Effects of Nonparental Child Care on Child Development: An Update

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Objective: To review the published literature on the effects of nonparental and out-of-home care on infants, toddlers, and preschoolers.

Method: Narrative literature review.

Results: Although substantial controversy persists, the accumulated evidence suggests that nonparental care does not necessarily have either beneficial or detrimental effects on infants and children, although it can have such effects. In some circumstances, careproviders establish relationships with children that have significant effects on development, and this increases the importance of ensuring that careproviders are well trained, behave sensitively, and are stable rather than ephemeral figures in children’s lives. Nonparental care is associated with behaviour problems (including aggression and noncompliance) when the care is of poor quality and opportunities for meaningful relationships with stable careproviders are not available, however.

Conclusion: The effects of out-of-home care vary depending on the quality of care as well as the characteristics of individual children, including their age, temperaments, and individual backgrounds.

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Key Words: day care, nursery school, infants, preschoolers, nonparental care

In parallel with increases in the rates of maternal employment and single parenthood, questions have been raised with increasing urgency concerning the effects of nonparental child care on child development. Furthermore, because of the immediate practical implications of these effects, scholarly research in this area has received widespread attention in the popular media as well. The resulting focus on individual studies, evaluated without consideration of historical, cultural, and socioeconomic contexts, has not served parents well, and considerable misinformation has occurred. My goal is to redress this situation by summarizing scholarly research on the effects of nonparental child care on both infants and preschoolers in an article organized around aspects of development on which nonparental child care might have an impact. Readers are referred to Lamb (1) for a more detailed and extensive discussion of the now voluminous literature.

Frequent reference is made in this article to “quality of care,” a term that has proved harder to define than one might expect. Operationally, quality is indexed using either “structural” or “dynamic” measures. The dynamic measures are designed to assess the quality of the experiences provided for children in child care facilities—notably the affective quality of interactions, the developmental appropriateness of the experiences and stimulation, and the sensitivity of the careproviders’ responses and initiatives. The structural measures index includes aspects of the care setting that should potentiate warm, enriching, sensitive interaction such as staff-to-child ratios, group size, quality of the physical setting, and level of careprovider training and experience. Although individual researchers use a variety of instruments, there is a surprising degree of convergence among the available instruments, suggesting substantial consensus about the components of high-quality care (1,2).

Child–Adult Relationships

Infant–Parent Attachment

Even casual observers acknowledge that infants (and young children) initially respond with distress to enrolment in a new child care setting. This distress diminishes over time, however, to be replaced by smiles, vocalization, and increased interest in peers (3–6). Is this behavioural adjustment benign, or does it signal major underlying changes.
in infants’ attachment relationships, as might be inferred by general- ization from research on institutionalization (7,8)? Does day care fundamentally alter the interactions between infants and their parents—especially mothers, since theorists have never worried that the daily separations accompanying paternal employment might be harmful? Attempts to answer these questions have been controversial, to say the least.

When observed at home with their 5- to 6-month-old and 1-year-old infants, employed mothers and homemaking mothers interact and behave very similarly (9,10), although infants with homemaking mothers are more sociable and engaged when their fathers are also present. Beginning in 1986, however, several attempts to combine data from multiple studies indicated that early-initiated nonparental care adversely affected the security of infant—parent attachment (11–14). Because these conclusions were based on studies in which the Strange Situation procedure was used to assess infant—mother attachment (15,16), Clarke-Stewart (13,17) and Lamb and Sternberg (18) questioned the dependence on a single measure, particularly since the validity and reliability of this measure had been challenged (16). In addition, the results of studies not included in Lamb, Sternberg, and Prodromidis’s (14) reanalyses reveal no or modest associ- ations between day care and attachment security, as assessed using either the Strange Situation or Q-sort ratings (19–22). Perhaps most impressive, however, are preliminary findings from a multisite study of over 1000 infants, the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care, showing no direct link between child care experience and the security of infant—mother attachment at 15 months of age (23).

Few infants in Lamb, Sternberg, and Prodromidis’s (14) data set entered care between 7 and 12 months of age, but the rates of insecurity were higher among these children than among those who entered care between birth and 6 months of age or remained in the exclusive care of their parents. Age of entry was not directly associated with attachment security in the multisite NICHD Study of Early Child Care (23), however. Lamb, Sternberg, and Prodromidis included few children receiving part-time nonparental care, but their results suggested that the rates of insecurity were nonsignificantly higher for those in care for more rather than less than 20 hours a week, whereas Roggman and others (21) found that infants receiving part-time care tended to have more negative outcomes.

