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## Does early family risk and current quality of care predict indiscriminate social behavior in institutionalized Portuguese children?

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The current study extends research on the effects of institutionalization, most notably by evaluating the influence of proximal relationship processes over and above prenatal and pre-institutional family experiences. By focusing on current quality of institutional care and the child's early family background, it examines the influence of variations in the institutionalization experience on displays of indiscriminate social behavior, after taking into account potentially confounding pre-admission experiences. Seventy-four Portuguese children (11–30 months) placed in 17 residential institutions and their primary caregivers participated in the study. Children's displays of indiscriminate social behavior were assessed based on an observational measure and a semi-structured interview administered to the child's caregiver. Data on children's physical and mental development were also collected. Three contextual-risk composites of early family behavior – prenatal, family relational, and emotional-neglect – were created. The quality of institutional care was examined in terms of structural, relational characteristics, and, additionally, of the quality of child-caregiver relationship. Current quality of care experienced in the institution, operationalized in terms of the absence (vs. presence) of a preferred caregiver, predicted indiscriminate social behavior over and above prenatal and family risk conditions that preceded the child's institutionalization.

**Keywords:** indiscriminate social behavior; reactive attachment disorder; institutional rearing; family risk; quality of relational care

The institutionalization of children is appropriately considered a multidimensional deprivation experience due to the limited physical conditions of many institutions, high ratio of children per caregiver, the minimal training of caregivers, and the poor quality of care provided. In 2009, around 12,000 children younger than 18 years were living in residential institutions in Portugal, and the majority (57%) spent more than one year in the institution (Instituto de Segurança Social, 2010).

For more than half a century, developmentalists have chronicled delays in physical and cognitive development, as well as increased social-emotional difficulties and high levels of psychopathology, among children growing up in institutions (for a review see van IJzendoorn et al., 2011). In this report, we seek to extend this work by examining how variations in relational experiences at the institution and experiences in the family context

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prior to institutionalization may contribute to individual differences in one kind of disturbed attachment behavior often associated with institutional rearing: indiscriminate social behavior.

Attachment to caregivers has been one of the most studied topics in research on institutionalization, no doubt because separation from a parent and exposure to limited quality caregiving – characteristic of many institutions – are presumed to hinder the development of secure attachments and, thereby, undermine general well-being (Rutter, Kreppner, & Sonuga-Barke, 2009; Vorria et al., 2003). The first reports of disturbed attachment behaviors came from early clinical studies based on naturalistic observations of children placed in residential care. Recent and more methodologically rigorous research reveals similar patterns of disturbed attachment behavior in institutionalized children, thereby re-affirming the existence of two subtypes of disturbed attachment behavior, inhibited and indiscriminate (Zeanah, Smyke, Koga, & Carlson, 2005), and the higher incidence of the latter form (Zeanah, Smyke, & Dumitrescu, 2002).

The observation that indiscriminate social behavior (ISB) among institutionally reared children co-occurs with selective, discriminated relationships with a preferred caregiver (O'Connor et al., 2003; Zeanah et al., 2002) clearly suggests, perhaps surprisingly, that these two social orientations are not mutually exclusive (O'Connor & Zeanah, 2003). The work of Zeanah et al. (2005) partially supports this view. Although institutionalized children who exhibited signs of ISB also manifested incompletely developed attachments to their caregivers, continuous ratings of attachment toward the institutional caregivers were only significantly correlated with indicators of the inhibited type of disordered attachment. Thus, the indiscriminate sub-type appears, at least partially, distinct from an established attachment relationship (Bakermans-Kranenburg et al., 2011).

