-0.36	0.55**	0.85**	—

Note: EO = Emotional Openness. BAL = Balance of Positive/Negative References to Attachment Figures. UoE = Use of Examples. PA-M/F = Preoccupied Anger with respect to Mother/Father. ID-M/F = Idealization with respect to Mother/Father. DS-M/F = Dismissal with respect to Mother/Father. RES = Resolution of Conflicts. COH = Overall Coherence. CRFs = Child Reflective Functioning scale.

\*\* $p \leq 0.00$ .

\* $p \leq 0.05$ .



Previous studies assessing attachment, conducted on 'at risk' populations, mainly showed a prevalence of an insecure disorganized attachment as a result of early disadvantage and/or traumatic experiences (Crittenden, 1988). Abused children tend to develop a disorganized attachment in percentages ranging from 45% (as shown in the study of Lyons-Ruth, Connell, & Zoll, 1989) to 82% (as stated in the study of Carlson *et al.*, 1989), versus only 17% of the control sample, despite coming from similar socio-economic conditions. Van IJzendoorn and Bakermans-Kranenburg (2010) emphasized that a situation of abusive parenting is not the only factor promoting the disorganization of the attachment system, the difficult conditions that characterize institutions and communities may have an effect as well: results of their study showed that 66% of children living in institutions have developed a disorganized attachment, compared with 25% of non-institutionalized children.

Differently from the study of Shmueli-Goetz *et al.* (2008), our IG sample shows a higher percentage of insecure attachment. In fact, in both studies, samples are at high risk; the difference is that our IG sample is composed of maltreated/abused children living in residential homes. In accordance with studies that show a higher percentage of organized-insecure and disorganized attachments in samples of maltreated/abused children as compared with high-risk non-maltreated children samples (Barnett, Ganiban, & Cicchetti, 1999; Carlson *et al.*, 1989; Crittenden, 1988; Cyr *et al.*, 2010; Egeland & Sroufe, 1981; Lamb, Gaensbauer, Malkin, & Schultz, 1985; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Valenzuela, 1990; Vorria *et al.*, 2003), we hypothesized that the child maltreatment and abuse have a strong impact on attachment organization. These negative experiences create fright without solution for a child because the attachment figure, whom the child would approach for protection in times of stress and anxiety, is at the same time the source of fright, whether this attachment figure is the perpetrator, a potential perpetrator (in cases of sibling abuse) or failing to protect the child against the perpetrator (Hesse & Main, 1999, 2000, 2006). Moreover, as suggested by Vorria *et al.* (2003), the IG children have to cope with the difficulties of establishing attachment bonds with new caregivers, considering the features of the residential home setting (e.g., many children, few caregivers).

In accordance with Shmueli-Goetz *et al.* (2008), the low representation of the preoccupied classification in both samples (IG and NIG) in this research reflects the difficulties in identifying preoccupation. An alternative explanation may be due to the sample's small size or that preoccupation is less common in middle childhood. Similarly, Main and Cassidy (1988) and Wartner, Grossmann, Fremmer-Bombik, and Suess (1994), in previous studies using behaviourally derived classifications, were unable to include children considered ambivalent-dependent, maybe due to the

inadequate sample numbers. These findings are similar to the study of Zeanah *et al.* (2005) on attachment conducted on a sample of institutionalized children in Romania ( $n = 95$ ).

Specifically, the few NIG subjects classified as preoccupied were neither angry, confused nor fearfully absorbed in intrusive traumatic memories (as some adult participants in the AAI); rather, preoccupation was expressed in negative, absorbing, repetitive and often depressing memories (similar to the 'inchoate negativity' [Mary Main & Goldwyn, 1998, p. 168] of participant interviews coded as Preoccupied in the AAI). The problem is that these children might currently be miscoded as Secure because of their extensive examples, emotional openness and relatively coherent descriptions. Because Shmueli-Goetz *et al.* (2008) have seen relatively few children that show this form of preoccupation, they wanted to add a new scale to the coding system in order to capture this excessively absorbed style of preoccupation and thus to address, at least in part, the difficulties in identifying more clearly those who show a preoccupied strategy. In the new version of the manual of coding and classification (Shmueli-Goetz, Target, Datta, & Fonagy, 2011), they did not add a new scale but rather a collection of possible indicators of this type of preoccupation such as preoccupation with morbid themes, rumination, passivity and so on. If markers are sufficiently strong, children will be assigned to the Preoccupied classification, even in the absence of preoccupied anger scores.

The lack of gender differences is interesting and intriguing given the mixed results in previous studies in middle childhood using different methodologies. In fact, there is no agreement on the evidence that, in middle childhood, the distribution of insecure attachment patterns becomes sex biased (Bakermans-Kranenburg & van IJzendoorn, 2009; Del Giudice, 2008). However, for our sample, a possible explanation of the lack of gender differences is likely that our sample is smaller than that of the other studies.

