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Peer Relations in Early Childhood Contexts

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Early Peer Interaction in Group Care as Related to Infant-Mother and Infant-Care Provider Attachments

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The present study aimed to explore social origins of peer interactions from the perspective of attachment theory. After five months of experience in child care, 34 infants averaging 15 months of age were videotaped with their peers during free play in the group without care providers involved. Four types of interactional tendencies, i.e. contact seeking, possession conflicts, object exchanges, and play were registered for the target infant as being most prevalent in interpersonal activities with peers. Furthermore, the security of infants' attachments to their mothers was assessed prior to child-care entry and those to primary care providers, five months later. Associations of infants' attachments and infants' interactional tendencies were stronger for infant-care provider attachments than for infant-mother attachments. Especially long play times with a few peers were typical for infants with secure attachments to care providers, whereas lower rates of possession conflicts and object exchanges were found to be linked to infants' attachment security to their mothers.

Keywords: attachment security, contact seeking, possession conflicts, object changes, play

Major advances in the study of early peer relationships have derived primarily from examinations of individual differences in interactional tendencies and regulations of emotions (for an overview see Rubin, Bukowski, & Parker, 2006; Lamb & Ahnert, 2006). Early individual differences in cooperative, sharing and helping behaviors foreshadow the quality of peer interactions in a way that infants' prosocial aspects in peer play predict socially competent activity in middle childhood (e.g., Howes & Phillipsen, 1998). The prerequisites of these individual differences in interactional tendencies of infant and toddler peers, however, are not well understood. Students of attachment theory propose that much of the social competence in children is shaped by attachment experience with the primary attachment figure, usually the child's mother. So-called inner working models (IWMs) mentally represent the attachment experiences of children with their mothers from early on, and are thought to be templates for later relationships. IWMs of infant-mother attachments vary, however, based on the quality of maternal care which is mainly defined by evidence as to whether infants are able to gain security and emotional balance in the presence of the mother as a secure base from which they can explore the environment (see Bowlby, 1969; Sroufe & Waters, 1977). Because emotional state and behavioral adjustment is best met in children of secure attachment experiences, associations of secure attachments and interactions with peers lead to the following central assumptions: (1) Securely attached infants who better explore their environment might be more open-minded towards peers as opposed to insecurely attached children who experience less emotional support in their lives (e.g., Elicker, Englund, & Sroufe, 1992). (2) Securely

attached infants whose experience and expectations for social interactions thought to be joined with responsive modeling of relationships (e.g., Pastor, 1981), might handle peer interactions more successfully than insecurely attached children. (3) Because secure attachments are the foundation of authentic communication of emotions (Cassidy, 1994), securely attached infants might well understand emotions, and thus be able to build on harmonious relations among peers.

According to past research, children who are securely attached to their mothers, have been described as more attractive and popular play partners who are able to engage in more intense and conflict-free play with their peers, as well as able to share more positive affection than children with insecure attachment experience at home (LaFrenière & Sroufe, 1985; Lyons-Ruth, Alpern, & Repacholi, 1993; Park & Waters, 1989; Waters, Wippman, & Sroufe, 1979). More recent studies often miss the link between attachment security and peer interactions (Fagot & Kavanagh, 1990; Howes, Matheson, & Hamilton, 1994; Turner, 1991), especially when infants start to develop additional adult attachments while also developing peer relations. Research in child care has shown, for example, that care providers might be very influential on behavior and emotion regulations of children whom they care for. For example, Kienbaum (2001) demonstrated that warm behaviors of care providers improve empathy in individual children, which consequently enhance prosocial behaviors in child groups. Moreover, care providers can become significant persons to these children, and most often develop attachments. Ahnert and Harwardt (2008) assessed child-care provider attachments in child care centers and demonstrated that secure attachments to the providers were linked to harmonious peer play, but also to mastery motivation and eagerness to learn, carrying on through to school. In an early study by Oppenheimer, Sagi, and Lamb (1988), the secure attachments to the providers appeared even more influential on goal-directed behaviors at school than children's attachments to their mothers. Nevertheless one can claim that both attachments, to mother and care provider, might be influential on child's interactional tendencies in peer groups. The present paper therefore aims to explore how emerging infant-care provider attachments in child care centers shape infants' peer interactions, while infants' primary attachment experience with the mother influences infants' behaviors with peers in child care. Because child-care provider attachments are developmentally and functionally different from child-mother attachments (Ahnert, Pinquart, & Lamb, 2006), we expect different impacts of these attachments on children's interactional behaviors with peers.

