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The Contributions of Infant Temperament and Child Care to Infant Social Development

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Abstract

Previous research has documented associations between young children's social development and both temperament and child care quality. The preponderance of research in this area has focused on preschool-age and older children, resulting in few studies focusing on these variables during infancy. In the current investigation, temperament and child care quality were measured through interviews with mothers of 4- to 19-month-olds. Results demonstrated associations between infant personal-social development and both temperament and child care quality. Further analyses revealed that of both temperament and child care quality, only temperament made a unique contribution to the prediction of infant personal-social development. This suggests that the link between child care quality and infant personal-social development is attenuated by the infant's temperament.

A great deal of research has examined links between social competence and infant temperament. For example, Young, Fox, and Zahn-Waxler (1999) discovered that high motor/high affect children as measured at four months displayed more empathy towards an experimenter in a pain simulation at 24 months than did low motor/low affect children. Other researchers have found similar predictive associations between temperament and social development. Spangler (1990) demonstrated that difficult temperament at 12 months was associated with low social competence when play objects were of low interest or when the play partner was a stranger at 24 months. Houck (1999) found similar results, demonstrating that having a more difficult temperament as rated at eight, 12, 24, and 36 months was related to lower social competence.

Investigators have also reported concurrent relationships between temperament and social behavior. Young et al. (1999)'s study of 24-month-olds showed that concurrently, more inhibited infants enacted less prosocial and empathic behavior toward the experimenter than did less inhibited infants. Carson, Wagner, and Schultz (1986) found that 12- to 36-month-olds rated as easy in temperament were significantly more socially competent than children rated as slow-to-warm-up or difficult. Significant correlations were also found for dimensions of temperament, with significant correlations found between measures of greater social competence and better activity level, adaptability, mood, persistence/attention span, rhythmicity, distractibility, and response threshold. Studies with preschoolers have also supported a relationship between temperament and social competence. Mendez, Fantuzzo, and Cicchetti (2002) found that in a sample of low-income African-American children, positive social interaction was related to the temperamental traits of adaptability, social approach, emotion regulation, and activity level. In contrast, high activity and poor emotion regulation were related

to problems with peers for children labeled as “dysregulated.” In general, an overactive temperament was related to such destructive peer play behaviors as refusing to share toys, grabbing toys, whining, and throwing temper tantrums. DiLalla (1998) found that five-year-old children rated as more intense, active, and distractible showed more externalizing behaviors and less prosocial behavior. Thus, in summary, several studies have found associations between temperament and social behaviors across infancy and the toddler and preschool years.

Studies examining links between child care and infant social development have yielded conflicting results. DiLalla (1998) found that preschool boys with no day care experience were less likely to be aggressive than boys with intermediate amounts of day care experience. In a review of relevant research, the NICHD Early Child Care Research Network (2003) reported that the use of child care during the first year of life predicted behavior problems in three- and four-year-olds. Findings from the NICHD project indicated that children who spent more time in child care during the first 54 months of life earned lower scores on measures of caregiver-rated social competence and higher scores on measures of caregiver-rated externalizing behaviors and caregiver-child conflict at 54 months, as well as engaged in more negative dyadic play. In kindergarten, these children showed more mother- and teacher-reported externalizing behaviors and teacher-child conflict. These associations remained significant when child care quality was controlled. Thornburg, Pearl, Crompton, and Ipsa (1990) cited past research that children in day care initiated fewer interactions, were louder, more boisterous, competitive, and aggressive, were less cooperative with adults, and were verbally and behaviorally less compliant with mothers. In a review article, Lamb (1996) highlighted conflicting results in past research. For example, one study reported that children who started day care at age one or two and were in day care for at least two years did not have more behavior problems than children reared at home. Another

study demonstrated that high-quality day care beginning in infancy for low-birth-weight infants related to less behavior problems between 26 and 36 months (Lamb, 1996). Thornburg et al. (1990) reported that children in day care were more independent, self-sufficient, and outgoing; less timid and fearful; more cooperative, helpful, and empathic; and showed more complex, mature, and reciprocal interactions with peers as well as were more considerate and sociable with peers. The NICHD Early Child Care Research Network cited evidence that children at age two complied more at home and in the laboratory when placed in full-time child care. The NICHD Early Child Care Research Network explained that extensive amounts of time spent in child care related to poorer socioemotional adjustment, with amount of time being the crucial variable in resolving disparate findings. Conflicting findings have also been found regarding when enrollment in child care facilitates social competence. Lamb cited one study that showed that there was no difference in social competence between children who entered child care in infancy, toddlerhood, or late toddlerhood. Other studies have supported that children in child care were more socially competent, participatory, and cooperative with unfamiliar peers than children cared for at home (Lamb, 1996). Thornburg et al. (1990) cite past literature showing no difference in social outcomes between children in child care vs. children reared at home. Thus, literature is equivocal regarding the impact of child care on social development.