Most research on disorders of attachment among institutionalized children is limited, due to the fact that institutionalization has been treated as a “social address” (Bronfenbrenner, 1979). Thus, beyond characterizing where the child is being raised, little attention has been paid to more proximal processes related to the quality of care the child experiences (but see Dobrova-Krol, Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2010; Zeanah et al., 2005, for important exceptions). Indeed, the primary way in which the institutional social address has been refined in most research is in terms of age of entry or length of institutionalization (e.g., Chisholm, 1998). Notwithstanding the importance of timing and dosage of institutionalization, dynamic aspects of the institutionalization experience merit attention when it comes to understanding individual differences in development (Martins et al., 2013). Thus, more attention needs to be paid to the quality of care *and* to the child's family background, two contextual considerations central in the work reported herein.

Before placement in institutional care, many children experience life in families with limited resources (e.g., poverty, abuse, neglect, parental mental illness) for some period of time. It is well established that such circumstances increase risk for disorganized or atypical attachment patterns (e.g., Lyons-Ruth, Connell, Grunebaum, & Botein, 1990) and child psychopathology (e.g., Baptista et al., 2013; Kobak, Cassidy, Lyons-Ruth, & Ziv, 2006). Moreover, maternal psychiatric disorder and substance abuse are associated with ISB in maltreated children placed in foster care (Zeanah et al., 2004). Evidence also indicates that in-utero exposure to maternal alcohol abuse is associated with problematic child functioning and, specifically, with changes in social behavior (Landgren, Svensson, Strömmland, & Grönlund, 2010).

In light of such evidence, it remains possible that failure to consider pre-institutionalization conditions could result in the mis-estimation of institutional effects, potentially attributing to

the institutional experience effects that derive from pre-institutional family experiences. Therefore, the current study addresses the effects of prenatal and early care conditions that developmentally precede entry into care before estimating effects of more proximal processes of the institutionalization experience, among a sample of Portuguese institutionalized children. In addition, it assesses distinct features and dynamics of the child–caregiver relationship, and of the specific institutional context in which this relationship is embedded in an attempt to move beyond the social address of institutional care.

The first hypothesis tested is that ISB will be higher among children with increased exposure to pre-institutional risk conditions. The second is that higher rates of ISB will be related to more negative characteristics of the caregiving environment provided at the institution; such caregiving conditions are operationalized in terms of (1) structural and relational aspects of the quality of institutional care and (2) determinations of whether the child had (a) a differentiated caregiver, from the staff's point of view (i.e., Assigned Caregiver), and/or (b) a caregiver with whom the child was observed to have a differentiated affective relationship (i.e., Preferred Caregiver). The final hypothesis is that current institutional experiences that reflect quality of care will predict ISB over and above cumulative family risk preceding institutionalization.

## Method

### Participants

Seventy-four children (40 boys, 54.1%) placed in 17 Portuguese institutions were recruited for a broader research project; they were 11 to 30 months old ( $M = 19.05$ ,  $SD = 6.46$ ) by the time of assessment. The age at admission to the institution varied from 0 to 24 months ( $M = 7.31$ ,  $SD = 7.28$ ). Nineteen children (26%) came to the institution directly from the maternity ward, having no experience of living with their biological (or any other) families. Considering all 74 children, average length of time in the biological family was 6.54 months ( $SD = 7.05$ , range = 0–24). The length of time in institutional care varied from 6 to 29 months ( $M = 11.23$ ,  $SD = 4.42$  months). Sixty-eight percent of children in this sample ( $n = 50$ ) spent at least half their lives in the institution, and for 28% of the total sample ( $n = 21$ ) this meant more than 90% of their lives institutionalized.

There was usually more than one reason reported in the child's file for his/her admission: physical abuse, neglect or abandonment of previous children within the family (reported in 43.2% of the 74 children), own experience of neglect (41.9%), lack of parental skills (40.5%), poor socioeconomic conditions (24.3%), parental psychopathology or mental retardation (20.3%), child abandonment (17.6%), witnessing family violence (16.2%), and/or physical abuse (8.1%).