However, it is difficult to vision how infants' interactions with adults shape activities in peer contexts. Clearly, parental interaction styles are fundamental while children learn about how to initiate and structure dialogues. The asymmetrical structure of child-adult relations, however, in which an adult leads and dominates the interaction processes, can in general not be used as an appropriate template for child-peer relations. Thus, only some interactional experiences with adults fit into peer communication and correspond with some types of interaction patterns among peers. In contrast, other types of interaction patterns directly derive from the interpersonal functioning among peers. For example, Mueller (1991) suggested that all kinds of imitations with

regards to behaviors, gestures and facial expression between mother and child, as well as patterns of point-and-name or give-and-take, also found in mother-child interactions, correspond with patterns among peers as having the purpose of seeking and maintaining contacts by imitating a peer, sharing references or changing objects. We therefore assume that infants who are securely attached to their mothers are more engaged in seeking contact and sharing affections/ideas and are less involved in pure object exchanges when they encounter peers. These securely attached infants might also bring well elaborated expectations to the peer interactions, and as a consequence, might select peer interactions more carefully than insecurely attached infants. We thus expect securely attached infants to be oriented towards few close relationships that they can exploit deeply while intensifying the peer interaction.

On the other hand, patterns in peer interactions which are not used in child-adult interactions and are only observed among peers were determined as various types of play behaviors or possession struggle (see Mueller, 1991; Viernickel, 2000). Possession struggle is considered a cornerstone in a child's building-up process of the self-concept (Caplan, Vespo, Pedersen, & Hay; 1991; Hay, Castle, & Davies, 2000), and highly prevalent among young peers as it is a part of children's play behaviors. Play behaviors in early childhood mirror the social capacities of different ages, and therefore reliably indicate the quality of peer interaction (Howes, 1988; Werebe & Baudonniere, 1991). Both play behaviors and possession conflicts are under supervision of care providers, however, regulating behaviors and emotions in peer groups at child care centers. Given the fact that care providers might affect children's behaviors significantly, we assume that infants who are securely attached to their providers might demonstrate both intense play behaviors and less involvement in possession conflicts.

Method

Participants

Infants and families. The study was carried out in Berlin/Germany using a sample of 34 infants (16 males; 29 firstborns) averaging 15 months of age. In more detail, infants were between 11 and 18 months old ($M = 14.6$ months, $SD = 1.2$) at the time of child care entry, and had all been born at term. They were healthy and their Bayley Mental Development Index (MDI) (Bayley, 1993) scores averaged at 105.4 ($SD = 9.1$). Infants had also been reared in their families with their mothers as primary caretakers, until enrollment in child care. A comparison with the sociological microcensus of Berlin around that time indicated that the parents were representative of middle-class families in Berlin.

Child care centers. We visited each target infant separately in his or her group in different child care centers. Thus, 34 child care centers located in four different parts of Berlin (Prenzlauer Berg, Pankow, Friedrichshain, and Marzahn) were involved in the study. The centers were licensed by the Senate of Berlin, which provides curricula,

conducts routine checks and supervisory visits to ensure high quality care (according to Infant/Toddler Environment Rating Scales by Harms, Cryer, & Clifford, 2003). Each center served between 70 and 120 children, and mandated care provider-child ratios of between 1:6 and 1:8 in the groups. The target infants were placed in groups with a mean of 10.8 infants ($SD = 1.4$) averaging 13.4 months of age ($SD = 2.7$).