An important variable to take into account when assessing the impact of child care on infant social development is the quality of that child care. Lamb (1996) reported research that demonstrated that poorer-quality child care was associated with more negative and aggressive peer-based behavior, while children in high-quality centers were more socially competent, happier, and less shy than children who received poorer-quality care. The NICHD Early Child Care Research Network found that higher-quality care predicted greater mother- and caregiver-

rated social competence and fewer caregiver-rated behavior problems and conflict. Fewer transitions of caregivers also has predicted fewer conduct problems and better social skills (Love et al., 2003). Quality of child care has also been linked to frequency of social play with three- and four-year-olds (Lamb, 1996). Hestenes, Kontos, and Bryan (1993) found that there was more positive affect expressed by 37- to 61-month-olds in day care when appropriate caregiving occurred as well as more intense negative affect when teachers were less engaged with their children. There was more intense positive affect when teachers were highly engaged with the children. Research has also shown a difference between formal, regulated care and informal, unregulated care, with children in formal care being more outgoing and extroverted and less shy and anxious than children in informal care (Love et al., 2003). Thus, quality of child care as measured in different ways relates to more positive social outcomes.

Interactions have been found between day care and infant temperament in predicting social behavior. In a review, Hestenes et al. (1993) reported that infants rated higher in smiling/laughing showed more play behaviors at day care than did infants lower in this trait. Infants rated as more soothable showed less negative affect in peer interactions than did less soothable infants. Thus, in this study, temperament played a mediating role in the relationship between day care and infant social development. The NICHD Early Child Care Research Network (2003) found that both difficult temperament and day care characteristics predicted social outcomes. Thus, both infant temperament and day care quality can be hypothesized to relate to and contribute variance to measures of infant social development. This study builds upon previous research and extends it by assessing the relationship between day care quality and social development in infancy, whereas most studies explore this relationship in older age ranges.

Method

Subjects. Subjects were 66 mothers from low-income backgrounds with infants (31 girls) ages 4 to 19 months (mean age = 10.9, SD = 4.8).

Procedure. Individual interviews were conducted in the mothers' homes. Trained graduate students conducted semi-structured interviews that focused on temperament, child care quality, and infant social development as part of a larger study.

Measures. Infant personal-social development was assessed with the age-appropriate Personal-Social scale of the Ages and Stages Questionnaire (Squires, Bricker, & Potter, 1997). Child care quality was measured with a 6-item scale ($\alpha = .70$) developed by the researchers that taps key constructs related to this variable ("How often does your provider talk to you or write notes about how your baby felt or behaved during the day?", "How often does this provider read to your baby?", "How often does this provider take your baby outside?", "How much warmth and enjoyment do you think is given to your baby by this provider?", "What is your overall rating of this provider's sensitivity to your baby?", "How much time does this provider spend providing activities that are made to teach your baby educational skills?"). Infant temperament was measured with the 15 items ($\alpha = .70$) of the Fussy-Difficult scale of the Infant Characteristics Questionnaire (Bates, Freeland, & Lounsbury, 1979).

Results

There was a significant correlation between temperament and personal-social development ($r = .23, p < .05$), with more difficult temperament being related to lower ratings of

social development. There was also a significant correlation between child care quality and personal-social development ($r = .30, p < .01$), with higher quality being related to more positive ratings of social development. A simultaneous linear regression was conducted in which both temperament and child care quality were entered as predictors of infant personal-social development. Findings revealed that only temperament emerged as a significant predictor ($\beta = .12, p < .05$) of infant personal-social development. Child care quality did not significantly add to the prediction of infant personal-social development ($\beta = .09, p = .15$) beyond temperament.

Discussion

Results replicated past research findings that suggest there are significant correlations between infant personal-social development and both temperament and child care quality, with positive temperament and higher child care quality ratings being associated with more advanced social development. In contradiction to such findings as those from the NICHD group (2003), temperament was found in a regression equation to attenuate the relationship between child care quality and infant personal-social development, instead of both contributing independently to social development. The discrepancy between the findings of the current investigation and previous studies that have focused on older children suggests that perhaps different factors are more salient for social development of children at different developmental stages. It seems logical that out-of-home care experiences might be a stronger predictor of social development among older children than among infants, because older children have experienced out-of-home care for a longer duration. Although the current investigation is limited by reliance on self-report data among a fairly small sample, findings from this study suggest it is important to assess

temperament than quality of child care when determining social developmental outcomes for infants, and highlight the complexity of understanding linkages between child care experiences and children's social behavior.

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