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A Three Year Follow-up of Attachment and Indiscriminate Friendliness in Children Adopted from Romanian Orphanages

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Attachment and indiscriminately friendly behavior were assessed in children who had spent at least 8 months in a Romanian orphanage (RO) and two comparison groups of children: a Canadian-born, nonadopted, never institutionalized comparison group (CB) and an early adopted comparison group adopted from Romania before the age of 4 months (EA). Attachment was assessed using 2 measures: an attachment security questionnaire based on parent report, and a Separation Reunion procedure that was coded using the Preschool Assessment of Attachment. Indiscriminately friendly behavior was examined using parents' responses to 5 questions about their children's behavior with new adults. Although RO children did not score differently from either CB or EA children on the attachment security measure based on parent report, they did display significantly more insecure attachment patterns than did children in the other 2 groups. In addition, RO children displayed significantly more indiscriminately friendly behavior than both CB and EA children, who did not differ in terms of indiscriminate friendliness. RO children's insecure attachment patterns were not associated with any aspect of their institutional environment, but were related to particular child and family characteristics. Specifically, insecure RO children had more behavior problems, scored lower on the Stanford-Binet Intelligence Scale, and had parents who reported significantly more parenting stress than RO children classified as secure.

INTRODUCTION

After the overthrow of the Ceausescu regime in December 1989, the world became aware of thousands of children housed in deplorable conditions in Romanian state-run orphanages. Shortly thereafter, people in the West and all over Europe traveled to Romania to adopt these children. There are several important developmental questions that can be addressed by examining a sample of these children, not the least of which is whether the development of a secure attachment relationship is compromised by children's early deprivation experience.

Children adopted from Romanian orphanages are an important group to study with respect to attachment because prior to their adoption they had no primary caregivers with whom to form attachment relationships. Child-to-caregiver ratios in Romanian institutions ranged from 10:1 for infants to as high as 20:1 for children over 3 years of age (Chisholm, Carter, Ames, & Morison, 1995), and children were exposed to a series of inattentive caregivers, preventing them from establishing attachment relationships. Given the recognition that a secure attachment relationship in infancy provides children with the resources to resolve future developmental issues adequately (Carlson & Sroufe, 1995), it is important to examine such development when it occurs for the first time beyond infancy.

The impact of forming a first attachment beyond infancy has not been clearly assessed because this situation is extremely rare. Early research on institutionalized children suggested that such children were incapable of forming an attachment with substitute parents (Goldfarb, 1945a, 1945b). This conclusion, however, was based on descriptive data from very small numbers of children, many of whom lived in a series of foster homes. Developing a first attachment beyond infancy, however, necessarily implies that a child has experienced some form of extreme interpersonal deprivation in the first year or two of life. The factor of time is confounded with deprivation.

The First Study

In an earlier study (Chisholm et al., 1995), we suggested that developing a first attachment beyond the first year or two of life might present difficulties. Three factors contributed to this initial prediction that children adopted from Romanian orphanages would be at risk for problems in the development of attachment: (1) parents may not be as responsive to an older child's need for proximity or close contact, (2) many orphanage children did not display preattachment behaviors at the time of their adoption, and (3) it is likely that orphanage children had developed working models of distrust as a result of extreme ne-

glect; this might have promoted difficult or passive interaction styles that would have a negative impact on their parents' responsiveness toward them.

In the first study (Chisholm et al., 1995), attachment security was assessed using parents' responses to the 23 items with the highest and lowest loadings on the security scale of the Waters and Deane Attachment Q-sort (1985). (The complete set of attachment security items is available from the authors upon request.) Children who had spent at least 8 months in a Romanian orphanage (RO group) were compared to Canadian-born children (CB group) who were matched in sex and age at interview to children in the orphanage group, and to early adopted Romanian children (EA group) who would have grown up in an orphanage if they had not been adopted to Canada before they were 4 months of age. In that study, Romanian orphanage children scored significantly lower on security of attachment than did their matches in the CB group and the EA group. The CB and EA groups did not differ from each other on security of attachment scores.

There were several limitations, however, to this initial study. First, the attachment measure was based on parental report. The need for a more direct behavioral measure of attachment was obvious. Second, the items that constituted the attachment questionnaire were not developed for use in a questionnaire format, and the questionnaire itself had no established reliability or validity. Third, at the time of the preliminary interviews, adoptees had been with their families for a median of 11 months. It was possible that this may have been too early to expect children to have formed a secure attachment with their caregivers. Nonetheless, these initial findings resulted in the generation of many of the questions that are addressed in the present research.

The Present Study

In the present study, the attachment questionnaire was readministered to children in all three groups. If it was simply too early for orphanage children to display signs of security at the time of the first study, there should now be changes in children's attachment scores. When the present study was conducted, all children had been with their adoptive families for at least 26 months, so it was expected that orphanage children would have had an opportunity to form an attachment with their primary caregivers. It was hypothesized that orphanage children would have higher security of attachment scores at Time 2 than at Time 1. Changes in attachment security scores for children in the early adopted and Canadian-born groups were also assessed, although no specific hypotheses were made.

Preschool Assessment of Attachment

In addition, children's attachment was assessed behaviorally by using a separation-reunion procedure, and coded using the Preschool Assessment of Attachment (PAA) developed by Crittenden (1992). The separation-reunion procedure differed from previous procedures in that it took place in children's homes as opposed to a research laboratory. This new procedure may extend previous work, given Ainsworth's (1990) suggestion of the importance of attempting such procedures in naturalistic settings. The PAA was chosen as the most appropriate system for assessing attachment in the orphanage sample because a substantial portion of Crittenden's work on attachment has focused on the attachment relationships of maltreated and neglected children (Crittenden, 1985, 1988a, 1988b, 1992).