Data collection included also information about the institutional caregivers. Caregivers participating in the study cared for 10 children, on average ( $SD = 4.7$ , range = 1–22), for most of the day. Most caregivers (81%) had rotating shifts, as opposed to the minority that had fixed shifts. They also reported that they dedicated, on average, 27 minutes/day to each child ( $SD = 21.74$ , range = 0–120).

### Procedure

The study has been conducted with previous permission by Portuguese Social Services and Portuguese National Commission for Data Protection. The plan for the study was presented to the institutional staff. Written informed consents were obtained from the

biological parent, the institution director, and the participating caregivers. To enable characterization of children's early family risk circumstances prior to institutionalization, research staff gathered data from the child's file. Data on children's physical growth was obtained from medical records. A trained examiner assessed each child's mental development. Observational and caregiver report data were obtained to assess children's ISB.

## **Measures**

### *Child assessments*

*Indiscriminate social behavior (ISB).* Two measures were used for assessing ISB, the Rating of Infant and Stranger Engagement (RISE; Riley, Atlas-Corbett, & Lyons-Ruth, 2005) and the Disturbances of Attachment Interview (DAI; Smyke & Zeanah, 1999). The RISE codes attachment-related forms of engagement with the stranger by the infant over all eight episodes of the Strange Situation Procedure (SSP). This measure evaluates both the extent of the infant's affective engagement with the stranger compared to the caregiver, and the extent to which the infant displays non-normative acceptance of physical contact or response to soothing from the stranger, resulting in a singular rating on a 9-point scale (for an extended description see Oliveira et al., 2012). Inter-rater agreement based on 10 cases was very good ( $r_{ic} = .93$ ).

The DAI is a semistructured interview administered to the child's primary caregiver. It has 12 items that reference the presence of signs of disordered attachment, each of which are coded 0, 1, or 2, according to the amount of evidence of disturbed attachment behavior which the caregiver provides. Only the items indicative of signs of ISB were used for the present study (i.e., items 6–8): whether the child checked back with the caregiver (particularly in an unfamiliar setting) or tended to wander off without purpose; whether the child showed initial reticence around strangers or readily approached unfamiliar persons; and whether the child would readily go off with an unfamiliar adult. Scores for the three relevant items were summed, resulting in a total score ( $\alpha = .79$ ) ranging from 0–6. Inter-rater agreement for this subscale, based on 53 cases, was very good ( $r_{ic} = .96$ ). The measures of children's displays of ISB do not constitute diagnoses by themselves.

As scores obtained on the ISB subscale of the DAI were significantly correlated with the RISE scores in the present sample,  $r_s = .36$ ,  $p < .01$  (Oliveira et al., 2012), a composite of the mean of the standardized RISE and DAI scores was computed to obtain a global measure of ISB and reduce number of dependent variables.

*Child's physical and mental development.* Data on children's weight, height, and head circumference were collected from their medical records, and converted into percentiles using Anthro statistical software (World Health Organization, 2009) to afford unbiased comparison of children of different ages. The Bayley Scales of Infant and Toddler Development (3rd edition; Bayley, 2006) were used to assess children's cognitive, language, and motor development.

### *Early family risk factors*

A socio-demographic questionnaire about the child and his/her biological family was completed using information in the child's files at the institution. Three conceptually based contextual-risk composites, each based on four items (see below), were created to

capture sources of risk to the child in the family of origin (cf. Oliveira et al., 2012). Each risk condition in each composite was scored as absent (0) or present (1). A minimum of three items had to be available for a composite risk score to be formulated for any child. Composite risk scores represented the proportion of items in a risk composite on which the child received a score of one. Higher scores reflected greater risk.

*Prenatal risk.* This composite assessed the presence of maternal physical disease (e.g., AIDS, Hepatitis), maternal substance abuse during pregnancy, pregnancy without medical surveillance, and child premature birth ( $M = .29$ ,  $SD = .24$ , range = 0–1).