Care providers. Thirty-four primary care providers, ranging in age from 24 to 43 years ($M = 26.3$ years) with between 3 and 22 years of child care experience, took part in the study. 4.5% of the care providers had only recently finished a 3-year course at one of the medical colleges, and were thus the least experienced. All of the care providers came from middle-class backgrounds, and most were head teachers in the group settings.

Procedures and Measures

Overall procedure. The sample belongs to a larger study that dealt with adaptation to child care (see Ahnert & Lamb, 2000; Ahnert, Lamb, & Seltenheim, 2000). Therefore, each target child was observed prior to child care entry, using the "Strange Situation" (see below) to assess the quality of infant-mother attachment. After the infants had been in child care for 5 months, we observed the infants again in the Strange Situation but with the care provider present, in order to evaluate that relationship. In addition, peer interactions of each target child were videotaped in the fifth Month. At that time, all infants were enrolled for approximately 40 hours per week.

Attachments. Infants were observed in Ainsworth and Wittig's (1969) Strange Situation with their mothers, prior to child care entry and with their primary child care providers about five months later. These care providers had been the "strangers" when mothers were observed in the Strange Situation, shortly before enrollment in child care. Infants were considered "nonattached" to their care providers when they did not socially reference them more in the second Strange Situation than in the first. Thirty eight percent of the 134 tapes were coded independently by two of four coders (the first author, her assistant Katrin Seltenheim, Karin Grossmann, and Fabienne Becker-Stoll) using Ainsworth et al.'s (1978) and Main and Solomon's (1990) classification system. The inter-rater reliability, assessed using Cohen's kappa, reached 0.81. As a result, infants were more likely to have secure attachments to their mothers (56%) than to their care providers (47%), $\chi^2(1, N = 34) = 2.8, p < .05$ (see Table 1). As a result of the combined experience of secure (e.g. [B] category) and insecure attachments (e.g. [A] or [C] or [D] or non-attached category) of a target child with her mother and care provider, infants who were securely attached to their mothers but insecure with their care providers (29%) were almost as frequent as infants who were insecurely attached to both their mothers and care providers (25%). However, 26% of the infants were securely attached to both mother and care providers, and infants who were insecurely attached to their mothers and securely attached to their providers were least frequent with 20%.

Table 1. Patterns of Attachment to Mothers and Care Providers

	Attachment Classification					Total
	Secure [B]	Insecure-avoidant [A]	Insecure-ambivalent [C]	Disorganized [D]	Non-attached	
Mother	19 (56%)	13 (38%)	1 (3%)	1 (3%) ^b	—	34 (100%)
Care provider	16 (47%)	12 (35%)	2 (6%)	2 (6%) ^a	2 (6%)	34 (100%)

Note. ^a1 D/B2; ^b1 D/A1, 1 D/B2.

Peer behaviors. Peer behaviors were coded from the videotapes which taped each target child in the group context at the child care center for over 60 minutes, usually during times of free play. We cut out a 30-minute window displaying the target child with only his or her peers, but without a care provider involved. In preliminary analyses of five videotapes, we selected the behavioral units significant for the research questions to be examined in the present study. Based on suggestions by Mueller (1991) as well as Viernickel (2000), who stressed three domains in interactional tendencies among peers, such as socializing, play and conflict, we defined the codes according to the most frequent behavioral units from these domains (see Table 2).