The PAA comprises four preschool attachment strategies: Secure (Type B with subtypes reserved, comfortable, and reactive), Defended (Type A with subtypes inhibited, compulsive caregiving, and compulsive compliant), Coercive (Type C with subtypes threatening, disarming, punitive, and helpless), and Defended/Coercive (A/C). As well, Crittenden includes a Secure Other (SO) pattern and an Insecure Other (IO) pattern in her system. These classifications are made when children are clearly either secure or insecure, but the strategies they use in interaction with their caregivers do not reflect any of the standard subpatterns. An examination of the insecure patterns in the PAA reveals that as one moves through this system from A1 to A4 and from C1 to C4, the insecure patterns become less common and more extreme. These extreme *atypical* attachment patterns (A3, A4, C3, C4, A/C, IO) are more often found in both maltreated samples of children (Cicchetti & Toth, 1995; Crittenden, 1992) and samples of children who have experienced maternal depression (Teti, Gelfand, Messinger, & Isabella, 1995). Such atypical insecure patterns may be particularly relevant in this study given the high-risk nature of the present orphanage sample.

Studies that contribute to the validation of the PAA are accumulating. Crittenden and her colleagues (Crittenden & Claussen, 1993; Crittenden, Partridge, & Claussen, 1991) have found associations between children's attachment as assessed by the PAA and maltreatment status, maternal sensitivity,

and caregivers' own attachment histories as assessed by the Adult Attachment Interview (AAI) developed by Main and her colleagues (George, Kaplan, & Main, 1984). Similarly, associations have been reported between children's attachment patterns on the PAA and caregivers' depressive symptomatology (Teti et al., 1995) and children's behavior problems (Fagot & Pears, 1996).

Using the PAA, it was expected that children adopted from Romanian orphanages would be more likely to demonstrate insecure patterns of attachment than children in the other two groups. Recent work with a smaller sample of Romanian adoptees contributed to this hypothesis. Handley-Derry et al. (1995) found that their sample of Romanian adoptees, who were adopted primarily from their homes, displayed significantly more insecure attachment patterns than a group of Canadian-born, nonadopted children.

No differences in the number of insecure attachment patterns were expected between the early adopted Romanian group and the Canadian-born group, given that children in the EA group would have developed an attachment at the usual time, between 6 and 12 months of age. As well, the limited research on attachment in adopted children has shown that differences in attachment quality between adoptees and their nonadopted peers are found only when children were either adopted beyond 6–10 months of age (Yarrow & Goodwin, 1973) or had experienced an interracial adoption (Singer, Brodzinsky, Ramsey, Steir, & Waters, 1985).

Indiscriminate Friendliness

Another factor that may be relevant to the study of attachment in orphanage children is indiscriminately friendly behavior. References to indiscriminately friendly behavior are evident in the early literature on the social development of institutionalized children who were later fostered or adopted. Tizard (1977) characterized indiscriminate friendliness as behavior that was affectionate and friendly toward all adults (including strangers) without the fear or caution characteristic of normal children. In these cases, a child's behavior toward other adults could not be discriminated from his or her behavior toward caregivers. Provence and Lipton (1962) suggested that for indiscriminately friendly children any adult was sufficient for the child as long as the child's needs were met. Provence and Lipton (1962) followed 14 children who spent their infancy in institutions and were placed in foster care between 18 and 24 months of age. After a period of a few months in foster care, in which children displayed fear at separation from the foster parent, children began to display indiscriminate friendliness. No further follow-ups were done on this population, however, so it is unclear how long this behavior continued. Tizard (1977) followed 24 children who had spent their first 2 years in institutions. According to reports from their adoptive parents, these children displayed indiscriminately friendly behavior at 2, 4½, and 8 years of age, although in most children this behavior had disappeared by the time the children were 8 years old (Tizard & Hodges, 1978). Goldfarb (1955) noted the presence of indiscriminately friendly behavior in adolescents who had been institutionalized as children and had subsequent unstable foster home placements. More recently, research that examined Romanian adoptees' friendly overtures to a stranger in the separation-reunion procedure found that one group of Romanian adoptees initiated more overtures to the stranger than did a group of healthy Canadian controls matched in terms of attachment category (Sabbagh, 1995). Specifically, adoptees who had been classified as secure displayed more indiscriminate friendliness than secure controls. In contrast, however, insecure adoptees did not score differently on indiscriminate friendliness from insecure controls.

Indiscriminate friendliness is particularly relevant to the study of attachment because some researchers have suggested that indiscriminately friendly behavior may be indicative of "indiscriminate attachment" (Provence & Lipton, 1962), "nonattachment" (Lieberman & Pawl, 1988), or a reactive attachment disorder (Zeanah, 1996). Lieberman and Pawl (1988) have used the term "nonattachment" to describe an attachment disorder that results from an infant not having had the opportunity to form an attachment relationship. This is precisely the situation of children reared in Romanian orphanages.

Given the importance of indiscriminately friendly behavior in the study of attachment in institutionalized children, one focus of our initial research was to establish the presence of indiscriminately friendly behavior in Romanian orphanage children. Orphanage children obtained significantly higher scores on five questions concerning indiscriminate friendliness than did early adopted children (Chisholm et al., 1995). In that study, however, indiscriminate friendliness was not measured in the Canadian-born group, and, as a result, there were no normative data on how typical indiscriminately friendly behavior was in the nonadopted population. In the present study, all three groups responded to the questions on indiscriminate friendliness.

Another purpose of the present study was to assess whether displays of indiscriminately friendly be-

havior had decreased among orphanage children. It was expected that children in the orphanage group would display significantly less indiscriminately friendly behavior at Time 2 (the present study) than they had displayed at Time 1 (Chisholm et al., 1995). Given that Tizard (1977) still found instances of indiscriminate friendliness in children as late as 8 years of age, however, it was hypothesized that orphanage children would continue to display more indiscriminate friendliness at Time 2 than children in the Canadian-born and early adopted groups. No differences in instances of indiscriminately friendly behavior were expected between the two comparison groups of children.