*Family-relational risk.* This composite assessed receipt of government financial aid, domestic violence (to the children and/or between parents or other family members living in the house), prior evaluation of the family by social workers as at risk (based in conditions such as maltreatment, neglect, or abandonment of other children), and prior institutionalization or adoption of target child's sibling ( $M = .46$ ,  $SD = .26$ , range = 0–1).

*Emotional-neglect risk.* This composite, tapping the likely unavailability of the maternal figure, assessed whether parental neglect was the reason for the child's institutionalization, whether the mother engaged in prostitution, engaged in substance abuse, or suffered from psychopathology or mental retardation ( $M = .36$ ,  $SD = .24$ , range = 0–1).

#### *Quality of institutional care*

Three features of the institutional care environment and experience were assessed.

*Structural and relational characteristics of the institution.* The Assessment of the Quality of Institutional Care (AQIC; Silva et al., 2010) was used to assess structural and relational aspects of the quality of institutional care, based on researchers' extensive observations during two years of data collection at the institutions. Three dimensions were assessed for each institution: (1) institutional resources and routines, (2) institutional relational care, and (3) individualized care provided by the caregiver to each child. For dimensions (1) and (2), observers made ratings using a 5-point Likert scale: 1 = no/never present; 3 = sometimes/somewhat present; 5 = yes/always present. The total score for each dimension was calculated by summing ratings across items. For dimension (3), observers rated each of its four items on a 9-point scale. The items of availability, sensitivity, and acceptance were rated using Ainsworth's maternal sensitivity scales (Ainsworth, Blehar, Waters, & Wall, 1978). The item of knowledge about the child was rated based on a scale built by the researchers (Silva et al., 2010).

The institutions were rated by trained graduate-student researchers over a time frame of more than two years; during which time they conducted naturalistic observations, taking notes relevant for coding AQIC dimensions. This approach meant that ratings were based on all the knowledge obtained over an extended period of time. For the first two dimensions (institutional resources and routines, institutional relational care), interrater agreement was calculated for 53% of the institutions using the intra-class correlation coefficient. Regarding individualized care, interrater agreement was calculated for 12% of the sample. All discrepancies were resolved by consensus. Interrater agreement was adequate for all three dimensions of AQIC: institutional resources and routines ( $r_{ic} = .84$ , based on 53% of cases), institutional relational care ( $r_{ic} = .83$ , based on 53% of cases), and individualized care

( $r_{ic} = .81$ , based on 12% of cases). Because this measure was developed for use with the current sample, external measures of validity were not available.

*Assigned caregiver.* The second measure of the quality of care was not a direct assessment of this construct but a proxy, based on the view that a child who had a single caregiver who was disproportionately responsible for the child would likely receive better quality of care, on average, than a child who did not. To identify such an “assigned caregiver”, staff was asked whether there was a key worker with a special affective relationship with the child or, at least, someone who was more responsible for or more frequently looked after the child. A research team member checked this information through naturalistic observations of the daily routines of caregivers vis-à-vis particular children. Forty-three (58.1%) children were considered to have an assigned caregiver. The terminology of “assigned caregiver” is used to highlight the fact that it is based on a reference provided by the staff, as opposed to a formal, attachment-based evaluation of the child’s preferred figure.