Later on, the behavioral units were used to quantify the input from all target children of the sample on peer interactions. These units were marked on a second-by-second basis using a computer-linked program that preserved the frequencies and summed the total duration of the target child's behavior units (Noldus Information Technology, 2005). Fifteen coders rated the tapes after having participated in three group training sessions, during which the behavior units were observed, discussed and allocated to the codes. As a result, four behavior units were prevalent: (1) contact seeking, (2) possession conflict, (3) object exchange, and (4) a special age-appropriate type of play where peers played parallel nearby which is considered a pre-type of cooperative interchange (see Table 2). Furthermore, the coders also marked whether the behaviors had been initiated by the target child or his or her counterpart, and how many peers were involved. As a result, frequencies and duration of the behavioral units, as well as frequencies of their initiations by the target child were available. Furthermore, to assess reliability of the coding, randomly chosen periods were independently rated by two or more coders on a second-by-second basis. High levels of intercoder agreement were maintained, with Cohen's kappas ranging from .76 to .83.

Results

Attachment and selections in peer interaction

We first tested whether infants' attachment experience was associated with the number of peers involved in the interaction. A two-factorial MANOVA assessed the

effects of infants' attachments (infant-mother attachment vs. infant-care provider attachments as factors) on peer selection using the numbers of peers as the independent variable. Contrary to the assumption, there was no main effect of infant-mother attachments on the number of peers with whom the target infants interacted. However, the MANOVA yielded a main effect of infant-care provider attachments on the numbers of peers involved, $F(2, 29) = 5.2, p < .05$, suggesting that infants who were securely attached to care providers interacted with fewer peers than infants who were insecurely attached to their care providers. Frequencies of interaction, however, were similar, regardless of the numbers of peers with whom the infants interacted. Consequently, the interaction processes with few peers, as opposed to more peers, were of higher intensity (see Table 3).

Table 2. Selected Behavioral Units to Represent Infants' Activities in Peer Interaction

Behavioral units / codes	frequency	averaged duration [M (SD) in sec]
Socializing and play behavior		
<i>Contact seeking</i> : target child intensively looks at peer, stands up directly in front of the peer or imitates peers' behaviors	49	5.1 (.9)
<i>Parallel, imaginative play</i> : target child parallels or imitates activities with or without objects, mostly in a symbolic or imaginative way	38	8.1 (1.3)
<i>Object exchange</i> : target child offers a toy or takes a toy offered by a peer	31	5.4 (1.1)
<i>Motor copy</i> : target child imitates peer's motor behavior and often wants to be imitated	14	3.3 (.8)
<i>Helping/comforting</i> : target child helps or comforts a peer	12	3.3 (.9)
<i>Fun and nonsense</i> : target child creates or maintains affections	10	1.9 (1.1)
<i>Shared reference</i> : target child directs peers' attention to objects/persons/situations while pointing at and approaching at her/him	9	2.1 (.9)
<i>Rough & tumble play</i> : target child fights playfully with a peer and seems to like it; no aggressive intentions or signs of anger	5	3.0 (1.5)
Conflict behavior		
<i>Possession conflict</i> : target child tries to take a toy from a peer while the peer offends	49	5.5 (1.6)
<i>Conflict about space</i> : target child defends a certain area where a peer tries to get in	6	5.3 (2.1)
<i>Aggression</i> : target child tries to disrupt, bother or hurt a peer	6	4.0 (.9)
<i>Rebuking</i> : target child interprets peer's behavior as a rule violation and rebukes or punishes him/her	6	4.8 (1.1)
<i>Rivalry</i> : target child interferes in a peer's activity with another peer	5	3.9 (1.7)

Note. Only behaviors observed more than 5 times were listed.

Table 3. Averaged Numbers of Peers Involved in Interaction as a Function of Infants' Attachment Experience

	Infant-Care Provider Attachments	
	Secure	Insecure
Infant-Mother Attachments		
Secure	2.7 (.5)	4.3 (.9)
Insecure	2.5 (.4)	3.1 (.6)

Note. Standard deviations regarding the numbers of peers appear in parenthesis.

Attachments as related to contact seeking and object change

Two MANOVAs with infant-mother and infant-care provider attachments as factors, evaluated whether infants' attachments to both mother and care provider affected contact seeking and object changes, respectively, of a target child with his or her peer. Whereas no effects were found for frequencies and duration of contacts of peers, the MANOVA for object changes clearly revealed that securely, as opposed to insecurely attached infants, exchanged significantly fewer objects with their peers, $F(2, 29) = 4.2, p < .05$ (see Figure 1). Infants' relationships to care providers followed the same trend which, however, appeared non-significant.