Child and Family Correlates

An exploratory aspect of the present work involved examining correlates of orphanage children's attachment patterns. If the hypothesis regarding a larger number of instances of insecure attachment patterns in orphanage children was supported, it was important to examine whether there were particular child and family characteristics that differentiated orphanage children who developed secure attachments with their adoptive parent from those who developed insecure attachments. For example, several researchers have reported links between insecure attachment patterns and externalizing behavior problems (Greenberg, Speltz, DeKlyen, & Endriga, 1992; Lyons-Ruth, 1996; Lyons-Ruth, Alpern, & Repacholi, 1993; Speltz, Greenberg, & DeKlyen, 1990). Insecure attachment in infancy has quite consistently predicted behavior problems in preschool (Speltz et al., 1990) and school-aged children (Lewis, Feiring, McGuffog, & Jaskir, 1984). With respect to the present sample, at Time 1, parents of orphanage children reported more behavior problems in their children than did parents of both Canadian-born and early adopted children (Fisher, Ames, Chisholm, & Savoie, 1997). It was important to examine whether at Time 2 there was a significant association between children's behavior problems and their attachment security.

A second child variable that might be associated with children's attachment patterns is intelligence. Although some researchers have found associations between children's attachment patterns in infancy and later assessments of intelligence, in a recent meta-analysis, van IJzendoorn, Dijkstra, and Bus (1995) reported little association between attachment and intelligence. Because there was wide variation in the IQ scores of orphanage children, and because many orphanage children were delayed in their development (Morison, Ames, & Chisholm, 1995), the Stanford-Binet scores of orphanage children with secure and insecure attachment patterns were examined.

Family characteristics that have been associated in the literature with children's insecure attachment patterns were also examined. For example, family demographic characteristics such as low SES (Lyons-Ruth et al., 1993) and high levels of parenting stress (Teti, Nakagawa, Das, & Wirth, 1991) have been consistently associated with children's insecure attachment patterns. Whether such variables were associated with the quality of orphanage children's attachment patterns was examined.

In summary, it was expected that orphanage children would display higher attachment security scores at Time 2 than they had displayed at Time 1. Nonetheless, it was hypothesized that orphanage children would be more likely to demonstrate insecure attachment patterns than children in the comparison groups. As well, orphanage children's displays of indiscriminate friendliness were expected to have decreased from Time 1 to Time 2, although displays of indiscriminate friendliness were still expected to be higher in the orphanage group than in the comparison groups of children.

METHOD

Participants

Romanian orphanage (RO) group. The RO group comprised 46 children, 21 males and 25 females, who had spent at least 8 months (*range* = 8–53 months) in a Romanian orphanage prior to their adoption to Canada. Their median age at adoption was 18.5 months (*range* = 8–68 months), and the median length of time children had spent in institution was 17.5 months (*range* = 8–53 months). It is clear from this and from the high correlation between RO children's age at adoption and their total time in an institution, $r(46) = .97$, $p < .01$, that these children had spent most of their lives in institutions prior to their adoption. At Time 1, the median age of the children was 30 months (*range* = 17–76 months), and the children had been in their adoptive homes for a median of 11 months (*range* = 4–25 months). At Time 2, 30 of the RO children were seen when they were between 53 and 55 months of age. The remaining 13 older RO children ranged from 65 to 110 months of age.

In three cases it was not possible to visit the families, so telephone interviews were conducted and questionnaires were mailed to the families. Therefore, 46 parents completed all of the interview

Table 1 Demographic Characteristics of Matched Pairs of RO and CB Children

Characteristics	*n*	RO Group	CB Group
Time in institution (months)	46	16.5 (8–53)[a]	. . .
Age at adoption (months)	46	17.0 (8–68)	. . .
Time in adopted home (months)	46	39.0 (26–57)	. . .
Age at interview (months)	46	54.5 (50–110)	54.0 (50–109)
No. of children in family	46	2 (1–11)	2 (1–5)
Mother's education (years)	46	13.9 (2.3)[b]	14.3 (2.3)
Father's education (years)	39	14.5 (3.9)	15.0 (2.6)
Mother's age	46	38.1 (6.0)	37.4 (4.1)
Father's age	40	40.2 (6.8)	39.5 (4.1)
SES[c]	44	50.0 (13.9)	54.3 (15.5)

[a] Median (range).
[b] Mean (standard deviation).
[c] SES calculated as higher status parent's score on the 1981 Socioeconomic Index for Occupations in Canada (Blishen, Carroll, & Moore, 1987).

measures, but only 43 children and their parents participated in the separation-reunion procedure conducted in families' homes. This sample of 43 families did not differ demographically from the total sample of 46 families.

Canadian-born (CB) group. The CB group comprised 46 nonadopted, never institutionalized children (21 males, 25 females), all of whom were individually matched in sex and 42 of whom were matched in age at interview (±1 month) to a child in the RO group.[1] Telephone interviews were conducted with CB families whose RO matches had completed a telephone interview. Therefore, 46 CB families completed all interview measures, but only 43 families participated in the separation-reunion procedure conducted in families' homes.

The demographic characteristics of the two groups at Time 2 are displayed in Table 1. Socioeconomic status (SES) was measured by an index (Blishen, Carroll, & Moore, 1987) primarily based on education and income, and to a minor extent on occupational prestige. All occupations are divided into 514 groups, with scores ranging from 28 to 78. Representative occupations of people whose score is near the mean of the present sample include firefighter, sales manager, health inspector, and real estate salesperson. The RO and CB groups did not differ significantly on any of the demographic characteristics shown in Table 1.

Early adopted (EA) group. The EA group comprised 30 Romanian children (14 males, 16 females) who would have grown up in a Romanian orphanage if they had not been adopted to Canada before they were 4 months of age. They were matched in sex and age at interview (±1 month) to 30 children in the RO group. At Time 2, the median age of the EA children was 54 months (*range* = 50–64 months), and children had been in their adoptive homes for a median of 52 months (*range* = 49–60 months). Two EA families refused to participate in the home interview, and in these cases telephone interviews were conducted and questionnaires were mailed to the families. Unfortunately, these children were not matched to RO families who had completed telephone interviews. A third family agreed to the home interview but refused to be videotaped in the separation-reunion procedure. Therefore, 30 parents completed all of the interview measures, but only 27 families participated in the separation-reunion procedure.