*Preferred caregiver.* Guided by attachment theory, this third proxy measure was conceived as an index of institutional quality of care, based on the premise that a child who had a preferred caregiver had probably received more than just routine care from this person and had developed a special relationship with her. The existence of such an individual was based on researchers’ extensive observations at the institution. As noted already, the researchers had spent extensive time at each institution observing and taking notes regarding the quality of institutional care and, in this particular case, the relationship between each child and the caregiver participating in the study. The observations of the child and caregiver lasted at least one month, during which time they were observed daily. Children’s behaviors toward their caregivers were rated on four separate scales which were used to determine whether they had a “preferred caregiver”: (1) *proximity seeking* assessed whether the child regularly and actively sought to increase proximity with any particular caregiver, particularly in unfamiliar/stressful situations; (2) *separation distress* assessed whether the child showed signs of anxiety or distress when left by a particular caregiver in unfamiliar places or with unfamiliar people or when he/she noticed that the caregiver was leaving the institution; (3) *positive responsiveness* assessed whether the child responded more and in a particularly positive way to the initiatives of a specific caregiver, and acknowledged the presence of a particular caregiver after a separation period; and (4) *the caregiver as secure base/secure haven* assessed whether the child used a particular caregiver as a secure base for exploration, referencing her frequently and, if distressed, preferentially turning to her for comfort. Each of the four scales was rated on a 3-point scale, according to the amount of evidence of these behaviors that was observed. After summing ratings across the scales, the total preferred-caregiver score ranged from 0 to 8 ( $M = 3.61$ ,  $SD = 2.85$ ). This final score was used to make a categorical determination of whether the child had a preferred caregiver. A score of 7 reflected the 75th percentile. Thus, 21 of the children (28.4% of the sample) scored 7 or higher on the summary scale and were deemed to have a preferred caregiver. Some 58.1% of the children were classified as having an assigned caregiver, which is not surprising considering that, as above, this measure was based on less restrictive criteria (i.e., staff information that was afterwards confirmed by researchers’ observation). Interrater agreement for the existence of the child’s preferred caregiver, calculated for 12% of the sample, was good ( $r_{ic} = .78$ ).

The determination of whether a child had (1) an assigned caregiver and (2) a preferred caregiver were based on independent judgments by different observers (except in the case of 20 children) and so were treated separately in the analyses.

## Results

Three sets of analyses are presented, the first examining relations between ISB and sex, age, and length of institutionalization. The second correlational analysis assessed bivariate links between potential predictors of ISB and this outcome. The regression model builds on the second analysis, enabling us to determine whether institutional experience predicts ISB over and above family risk factors.

Preliminary analyses revealed no significant associations between the ISB composite and children's sex,  $r_{pb}(72) = .17, p = .16$ , age at assessment,  $r(72) = -.05, p = .66$ , age at admission,  $r(72) = .07, p = .55$ , or length of institutionalization,  $r(72) = -.19, p = .11$ . Likewise, no concurrent associations proved to be significant between ISB and children's physical and mental development. The only exception was a negative association between ISB and children's height,  $r(71) = -.24, p = .041$ .

Table 1 presents the bivariate associations between ISB and early family risk factors, and quality of institutional care. Greater prenatal risk and family emotional-neglect were marginally associated with the presence of ISB. In terms of quality of institutional care, children lacking a preferred caregiver were significantly more likely to display ISB. Neither the direct measures of quality of care (resources and routines, relational care, individualized relational care) nor the presence of an AC proved to be significantly related to ISB.

As a follow up to the preceding analyses, a hierarchical regression analysis was carried out using as predictors of ISB those variables that exhibited marginal and significant bivariate associations with it. Height was excluded from this model given its correlation with prenatal risk,  $r(65) = -.28, p = .021$ , and our primary focus on the family and institutional factors associated with ISB. With all three predictors in the model, 20% of variance in children's ISB could be accounted for,  $F(3, 61) = 5.16, p = .003$  (see Table 2). In terms of individual predictors, greater prenatal risk and the absence of a

Table 1. Bivariate associations between early family risk factors and quality of institutional care, and ISB.

		ISB
Early family risk factors	Prenatal risk <sup>a</sup>	.22 <sup>†</sup>
	Family-relational risk <sup>a</sup>	-.03
	Emotional-neglect risk <sup>a</sup>	.23 <sup>†</sup>
Quality of institutional care	Institutional resources and routines <sup>a</sup>	-.11
	Institutional relational care <sup>a</sup>	-.07
	Individualized relational care <sup>a</sup>	-.12
	Assigned caregiver <sup>b</sup>	-.13
	Preferred caregiver <sup>b</sup>	-.35**

Notes: <sup>a</sup>Pearson coefficient correlation; <sup>b</sup>Point-biserial coefficient correlation; \*\* $p < .01$ ; <sup>†</sup> $p < .10$ .