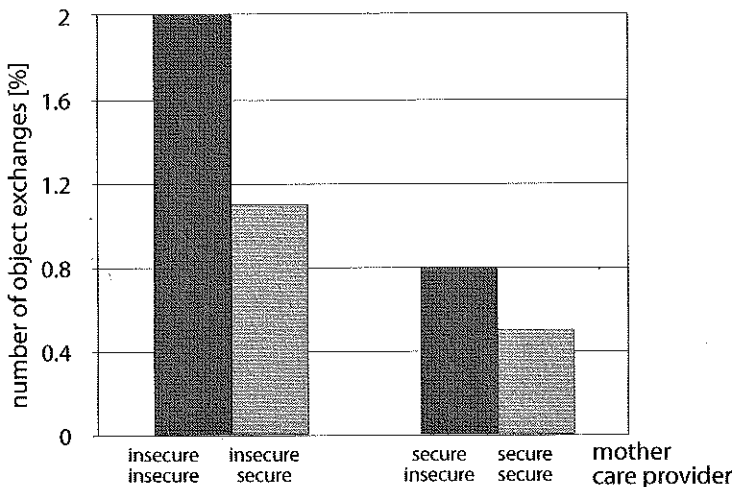


Figure 1. Object changes as related to infant-mother and infant-care provider attachments

Attachments as related to play and possession conflict

Again, two-factorial MANOVAs (infant-mother vs. infant-care provider attachments) were used to assess the impact of infants' attachments on their play behaviors and possession conflicts which had occurred. There was a significant main effect of infant-care provider attachment on the duration of play, $F(2, 29) = 8.9, p < .05$, suggesting that play was much more intensified if infants had developed secure relationships to their providers (see Figure 2a). Similar analyses based on frequencies and initiations of play behaviors by the target infants appeared non-significant.

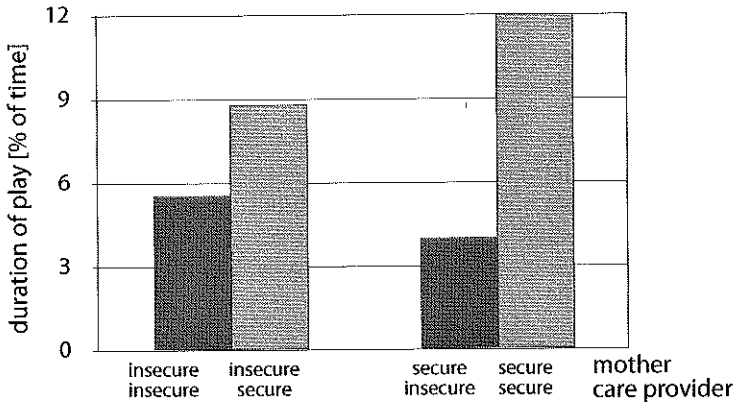


Figure 2a. Play activities as related to infant-mother and infant-care provider attachments

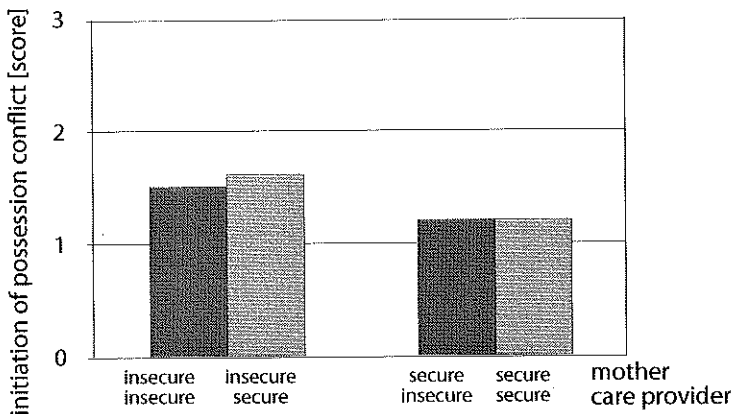


Figure 2b. Possession conflicts as related to infant-mother and infant-care provider attachments