The demographic characteristics of the 30 matched RO and EA families are presented in Table 2. Both mothers' and fathers' educational levels were significantly higher in the EA group than in the RO group, $t(27) = 2.15$, $p < .04$ and $t(24) = 2.98$, $p < .006$,

1. Given the impossibility of finding a control group of children who had been adopted at the same age as each RO child, but who had not experienced the effects of institutionalization, an attempt was made to control demographic differences between groups as much as possible. Therefore, RO children were matched to both CB and EA children on age and sex, and a number of demographic characteristics. As a result, all analyses were based on matched pairs of RO and CB children (46 pairs) and matched pairs of RO and EA children (26 pairs). Although this matching decision results in controlling for demographic differences between groups, the groups are no longer independent. Matched-pairs *t* tests and Sign tests were used in subsequent analyses because (1) such analyses are equivalent to repeated-measures ANOVAs, and (2) given that the two comparisons (RO versus CB and RO versus EA) comprise different numbers of pairs, participants' data would be lost if the three groups were combined in one repeated-measures ANOVA.

Table 2 Demographic Characteristics of Matched Pairs of RO and EA Children

Characteristics	*n*	RO Group	EA Group
Time in institution (months)	30	13.5 (8–28)[a]	1.0 (0–4)
Age at adoption (months)	30	14.0 (8–28)	2.0 (0–4)
Time in adopted home (months)	30	40.0 (26–46)	52.0 (49–60)
Age at interview (months)	30	54.0 (50–65)	54.0 (50–64)
No. of children in family	30	2 (1–9)	2 (1–5)
Mother's education (years)*	29	13.9 (2.1)[b]	15.2 (2.7)
Father's education (years)*	26	13.8 (3.9)	16.2 (2.9)
Mother's age	29	37.8 (5.0)	40.1 (6.4)
Father's age	26	39.6 (5.9)	41.1 (6.7)
SES	28	49.8 (14.0)	51.0 (12.8)

[a] Median (range).
[b] Mean (standard deviation).
* $p < .05$.

respectively. Otherwise the two groups did not differ on demographic characteristics.

Procedure

Separation-reunion procedure. This procedure was developed with the aid of Dr. Patricia Crittenden (personal communication, March–April, 1993). Two female researchers were present at all home visits. Upon arrival at the home, the First Researcher interacted freely with both parent and child, who by prior arrangement were the only two family members in the house. The majority of parent participants were mothers; however, one father in the CB group and two fathers in the EA group were the primary caregivers, and therefore were the participants in the present study. The Second Researcher (the author), who was to play the role of the "stranger" during the separation-reunion procedure, did not initiate any interaction with the parent or child. She busied herself with unloading equipment and setting up the videocamera. (The need for this behavior was explained to parents prior to our arrival). The videocamera was set up in such a way as to ensure filming of both the play interaction area and the door through which the caregiver would leave and return to the home.

Once the equipment was set up, the First Researcher brought a standardized basket of toys into the center of the room where the play interaction was to take place. She invited the parent and child to play with the toys, and then unobtrusively left the house. The Second Researcher remained and videotaped the play interaction. Parents were not given any instructions concerning how to interact with their children. After 8 min of interaction the Second Researcher signaled the parent (by coughing) to leave the house and join the First Researcher outside. The child was unaware that her or his parent's departure was initiated by the researchers. Parents were not given any instructions concerning how to explain their departure to their child, except that they were asked to say to their child, "Stay here until I get back." This was an attempt to keep the child in the same room as the videocamera. Many parents said more than the standard phrase. The child's reaction to the parent's departure and the child's behavior during separation were videotaped. After approximately 3 min the parent returned and rejoined the child for an additional 3 min of play interaction. At the end of this 3 min reunion episode the First Researcher returned to the house.

Parent interview. After the separation-reunion procedure was complete, the Second Researcher interviewed the parent while the First Researcher administered the Stanford-Binet Intelligence Scale: Fourth Edition to the child in another section of the house. The 1–2 hr interview covered a broad range of topic areas. Parents were asked about any difficulties they were experiencing with their children, children's daily routines, children's likes and dislikes, their behavior with peers and with the family, attachment security, and indiscriminate friendliness. As part of the interview, parents were asked about conditions in the orphanage from which their child was adopted. Parents were asked whether their child was dirty or soiled in the institution (0 = yes, 1 = no) and whether toys were available for children to play with (0 = no, 1 = yes). Parents were further asked whether caregivers in the institution had favorites and whether their child had been a favorite child. Responses were scored as either 1 or 0 depending on whether the child was a favorite or not. Parents were encouraged

to respond to these questions concerning conditions in the orphanage only if they were certain about the conditions that they had the opportunity to examine. After the interview was completed, the researchers left five questionnaires for the parent to complete and return by mail, including the Child Behavior Checklist (CBCL) for 4- to 18-year-olds (Achenbach, 1991) and the Parenting Stress Index (Abidin, 1990). The entire visit with families lasted from 1½ to 3 hr.

Attachment Measures

Interview measure of attachment security. This measure constituted part of the interview with parents. The attachment security measure comprised the 23 items with the highest and lowest loadings on the security scale of the Waters and Deane Attachment Q-sort (1985). Parents in all three groups were asked to respond to each of the 23 items using a 5 point scale ranging from 1 = "very unlike my child" to 5 = "very like my child." The interviewer read each question aloud to the parent and recorded the parent's responses. Alpha coefficients for this scale were satisfactory: .80 for the RO group, .77 for the CB group, and .78 for the EA group.

Behavioral assessment of attachment. The videotape of each child during the separation-reunion episode was coded using the Preschool Assessment of Attachment (PAA) developed by Crittenden (1992). Crittenden (1992) interprets children's behavior by considering six aspects of quality of attachment: strategy, pattern of behavior, pattern of negotiation, regulation of affect, secure base phenomena, and attachment figure's behavior. The PAA comprises four preschool attachment strategies: Secure (Type B with subtypes reserved, comfortable, and reactive), Defended (Type A with subtypes [A1-2] inhibited, [A3] compulsive caregiving, and [A4] compulsive compliant), Coercive (Type C with subtypes [C1] threatening, [C2] disarming, [C3] punitive, and [C4] helpless), and Defended/Coercive (A/C). Crittenden also includes both a Secure (Other) and Insecure (Other) pattern in her system.