Table 2. Prediction of ISB using early family risk factors and quality of institutional care.

	R <sup>2</sup> (Adj R <sup>2</sup> )	$\beta$	t
Prenatal risk	.07 (.04)	.17	1.32
Emotional-neglect		.17	1.28
Prenatal risk	.20 (.16)	.25	2.04*
Emotional-neglect		.11	.93
Preferred caregiver <sup>b</sup>		-.37	-3.13**

Notes: \* $p < .05$ ; \*\* $p < .01$ .



preferred caregiver at the institution predicted greater ISB. Thus, even after taking into consideration the apparent effect of the prenatal exposure to risk conditions in the mother's womb, institutional experience explains notable variation in ISB.

## Discussion

The current study extends research on the effects of institutionalization, most notably by evaluating the potential influence of proximal relationship processes over and above prenatal and pre-institutional family experiences in accounting for children's indiscriminate social behavior. The latter design feature discounts the possibility that presumptive effects of institutional care are actually a function of experiences that preceded institutionalization.

The first hypothesis was partially supported in that higher levels of both pre-natal risk and maternal emotional-neglect risk tended to be associated with higher levels of ISB. However, when both of these family-risk composites were used, along with the existence/absence of a preferred caregiver, to predict ISB, only the prenatal risk proved to be significantly related to ISB. This most likely resulted from the fact that the two family risk composites – prenatal and maternal – were themselves (marginally) positively correlated, so that variance they shared with the outcome was statistically attributed to the pre-natal rather than the maternal risk composite in the regression analysis.

The second hypothesis also received support. Even though structural and some relational aspects of the quality of institutional care failed to predict indiscriminate social behavior, institutionalized children who had a preferred caregiver proved less likely to manifest ISB. The fact that our general observational measure of quality of institutional care was not associated with indiscriminate social behavior is inconsistent with the surprising finding from the Ukrainian study (Dobrova-Krol et al., 2010) that found an association between seemingly better quality of care and *higher* levels of ISB. Clearly, more work is needed to account for the inconsistency across inquiries.

Regarding the third hypothesis, it is of special significance that current institutional quality of care, operationalized in terms of the absence of a preferred caregiver, predicted ISB even after taking into consideration pre-institutionalization conditions (prenatal and maternal risk). These findings are clearly consistent with both attachment theory and Smyke, Dumitrescu, and Zeanah (2002) pilot-study evidence highlighting the potential influence of quality of caregiving. However, they contrast with those reported by Zeanah et al. (2005) showing that ISB is not related to quality of caregiving and, as already noted, with the Ukrainian work of Dobrova-Krol et al. (2010). Important to appreciate is that the current report pertains to children placed in institutions in Western Europe, making the rearing environment potentially different from many of the previously cited studies involving institutions in Eastern Europe and the old Soviet Union. Therefore, cultural and contextual variables that might play a role in explaining the results, including, for example, reasons for admission in institutional care, might account for any differences between the current research and much other work on institutional rearing.

Smyke et al. (2007) finding that a proximal-process measure of institutional experience predicted several dimensions of the child's development better than the length of institutionalization is also in line with findings from our inquiry; neither length of institutionalization nor age at admission proved related to ISB. Such null results are consistent with other studies, showing that ISB is unrelated to general deprivation experienced in the institution (e.g., Chisholm, 1998).

However, the same literature indicates that physical growth is unrelated to ISB, which is inconsistent with the height association detected in the current study. At the same time, a meta-analysis by van IJzendoorn and Juffer (2006) documents a strong negative effect of institutionalization on growth, which is most adequately mirrored in the development of height. It might be that adverse pre-admission life, which the children in the current study had recently experienced (e.g., pre-natal risk), continues to manifest itself through their deficient body growth in addition to social-emotional problems.