Furthermore, MANOVA showed a main effect of infant-mother attachment on the initiation of possession conflict, $F(2, 29) = 4.3, p < .05$, suggesting that the struggles over toys were associated with infants' relationships to care providers (see Figure 2b). Those infants had less initiated possession conflicts if they were securely attached to their care providers. There were non-significant results when we subjected frequency and duration of observed possession conflicts to the MANOVA.

Attachment and overall quality of peer interaction

To shed further light on the link between infants' attachments and the major interactional tendencies among peers (i.e., the number of peers involved, duration of play, frequencies of object changes and initiatives of possession conflicts), regression analyses were separately performed for infant-mother attachment and infant-care provider attachment. The regression model for infant-mother attachment was significant, with $R^2 = .43, F(4, 27) = 2.4, p < .05$, suggesting that object changes and possession conflicts ($beta = -.21; p < .05$ and $beta = -.20; p < .05$) were most strongly and significantly linked to infants' attachment to the mother. In this way, securely attached infants used less object exchanges while interacting with a peer and initiated less possession conflicts than insecurely attached infants. In contrast, the regression model for infant-care provider attachment was significant, with $R^2 = .68, F(4, 27) = 4.6, p < .001$. Duration of play and numbers of peers selected were associated with infant-care provider attachment the strongest ($beta = .45, p < .001$ and $beta = -.35, p < .05$), suggesting that long play times and few peers were typical for securely as opposed to insecurely attached infants to providers.

Discussion

The present study aimed to explore social origins of peer interactions from the perspective of attachment theory, which has drawn a direct line from infant-mother attachments to peer relations. Based on the proposition that attachments shape behaviors and leave a mental representation, (Inner Working Model: IWM) which also has impacts on infants' functioning in peers, we focused on both the behavioral and the representative level of attachment experience of infants involved in the study. How infants use and adjust the acquired social techniques with the mother for the peer contexts, and how they feel emotionally supported and rewarded in their own explorations of the world, shape infants' self-esteems and prepare them for the challenges with peers. In secure relationships, children not only learn how to reduce negative emotions and enhance positive feelings, but they also become able to balance emotional states. Furthermore, adults share infants' experiences from the world and repair misconceptions and misunderstandings. Through this process, the *secure* infant can naturally develop whereas *insecure* infants miss the evaluation and

embedding of their experiences by an adult leaving the infants with their feelings by themselves in insecurity (Ahnert, 2005). Consequently, good social practice with adults and well developed self-esteem should be the best requirements to manage the interpersonal functioning with peers.

This paper focuses on the entire care ecology of children who are cared for at home and in child care centers. Thus, we analyzed the contribution on peer interactions from infant-mother and infant-care provider attachments, being aware of the fact that the two attachments are functionally and developmentally different (Ahnert et al., 2006). Whereas the infant-mother attachment is usually the primary, highly individualized relation which is most significant in a child's life, the infant-care provider attachment emerges in a group context and perhaps incorporates features of child's position among peers (Ahnert & Lamb, 2000). For this reason, we assumed that the impact of infant-mother and infant-care provider attachment on the interpersonal functioning in peers must be different.