Seven coders were trained by Crittenden to an 80% criterion of agreement with her. After training, five coders, all of whom were graduate students in developmental or clinical psychology, coded the videotapes. None of them had any contact with the families, and they were blind to group membership. All videotapes were double-coded, and reliability estimates were based on 110 videotapes. Percent agreement between the independent coders was calculated prior to discussion. Percent agreement between the two coders for secure versus insecure pattern decisions was 77% (kappa = .54). Percent agreement across secure, typical insecure, and atypical insecure patterns was 75.4% (kappa = .59). All disagreements were resolved through discussion.

Measures of Indiscriminate Friendliness

Five item indiscriminately friendly behavior measure (5IF). This measure comprised part of the interview with parents. Parents were asked five questions assessing (1) whether their child wandered without distress, (2) whether their child was willing to go home with a stranger, (3) how friendly their child was with new adults, (4) whether their child was ever shy, and (5) what their child typically did upon meeting new adults. For each question a child was given a score of 1 if the parent gave a response indicating indiscriminate friendliness. For example, a score of 1 (IF response) was given in response to the question about wandering only if the parent reported that the child wandered and was not distressed at the consequent separation from the parent. If the parent reported that the child either did not wander, or wandered but was then distressed at finding him- or herself separated from the parent, the child would be given a score of 0 on that item. The responses required for a child to receive a score of 1 on the other IF questions were (1) my child is very friendly with all new adults; (2) my child has *never* been shy or made strange with new adults; (3) my child typically approaches new adults, begins talking, asks questions; (4) my child would be willing to go home with a stranger. Parents' responses to each question were audiotaped and were coded categorically by two independent coders who were blind both to the adoption status of the children and to the hypotheses of the present study. Scores on this measure ranged from 0 to 5. Percent agreement for pairs of coders across all items was 90% (RO group), 89% (CB group), and 90% (EA group). Any disagreements between coders were resolved by discussion. The alphas for these items were .72 for the RO group, .69 for the CB group, and .58 for the EA group.

Two-item indiscriminately friendly behavior measure (2IF). In an attempt to assess whether there were group differences on the more extreme items indicating indiscriminate friendliness, a second measure of indiscriminate friendliness was developed using the two most extreme items from the five item measure: (1) child wanders without distress, and (2) child would be willing to go home with a stranger. These items were considered more extreme examples of indiscriminate friendliness because they assessed behaviors that involved willingly leaving an attach-

ment figure and/or not using an attachment figure as a secure base. Scores on this measure ranged from 0 to 2.

RESULTS

Initial analyses were conducted to investigate possible age and gender differences in both children's attachment security scores and their scores on indiscriminate friendliness. There were no age or gender differences on any of the measures; therefore, all subsequent analyses were done without regard to age and gender.

Interrelation of Measures

Attachment patterns and scores on the Attachment Security Interview measure. Independent *t* tests were conducted to determine whether children with secure attachment patterns on the PAA had different scores on the Attachment Security Interview measure from children with insecure patterns on the PAA. RO children who were classified as insecurely attached had marginally lower attachment security scores (M = 84.4) than did RO children classified as securely attached (M = 91.5), $t(41) = 1.79$, $p = .08$. The same result was found between secure (M = 91.1) and insecure children (M = 86.3) in the CB group, $t(41) = 1.77$, $p = .08$. No difference was found on attachment security scores between secure (M = 86.5) and insecure children (M = 87.1) in the EA group, $t(25) = .15$, $p = .88$.

Attachment security scores, attachment patterns, and scores on indiscriminate friendliness. There were significant negative associations between RO children's scores on the indiscriminate friendliness measures and their scores on the attachment security measure: 5IF, $r(46) = -.40$, $p < .01$; 2IF, $r(46) = -.54$, $p < .01$. No significant association was found between indiscriminate friendliness and attachment security in either the CB or EA group. Independent *t* tests were used to examine any possible differences in indiscriminate friendliness between children classified as secure and those classified as insecure with respect to attachment. In all groups (RO, CB, and EA), no differences were found between children classified as secure and children classified as insecure on the 5IF measure of indiscriminate friendliness. Among children in the RO group, however, children classified as insecure scored significantly higher on the 2IF (M = .77) than did RO children classified as secure (M = .31), $t(41) = 2.01$, $p < .05$. It was only the more extreme indiscriminately friendly behaviors (wandering without distress and being willing to go home with a stranger) that differentiated secure and insecure orphanage children.

Table 3 Time 1 and Time 2 Means for All Groups on the Attachment Security Interview Measure

Group	*n*	Time 1	Time 2
RO group**	43	82.2 (10.5)[a]	86.6 (10.3)
CB group	42	87.3 (7.9)	89.3 (8.8)
EA group	26	88.8 (8.6)	86.8 (8.8)

[a] Mean (standard deviation).
** $p < .01$.

Attachment Security Interview Measure

Time 1–Time 2 comparisons. These analyses were conducted only on participants for whom there were both Time 1 and Time 2 data on the interview measure of attachment security. Attachment security scores were correlated from Time 1 to Time 2 in all groups: RO $r(42) = .53$, $p < .001$; CB $r(42) = .54$, $p < .001$; and EA $r(23) = .42$, $p < .04$. Within-group changes in children's attachment security scores were assessed using matched-pairs *t* tests. As shown in Table 3, RO children scored significantly higher on attachment security at Time 2 than they had scored at Time 1, $t(42) = 3.00$, $p < .005$. Children in the CB and EA groups did not score differently from Time 1 to Time 2 on attachment security: CB, $t(41) = 1.64$, *ns*; EA, $t(25) = 1.15$, *ns*. More important, at Time 2, RO children no longer scored differently on the Attachment Security Interview measure from children in the CB group, $t(45) = .96$, *ns*, or the EA group, $t(29) = .44$, *ns*.

Attachment Patterns

Children's attachment patterns were assessed only at Time 2. Table 4 provides descriptive data with respect to the percentage of children in each group displaying particular attachment patterns.