In sum, the present research supports the idea that ISB in institutionally reared children might be better understood by employing a comprehensive approach, including their early experiences in the family in addition to those of post-institutionalization. Pre-institutional risk conditions were found to be marginally associated with ISB, which is not surprising given the probable linkage between these risk indicators and maternal emotional unavailability. Inclusive, some of these risk factors have been previously associated with ISB (e.g., maternal psychiatric disorder; Zeanah et al., 2004). There is, however, one limitation that needs to be considered. Information on families of origin was coded from case reports, which typically only comment on risk factors that were known or observed, and often are plagued by missing information. Therefore, it is not possible to know what risk factors were present but undocumented.

Notwithstanding the role of pre-admission experiences, results revealed that the absence of a preferred caregiver in the institution predicted ISB over and above those factors. This finding represents the major contribution of the current research. Previous studies with institutionalized children have assessed the existence of a preferred caregiver by interviewing staff (Smyke et al., 2002), and thus the caregivers reported both the child's ISB and the existence of a preferred caregiver. In an attempt to improve the assessment of the existence of a selective relationship in the institution, the current study used two different measures. The first measure, designated assigned caregiver, evaluated the existence of a preferential caregiver based on the staff report of whether there was a caregiver to whom a child had a "specific relationship" (comprising either more instrumental or affective criteria); 58% of children were so identified. No association was found between the existence of an assigned caregiver and ISB, which is consistent with Smyke et al. (2002).

The second measure, labeled preferred caregiver, was designed to capture the existence of a selective attachment figure – which was identified in 28% of children – by reliably coding observed attachment-related behaviors. Due to it representing a more stringent and objective evaluation of an attachment-like relationship, we suspect that this theory-informed methodological improvement accounts for why it proved successful in predicting ISB, even after accounting for pre-institutional experiences.

This result may challenge previous findings that ISB is empirically unrelated to the existence of a preferred relationship with a caregiving figure (Zeanah et al., 2002). Furthermore, the mechanisms involved in the development of ISB among institutionally reared children might be different from those in children reared in (high-risk) families (Dobrova-Krol et al., 2010; Rutter et al., 2009) and from those that perpetuate it.

The marked inconsistency in caregiving experienced by children in institutions may lead to what Rutter et al. 2009 (pp. 535–536) describe as "disinhibited attachment": the "relative failure to develop committed intimate social relationships". Therefore, it is likely that only those children who succeed in overcoming the obstacles imposed by the institutional caregiving context and in building a deep relationship with a specific caregiver are able to demonstrate fully developed attachment behaviors that protect them from problematical developmental trajectories involving indiscriminate social behavior.

The hypothesis that poor caregiving fosters children's ISB does not preclude, however, the possibility of reverse causation as well. Quite conceivably, children displaying high levels of ISB may inadvertently discourage caregivers from investing in relationships with particular children. The challenge of disentangling direction is considerable and could not be achieved with the data available in this inquiry.

An important implication of this study is that the relationship between institutionalized children and their caregivers should be a target for intervention. The St. Petersburg-USA Orphanage Research Team (2008) has demonstrated that children's development may be enhanced through caregiver training to promote warm, sensitive, and responsive interactions with the child within a context that is organized in such a way that daily routines and organizational activities promote children's social-emotional development in the institutions. The present study revealed that Portuguese institutional caregivers might benefit from such training.

In terms of future research, the preferred-caregiver finding raises the critical question of why some children established such attachment-like relations with a particular caregiver whereas others did not. The preceding proposal for caregivers training enhancement is based on the view that the development of a preferred relationship is due to the behavior of the caregiver, which certainly seems reasonable. But it would be good to know exactly what caregivers did to induce such an apparent sense of felt security. Also worth considering is whether there may be child factors and behaviors that elicited such security-inducing care or that predisposed the child to develop a preferred-caregiver relationship.

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