Based on the presented small sample, it has been shown for the first time, that secure relationships to care providers are associated with a tendency to select a few peers and to play with them intensively. Surprisingly, the infant-mother attachment did not confirm this association of attachment and peer selection. Although the IWM of the attachment to the mother is thought to affect the selection of peers, because expectations on social interactions are demanding, infant-care provider attachment was the stronger predictor. This suggests that the context in which the IWM operates is very influential on infant behaviors during that early phase of development. It seems as if the expectations for social partners which normally stem from IWM based on infant's experiences with the mother, are overwritten by the behavioral demands in child care contexts, and additionally influenced by the IWM with infant's care provider. Indeed, care providers directly regulate peer behaviors. Ahnert et al. (2006) argued that the group-oriented behaviors of the care providers are the foundation of their attachments. If the position, which a single child keeps in a peer network, also belongs to the IWM that emerges from the infant-care provider attachment, then infant-care provider attachment and the basic quality of peer interaction might be linked closely together. This explains why the security felt in child care can be a better predictor for high peer selection than infants' attachment experience with the mother, and why past research which omitted the impact of infant-care provider attachment appeared contradictory. Furthermore, infant-care provider attachment varied with the frequency of peer interactions and duration of play activities, confirming how selectively peer interactions in group care are shaped.

Care providers, however, seem to have no significant impact on possession conflicts as presumed. The present study revealed instead a significant link to infant-mother attachment. That is, frequencies of object exchanges and initiation of possession conflicts were associated with infant-mother rather than infant-care provider attachments. Thus, specific interaction strategies and techniques already develop with the primary IWM, leading to special implications for conflict management in group care. To minimize aggression in peer groups from early ages on, however, group care urgently needs strat-

egies which involve maternal care characteristics. If harmonious peer interactions are grounded in a child's self-esteem, infant-care provider relationships are only a small part of the solution. However, much more research on the possibilities and limits of infant-care provider relationships to prevent the early development of aggression is required.

References

- Ahnert, I. (2005). Parenting and alloparenting: The impact on attachment in human. In S. Carter, L. Ahnert, K. E. Grossmann, S. B. Hrdy, M. E. Lamb, S. W. Porges, and N. Sachser (Eds.), *Attachment and bonding: A new synthesis* (pp. 231–246). Dahlem Workshop Report 92. Cambridge, MA: The MIT Press.
- Ahnert, L., & Harwardt, E. (2008). Beziehungserfahrungen der Vorschulzeit und ihre Bedeutung für den Schuleintritt [Relationship oriented experience in preschool and its significance for the school entry]. *Empirische Pädagogik*, 22, 145–159.
- Ahnert, L., & Lamb, M. E. (2000). Infant-care provider attachments in contrasting German child care settings II: Individual-oriented care after German reunification. *Infant Behavior and Development*, 23, 211–222.
- Ahnert, L., Lamb, M. E., & Seltenheim, K. (2000). Infant-care provider attachments in contrasting German child care settings I: Group-oriented care before German reunification. *Infant Behavior and Development*, 23, 197–209.
- Ahnert, L., Pinquart, M., & Lamb, M. E. (2006). Security of children's relationships with non-parental care providers: A meta-analysis. *Child Development*, 77, 664–679.
- Ainsworth, M. D. S., & Wittig, B. A. (1969). Attachment and exploratory behavior of one-year-olds in a strange situation. In B. M. Foss (Ed.), *Determinants of infant behavior* (pp. 111–136). London: Methuen.
- Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the Strange Situation*. Hillsdale, NJ: Erlbaum.
- Bayley, N. (1993). *Bayley Scales of Infant Development*. New York: Psychological Corporation.
- Bowlby, J. (1969). *Attachment and loss* (Vol. 1: Attachment). London: Hogarth Press.
- Caplan, M., Vespo, J., Pedersen, J., & Hay, D. F. (1991). Conflict and its resolution in small groups of one- and two-year-olds. *Child Development*, 62, 1513–1524.
- Cassidy, J. (1994). Emotion regulation: Influences of attachment relationships. *Monographs of the Society for Research in Child Development*, 59, 228–283.
- Elicker, J., Englund, M., & Sroufe, L. A. (1992). Predicting peer competence and peer relationships in childhood from early parent-child relationships. In R. D. Parke & G. W. Ladd (Eds.), *Family-peer relationships: Modes of linkage* (pp. 77–106). Hillsdale, NJ: Erlbaum.
- Fagot, B. I., & Kavanagh, K. (1990). The prediction of antisocial behavior from avoidant attachment classification. *Child Development*, 61, 864–873.
- Harms, T., Cryer, D., & Clifford, R. M. (2003). *Infant/toddler environment rating scale* (Revised edition). New York: Teachers College Press.
- Hay, D. F., Castle, J., & Davies, L. (2000). Toddlers' use of force against familiar peers: A precursor of serious aggression? *Child Development*, 71, 457–467.
- Howes, C. (1988). Peer interaction of young children. *Monographs of the Society for Research in Child Development*, 53, 1–94.