Secure/insecure patterns. Based on the 43 matched pairs of RO and CB children, more of the RO group (63%) than of the CB group (42%) had insecure attachment patterns, Sign test, $p = .07$. Based on the 26 matched pairs of RO and EA children, more of the RO group (58%) than of the EA group (35%) had insecure patterns, Sign test, $p = .07$. There was no difference between the 26 matched pairs of CB children and EA children in terms of insecurity, Sign test, $p = .77$.

Atypical insecure patterns. It was clear from the attachment patterns in Table 4 that RO children dis-

Table 4 Percentage of RO, CB, and EA Children Displaying Each Attachment Pattern

Attachment Pattern	RO Group	CB Group	EA Group
Secure (balanced):	37	58	66
B 1–2 (Reserved)	4.6	37.2	18.5
B 3 (Comfortable)	13.9	18.6	29.6
B 4 (Reactive)	4.6	2.3	14.8
Secure (Other)	13.9	0	3.7
Defended (A):	28	26	22
A 1–2 (Inhibited)	16.2	20.9	18.5
A 3 (Compulsive Caregiving)	11.6	2.3	3.7
A 4 (Compulsive Compliance)	0	2.3	0
Coercive (C):	14	16	11
C 1–2 (Threatening Disarming)	13.9	13.9	11.1
C 3 (Punitive)	0	0	0
C 4 (Helpless)	0	2.3	0
Defended/Coercive (A/C)	12	0	0
Insecure (Other)	9	0	0

played several of the more atypical insecure attachment patterns in Crittenden's system. The atypical insecure patterns were viewed as patterns that were both less common and more extreme (i.e., A3, A4, C3, C4, A/C, and IO). Based on the matched pairs of participants, significantly more of the RO children (52%) than of the CB children (17%), and significantly more RO children (35%) than EA children (11%), displayed atypical insecure patterns, both Sign tests, $p < .006$. Moreover, even among children classified as secure, there was a tendency toward more atypical patterns in the RO group. For example, six of the 16 secure children in the RO group were classified as Secure-Other, whereas only one of the 42 children classified as secure in the two comparison groups displayed a Secure-Other pattern.

Indiscriminate Friendliness

Time 1–Time 2 comparisons on five item indiscriminately friendly behavior measure (5IF). Time 1–Time 2 changes in children's indiscriminate friendliness could only be assessed for 29 children in the RO group and 25 children in the EA group. Within-group changes in indiscriminate friendliness scores from Time 1 to Time 2 were assessed using matched-pairs t tests. RO children continued to display as much indiscriminately friendly behavior at Time 2 ($M = 2.5$) as they had displayed at Time 1 ($M = 2.6$), $t(28) = .23$, $p = .82$. In contrast, EA children scored significantly lower on indiscriminate friendliness at Time 2 ($M = .76$) than they had scored at Time 1 ($M = 1.6$), $t(24) = 3.80$, $p < .001$.

Providing corroborative descriptive evidence for these findings, as part of the interview parents were asked whether they would describe their children as "overly friendly." Seventy-one percent of parents of RO children described them as "overly friendly," and 90% of parents reported either little or no improvement in this behavior over time.

Group differences on indiscriminate friendliness measures at Time 2. Based on their scores on the 5IF measure, RO children displayed significantly more indiscriminately friendly behavior $M = 2.5$ than did CB children, $M = .93$, $t(45) = 5.24$, $p < .001$ (based on 46 matched pairs). They also displayed more ($M = 2.7$) than did EA children, $M = .73$, $t(29) = 6.08$, $p < .001$ (based on 30 matched pairs). The CB and EA children did not differ in terms of indiscriminate friendliness, $t(29) = .74$, $p = .46$ (based on 30 matched pairs). Between-group differences on each of the indiscriminately friendly items were analyzed using Sign tests. RO children displayed each indiscriminately friendly behavior significantly more than both CB and EA children (all $ps < .02$). Matched pairs of CB and EA children did not differ significantly on any item. RO children also scored significantly higher on the more extreme measure of indiscriminate friendliness (2IF) than both CB children (Sign test, $p < .001$) and EA children (Sign test, $p < .001$). Children's scores in the CB and EA groups did not differ (Sign test, $p = .62$).

To summarize, 3 years after adoption, orphanage children (RO group) did not score differently from comparison children on a parent report measure of attachment security. Orphanage children did, however, display significantly more insecure attachment patterns than did both Canadian-born and Early

adopted children, who did not differ in terms of their attachment patterns. Perhaps more important, orphanage children displayed significantly more atypical attachment patterns than did children in the two comparison groups. Moreover, on both measures of indiscriminate friendliness, orphanage children scored significantly higher than children in the two comparison groups. Early adopted children, who had experienced little or no time in institution, did not differ from Canadian-born children on either measure of indiscriminate friendliness.

Correlates of Orphanage Children's Attachment Patterns

All of the following analyses were restricted to the group of orphanage children (RO group). In examining correlates of RO children's attachment patterns, differences between children classified as secure and children classified as insecure were first considered. In the event that significant differences were found between secure and insecure children, differences between RO children classified as secure, typical insecure, and atypical insecure were then examined.

Child and family characteristics. RO children's scores on the child and family characteristics are presented in Table 5. Insecure RO children displayed significantly lower IQ scores than secure RO children, $t(41) = 2.09$, $p < .04$. Insecure RO children scored significantly higher than secure children on both the Total CBCL, $t(38) = 2.22$, $p < .03$, and on the Externalizing Dimension of the CBCL, $t(38) = 2.65$, $p < .01$.

In terms of family characteristics, parents of RO children with insecure patterns reported significantly more parenting stress, $t(36) = 2.17$, $p < .03$, and significantly more stress in the Child Domain, $t(36) = 2.23$, $p < .03$, than did parents of children with secure patterns. SES was the only demographic variable that distinguished secure and insecure RO children. Families of insecure RO children came from significantly lower SES backgrounds, $t(40) = 2.23$, $p < .04$.