Furthermore, our results show that the children classified as secure, in both groups, were the highest-scoring subjects regarding the CRF; their scores differed significantly from those of the insecure groups. Children who are classified as insecure are typically at higher risk than secure children for less optimal outcomes and resources for their cognitive, psychological and social development. In this direction, for example, the literature suggests that insecurity is associated with less peer competence, beliefs about peer intent in an ambiguous event and peer rejection (Cassidy, Kirsh, Scolton, & Parke, 1996; Rydell, Bohlin, & Thorell, 2005; Schneider, Atkinson, & Tardif, 2001; Szewczyk-Sokolowski, Bost, & Wainwright, 2005). In fact, the high correlations observed between CRF and the scales associated with attachment security were expected. Children with secure attachment, who by

definition have higher narrative coherence than children with insecure attachment, then must have higher reflective functioning as well. Emotional Openness and Balance of Positive/Negative References to Attachment Figures take into account that a secure child is able to express the interplay of affect, mental states and behaviour and to have an integrated picture of others (which comprises both good and bad qualities). Coherence scale integrates to some degree information from the Idealization, Preoccupied Anger, Dismissal and Use of Examples Scales. These scales thus constitute feeder scales that are used to gauge the initial level of overall coherence, which is subsequently fine-tuned by consideration of violations and/or evidence of high coherence. Violations of coherence as manifested in various forms throughout the narrative may be compensated by evidence of reflectiveness, spontaneity and flexibility in discourse, which are all considered as positive indices of coherence. Ratings should be based upon a careful examination of the narrative as a whole (and scores can be inflated by up to two points by the positive indices of fresh speech and reflectiveness; Shmueli-Goetz *et al.*, 2004). Reflective Functioning pertains to the dynamic process of experiencing oneself or others in terms of the psychological basis that underlies interactions or behaviour. Children of this age range are actively developing cognitively, emotionally and socially, and their narratives reflect this dynamic process. So, it is not surprising the correlations observed between CRFs and Coherence: good reflective functioning is the result of a secure attachment in infancy, which in turn promotes improvements in mentalizing skills in toddlerhood and later (Fonagy *et al.*, 1991). In fact, only in the context of a secure or contained relationship are the child's affective signals received and interpreted by the caregiver, who has the capacity to reflect upon the mental states underlying the child's distress (Fonagy *et al.*, 1991). Insecure children and especially children with disorganized attachments may not have developed reciprocal communication skills and may lack emotion regulation skills, resulting in verbal or physical aggression or inability to express emotions. As a result, they may develop poor peer relationships and could be motivated not to interact with peers because they view themselves as helpless and powerless and see peers as a threat (Jacobvitz & Hazen, 1999). Children who are able to regulate their emotions are better able to respond in socially appropriate ways and to focus their attention, which makes it easier for them to learn and more likely be high achievers (Howse *et al.*, 2003; Martin, Drew, Gaddis, & Moseley, 1988). As a high level of emotional arousal is a characteristic of peer interaction (Garner & Estep, 2001), one important developmental step for children in their early school years is to learn constructive emotion-coping strategies to regulate the emotions aroused during interactions with peers (Jones & Garner, 1998). This implies that social competence is closely related to emotion regulation.

## LIMITATIONS

There are a number of limitations of this study. In particular, the most relevant are (a) the small sample size, replication in larger samples is requested; (b) for the small sample, multivariate analyses are not allowed, considering, for example, length of foster care placement and the severity and chronicity of the abuse. Further research may consider these effects.

## CONCLUSION AND IMPLICATIONS

In residential treatment settings, children engagements, relationships and activities are likely to be more difficult to develop or sustain than in a family setting. Factors such as high staff-client ratio and regimented schedules tend to lessen opportunities for the provision of individual attention. In this context, efforts to promote attachment may involve individualization of treatment, whereby staff members attempt to understand a particular child's needs and negotiate or accommodate them.

Our results indicate the need for a greater in-depth study of attachment styles and their relationship with coping resources and strategies. Given that the healthy development of psychological and social competences is closely associated with the quality of the parent-child attachment in infancy, the field will benefit from longitudinal studies for better understanding the effect of staying in a residential care facility on children's adjustment and on their ability to cope with the traumas of their past (Bravo & Del Valle, 2009).

In conclusion, the results of our study could have important clinical implications, based on the idea that a corrective emotional experience, stemming from a ready, loving and responsive relationship, allows the subject to work through his negative childhood experiences and acquire modalities of interaction that enable him to function more effectively in the world (Daniel, 2006; Dozier & Bates, 2004; Saunders *et al.*, 2011; Steele, Steele, & Murphy, 2009; Zaccagnino *et al.*, 2012). The study underlined the critical importance of increasing the provision of good quality child-caregiver relationships, which can offer sensitive responsiveness, stability, security and family membership. From this point of view it is possible to see ways in which foster home caregivers can offer a secure base to these kids. The use of developmental attachment theory to think about how security can be provided in the foster care system will lead to the building of new models of caregiving (Cassidy & Shaver, 1999; Schofield & Beek, 2005). Although literature agrees that resilience to adversity in early childhood is associated with a supportive caregiving relationship at some point in development, it remains unclear whether the child's characteristics elicit the attention and affection of an adult caregiver or whether resilient children are merely

fortunate that a supportive and involved adult takes an interest in them (Zeanah *et al.*, 2005). A closer look at the interactions between child characteristics and various facets of the institutional environment may provide insight into ways to improve institutional life for involved children. Longitudinal follow-up of this sample could provide important data on this question.

Given the fact that the CAI is a direct report of the child's own experiences and that this instrument has a specific version for investigating the attachment of foster children (Target, Shmueli-Goetz, Datta, & Schneider, 1999b), it could take part in the care programme, especially in high-risk samples, in which, as already known, the attachment security is compromised; in that sense, the CAI application may help the therapy process for both assessment and outcome evaluation.

Essential questions about the potential for recovery of attachment, how timing of intervention relates to recovery and which factors enhance or impede recovery remain to be addressed in further research.

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