- Howes, C., & Phillipsen, L. (1998). Continuity in children's relations with peers. *Social Development*, 7, 340-349.
- Howes, C., Matheson, C. C., & Hamilton, C. (1994). Maternal, teacher, and child care history correlates of children's relationship with peers. *Child Development*, 65, 264-273.
- Kienbaum, J. (2001). The socialization of compassionate behavior by child care teachers. *Early Education and Development*, 12, 139-153.
- LaParinière, P. J., & Sroufe, L. A. (1985). Profiles of peer competence in the preschool: Interrelations between measures, influence of social ecology, and relation to attachment history. *Developmental Psychology*, 21, 56-69.
- Lamb, M. E., & Ahnert, L. (2006). Nonparental child care: Context, concepts, correlates and consequences. In W. Damon, R. M. Lerner, K. A. Renninger & I. E. Sigel (Eds.), *Handbook of child psychology; Volume 4: Child psychology in practice* (pp. 950-1016). Hoboken, NJ: Wiley.
- Lyons-Ruth, K., Alpern, L., & Repacholi, B. (1993). Disorganized infant attachment classification and maternal psychosocial problems as predictors of hostile-aggressive behavior in the preschool classroom. *Child Development*, 64, 572-585.
- Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the preschool years: Theory, research and intervention* (pp. 121-160). Chicago: University of Chicago Press.
- Mueller, E. (1991). Toddlers' peer relations: Shared meaning and semantics. In W. Damon (Ed.), *Child development today and tomorrow* (pp. 313-331). San Francisco, Oxford: Jossey-Bass.
- Noldus Information Technology (2005). *The Observer*. Wageningen/The Netherlands.
- Oppenheim, D., Sagi, A., & Lamb, M. E. (1988). Infant-adult attachments on the kibbutz and their relation to socioemotional development four years later. *Developmental Psychology*, 24, 427-433.
- Park, K. A., & Waters, E. (1989). Security of attachment and preschool friendships. *Child Development*, 60, 1076-1081.
- Pastor, D. L. (1981). The quality of mother-infant attachment and its relationship to toddlers' initial sociability with peers. *Developmental Psychology*, 17, 323-335.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In W. Damon, R. M. Lerner, K. A. Renninger, & I. E. Sigel (Eds.), *Handbook of child psychology; Volume 3: Social, emotional and personality development* (pp. 571-645). Hoboken, NJ: Wiley.
- Sroufe, L. A., & Waters, E. (1977). Attachment as an organizational construct. *Child Development*, 48, 1184-1199.
- Turner, P. J. (1991). Relations between attachment, gender, and behavior with peers in preschool. *Child Development*, 62, 1475-1488.
- Viernickel, S. (2000). *Spiel, Streit, Gemeinsamkeit: Einblicke in die soziale Welt der unter Zweijährigen* [Play, conflict, sharing: Insights into the social world of infants and toddlers]. Landau: Verlag Empirische Pädagogik.
- Waters, E., Wippman, J., & Sroufe, L. A. (1979). Attachment, positive affect, and competence in the peer group: Two studies in construct validation. *Child Development*, 50, 821-829.
- Werebe, M. G., & Baudonniere, P. M. (1991). Social pretend play among friends and familiar preschoolers. *International Journal of Behavioral Development*, 14, 411-428.

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