To examine the extent to which these differences in child and family characteristics were the result of the scores from children with atypical insecure patterns, one-way ANOVAs were conducted testing differences among secure children, typical insecure children, and atypical insecure children in the RO group. Significant differences among groups were found on children's IQ scores, $F(2, 40) = 6.26$, $p < .004$, children's Total CBCL scores, $F(2, 37) = 4.00$, $p < .03$, their scores on the Externalizing dimension of the CBCL, $F(2, 37) = 4.52$, $p < .05$, and on SES, $F(2, 39) = 4.14$, $p < .02$. Pairwise comparisons using the Newman-Keuls procedure revealed that atypical insecure children scored lower ($M = 73.1$) than both secure ($M = 90.8$, $p < .05$) and typical insecure children ($M = 88.4$, $p < .05$) on the Stanford-Binet. Atypical insecure children also scored significantly higher ($M = 53.3$) than secure children ($M = 27.5$) on the Total CBCL ($p < .05$) and on the Externalizing dimension (*M*s = 19.9 and 9.1, respectively) of the CBCL ($p < .05$). Families whose children were classified as atypical insecure came from significantly lower SES backgrounds than families whose children were classified as secure.

Table 5 Child and Family Characteristics Associated with Secure and Insecure Attachment Patterns in RO Children

	Secure			Insecure		
Characteristics	*n*	*M*	*SD*	*n*	*M*	*SD*
Stanford-Binet IQ*	16	90.8	14.9	27	80.5	16
CBCL total score*	16	27.5	18	24	45.5	28.9
Internalizing		3.2	4.2		6.1	5.9
Externalizing**		9.1	7.2		17.4	11
Total PSI*	16	205.9	41.8	22	238.4	48.0
Child Domain (PSI)*	16	94.8	19.7	22	113.0	27.9
Parent Domain (PSI)	16	111.1	26.3	22	125.4	22.9
No. of children in family	16	2.5	2.4	27	3.0	2.5
Mother's education	16	14.8	2.6	27	13.4	2.0
Father's education	13	15.3	2.8	25	13.9	4.3
SES*	16	55.8	11.3	26	46.3	14.5
Mother's age	16	39.1	5.9	27	37.3	5.8
Father's age	13	39.3	6.5	25	40.6	7.1

* $p < .05$; ** $p < .01$.

Table 6 Child and Family Characteristics Associated with RO Children's 5IF and 2IF Scores

Characteristics	*n*	5IF[a]	2IF[b]
Stanford-Binet IQ	43	−.17	−.26
CBCL total score*	42	.41**	.60***
Internalizing*		.17	.39*
Externalizing**		.43**	.59***
Total PSI*	40	.48**	.58**
Child Domain*		.46**	.57***
Parent Domain*		.42**	.50**

[a] 5IF = five-item measure of indiscriminate friendliness.
[b] 2IF = two-item measure of indiscriminate friendliness.
* $p < .05$; ** $p < .01$.

Correlates of Indiscriminate Friendliness in Orphanage Children

Background characteristics. Given that indiscriminate friendliness was particularly associated with children who had institutional experience, several aspects of children's orphanage and family experience were considered in an attempt to better understand this behavior. RO children's indiscriminate friendliness was unrelated to all but one of the institution variables[2] examined in this study. Children's scores on both the 5IF and the 2IF were significantly correlated with the child having been a favorite in the institution, 5IF, $r(38) = .44$, $p < .01$; 2IF, $r(38) = .34$, $p < .05$. Children scoring higher on measures of indiscriminate friendliness were more likely to have been favorites in the institution.

Child and family characteristics. Correlations between child and family characteristics and RO children's scores on the measures of indiscriminate friendliness are presented in Table 6. RO children's scores on both the 5IF and the 2IF were significantly correlated with both their Total scores on the CBCL and their scores on the Externalizing dimension of the CBCL. Children's scores on the Internalizing dimension of the CBCL were significantly correlated with only the 2IF. Children's scores on both the 5IF and the 2IF were significantly associated with parents' total scores on the PSI and scores in both the Child and Parent Domains.

2. The other institution variables that were examined in this study were: total time in institution, quality of the institution (rated on a 5 point scale by a Romanian physician familiar with the particular orphanages from which children were adopted), the quality of children's physical care (as rated by parents when they first met their child), and whether children had toys to play with in the institution.

DISCUSSION

Two different measures of attachment were used in the present study. The first of these was the 23 attachment items from the Waters and Deane Q-sort (1985), used at both Time 1 and Time 2. One of the limitations at Time 1 (Chisholm et al., 1995) was that these items had never before been used in a questionnaire format. In spite of that limitation, they reliably differentiated RO children from both CB and EA children. In the present study (Time 2), children's scores on the attachment security items were associated with children's behavior problems and parenting stress in ways consistent with attachment theory and research. For example, children with high scores on the CBCL scored low on attachment security, and high parenting stress scores were associated with low attachment security.

In contradiction to claims in the early literature on institutionalized children (Goldfarb, 1955; Spitz, 1945), the RO children in the present sample were able to form attachment relationships with their adoptive parents. Although Tizard and her colleagues (Hodges & Tizard, 1989; Tizard & Hodges, 1978; Tizard & Rees, 1975) found that institutionalized children were able to form attachments with their caregivers after having spent their first few years in institution, it is important to note that the institutions from which Tizard derived her sample reflected far better conditions than the reported conditions in Romanian orphanages (Chisholm et al., 1995). The present findings, therefore, extend those of Tizard, demonstrating that children exposed to more extreme institutional conditions also were able to form attachment relationships.

Although all of the RO children formed attachments, significantly more of them displayed insecure attachment patterns than children in both the CB and EA groups. This supports recent work on a sample of Romanian adoptees living in the Toronto area: Handley-Derry et al. (1995) found significantly fewer secure attachments among Romanian adoptees than among a normative sample of healthy 4-year-olds. The findings from both of these studies demonstrate that parents who intend to adopt internationally must be concerned about their children's social-emotional development as well as developmental delay, medical problems, and behavioral concerns.

The present findings suggest that when the attachment process does go wrong in previously institutionalized children, it may go very wrong. Significantly more RO children than CB or EA children displayed atypical attachment patterns, patterns that

some researchers have suggested are risk factors in the development of psychopathology (Carlson & Sroufe, 1995; Crittenden, 1988a). Such patterns (particularly A/C and insecure [other]) are rare in normative samples of children, and are more often found in clinical samples of maltreated infants (Speiker & Booth, 1988) and children (Cicchetti & Barnett, 1991; Crittenden, 1988a, 1988b), or in children whose parents display some form of psychopathology (Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985; Teti et al., 1995).

Insecure RO children, particularly those who displayed atypical insecure patterns, had lower IQs and more behavior problems, came from lower SES backgrounds, and their parents experienced more stress. Although the direction of effects is impossible to evaluate, these influences can be examined using a transactional argument (Sameroff, 1983). For example, it may be that these children's behavior problems led to more stress for their parents; more stress interfered with the parent's ability to be sensitively responsive to her or his child's cues; this compromised the security of attachment and led to more acting-out behavior on the part of the child, and a cycle had begun. In these cases there was an unfortunate coming together of children with problems, and parents who were overwhelmed by those problems. On a practical level this may mean that parents need to be more than merely adequate parents to deal with children from orphanages. Theoretically, this argument supports suggestions in the attachment literature of the importance of considering the attachment relationship in the broader social context of the family system (Belsky & Isabella, 1988; Belsky, Rosenberger, & Crnic, 1995). As well, the present relation between family variables and children's attachment patterns supports the recent theoretical argument of Cummings and Davies (1996), who propose that children's emotional security derives from several aspects of family functioning.

The EA group displayed significantly more secure attachments than the RO group, and, consistent with my hypothesis, the EA group did not differ from CB children in terms of attachment. Because such children were adopted before they were 4 months of age, there was no reason to expect that the development of attachment in this group would differ from children in the CB group, because attachment was developing on time, and such children had not experienced the duration of neglect experienced by RO children. This finding also supports work on attachment in a foster-care sample of children (Stovall, 1997; Tyrrell & Dozier, 1996). Dozier and her colleagues have found that foster parents report more difficulties with respect to attachment among children placed in care after 6 months of age than in children placed in care before 6 months of age.

The present research provides substantial evidence that indiscriminately friendly behavior is characteristic of children who have experienced early institutionalization. Unlike many of the behaviors associated with institutionalization (e.g., stereotypies), children's displays of indiscriminate friendliness generally did not decrease during the first 2 to 4 years in their adoptive homes. Indiscriminate friendliness may serve an adaptive function in an orphanage, where resources are extremely limited. Amid the passivity of the majority of children, an indiscriminately friendly child may receive what little attention caregivers have time to give. This possibility is supported by the finding that indiscriminate friendliness was positively associated with having been a favorite in the institution.

What function would this behavior have post-adoption? Research on other children who have experienced extreme neglect in the context of their own families provides one possibility. Crittenden (1988b) described children who had experienced neglect as very passive and cognitively delayed in their first year of life. Once such children were able to locomote on their own, however, they were able to provide themselves with the stimulation that they were lacking. Crittenden (1988b, p. 173) claimed that neglected toddlers became "uncontrolled seekers of novel experiences. They roamed their homes and yards without restraint and created effects wherever they went." For RO children, their indiscriminate friendliness might also reflect a need for stimulation after their unstimulating early lives.

Another possibility is that after such extreme deprivation in orphanage, children began to learn that adults were responsive and would take care of their needs. This might also explain why indiscriminate friendliness is not diminishing in RO children; initially it is a behavior that is reinforced by both parents and strangers. At Time 1, parents were pleased that their child was warm and loving and appeared to be fond of everyone; only three parents in the RO sample reported indiscriminate friendliness in their children as a behavior of concern (Chisholm et al., 1995). It was probably the case that children adopted from Romanian orphanages received much more attention from strangers than the average child, given the media attention surrounding the events in Romania. According to their parents' reports, RO children were often approached, talked to, and hugged by to-

tal strangers, so it is not so difficult to imagine that they felt that such behavior was appropriate. Initially, this may be not unlike the indiscriminate behavior we see in infants prior to the formation of a discriminate attachment.

Does this mean that RO children are indiscriminate in terms of attachment? This may be one interpretation of their behavior. RO children who had high scores on indiscriminate friendliness scored low on the attachment security measure. When children's attachment patterns are considered, however, the results are less clear. Insecure RO children scored significantly higher than secure RO children only on the more extreme measure of indiscriminate friendliness (2IF). The 2IF measure includes wandering without distress and being willing to go home with a stranger, items that explicitly evaluate the lack of secure base behavior. The other measures of indiscriminate friendliness, however, do not differentiate secure from insecure children.

Given that even RO children classified as secure display indiscriminate friendliness, I cannot agree that their indiscriminate friendliness should be equated with attachment disorder (Zeanah, 1996). The more extreme indiscriminately friendly behaviors do seem to be associated with insecure attachment, but much of the indiscriminate friendliness displayed by RO children (i.e., eagerly approaching strangers, asking questions, never having been shy) is not directly linked to their attachment to parents.

Children's experience in Romanian orphanages constituted a risk factor for the development of attachment. The dramatic environmental change brought about by children's adoption provided the opportunity to overcome early deprivation. Given an optimal environment with few stressors, RO children were able to form secure attachment relationships with their adoptive parents. Early institutional experience had an impact on security of attachment only when coupled with other stressors. In families where difficult child behaviors were combined with parents who were experiencing stress, children developed insecure attachments. This is consistent with researchers' contention that one risk factor in isolation does not lead to an increased probability of risk for psychopathology. Rather, it is the combination of several risk factors working together that substantially increases the likelihood of future difficulty (Belsky et al., 1995; Rutter, 1985).

Romanian orphanage children generally arrive in their adoptive homes in very poor condition. Dealing simultaneously with a large number of problem areas (medical, intellectual, social emotional, behavior problems) requires an exceptionally high commitment from parents, one that is much greater than that required of most parents, and more stress-producing. The fact that a sizable number of adoptive parents of children from Romanian orphanages have been successful in promoting secure attachments in their children is a considerable and laudable achievement.

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