Because parents’ decisions about enrolment in day care reflect their values, needs, and circumstances, we must assume that family characteristics may directly affect the extent and timing of maternal employment as well as behaviour in the Strange Situation evaluation (24). Benn (25) reported that employed mothers who provided sensitive and responsive care had securely attached infants, whereas less sensitive employed mothers had insecurely attached infants. Belsky and Rovine (19) reported that differences in maternal personality within the day care group predicted differences in attachment security. Stifter and others (26) found that mothers who returned to work early and reported greater levels of separation anxiety were more likely to behave intrusively and to have insecurely attached infants, however.

At present there is little or no evidence that either family- or centre-based day care is “better” for infants, but once again, we might expect that any effects of the type of care would vary depending on characteristics of the child, family, and setting. Wide variations in the types of care received (19,27–29) and the fact that some children experience a variety of care settings either sequentially or simultaneously further complicate efforts to evaluate the independent effects of specific types of care.

Although most scholars allude to the importance of high-quality care, quality of care has been assessed comprehensively in relatively few studies concerned with the association between infant day care and attachment. Preliminary results from the NICHD Study of Early Child Care reveal no main effect for the quality of care on the security of infant—mother attachment in the Strange Situation, however; although rates of insecurity were disproportionately elevated when infants were exposed to such multiple risks as poor-quality (insensitive) care both at home and in nonparental care settings, more extensive care, and less stable care (23).

Overall, the empirical evidence reveals that enrolment in infant day care is problematic when it co-occurs with other indices of risk, including poor-quality care at home and unstable care arrangements. When studies have revealed strong associations between nonparental care and insecure attachment, they may have been due to sampling biases, as well as to the unrecognized concurrence of multiple adverse risk conditions. Researchers now need to specify what types of care are potentially harmful or beneficial for specific subgroups of infants and families and to define with greater precision those aspects of quality likely to be of particular significance in defined circumstances.

**Mother—Child Relationships**

Although Bowlby’s (7) work on maternal deprivation and separation had highlighted the effects of extended separation on infants, the same interpretive framework was initially applied by researchers concerned about the effects of day care on 2.5- to 5-year-olds. Buttressed by attachment theory (8,30,31), professionals warned that the repeated daily separations might harm psychosocial development. In the first systematic attempt to compare the effects of nonparental and exclusive home care, Caldwell, Wright, Honig, and Tannenbaum (32) found no differences between 2 groups of 2.5-year-old children, half attending a high-quality day care facility and half receiving care exclusively at home. When Blehar (33) compared 2- and 3-year-old children receiving full-time group day care with children of similar ages cared for exclusively at home, however, disturbances in the day care
children’s attachments were discerned. Because these findings contradicted Caldwell and others’ conclusions, several investigators attempted to replicate Blehar’s study. None were successful (34–37), suggesting that the effects Blehar observed may have (a) reflected temporary maladjustment because the children had only recently entered day care (38); (b) been attributable to factors other than enrolment in day care; or (c) been invalid indices of disordered attachments. For example, Clarke-Stewart and her colleagues (39) reported that children in day care were more independent of their mothers in unfamiliar test situations than were children in home care. In their study, independence from mother was correlated with several measures of social competence with unfamiliar adults, and thus did not appear to reflect inadequate or insecure mother–child relationships.

Roopnarine and Lamb (40) adopted a somewhat different strategy. Three-year-old children were observed in the Strange Situation immediately before they were enrolled in day care and again 3 months later. When children in this group were compared with others, matched in all respects except for the fact that their parents had no plans to enrol them in day care, these investigators found that the day care children were initially more anxious about and distressed by brief separations than the other children were. After 3 months of day care, however, these group differences had disappeared. Roopnarine and Lamb (41) later replicated these findings, again showing that group differences in responses to brief separation were greater in preenrolment than postenrolment assessments. The results of these studies underscored the need for preenrolment assessments. Group differences that are observed in a single posttreatment assessment cannot be interpreted as “effects” of nonparental care, and the absence of group differences in a posttest does not necessarily mean that nonparental care has no effects. Unfortunately, researchers still tend to ignore preenrolment characteristics in studies designed to assess the effects of day care on young children.

**Relationships with Careproviders**

Instead of studying reactions to brief separations from parents, several researchers have asked whether children in day care develop attachment-like relationships with careproviders or teachers, and if so, how these relationships compare with mother–child relationships. The evidence suggests that enrolment in day care allows children to form additional significant relationships but does not lead careproviders to displace mothers as the primary objects of attachment (42–45). Not surprisingly, children also behave differently in alternative care centres than at home. Meudec and Balleyguier-Boulanger (46) and Balleyguier, Meudec, and Chasseigne (47) reported that French 6-to 8-month-olds were more passive and less person-oriented when observed in alternative care facilities with their careproviders than when observed at home with their mothers. Such behavioural patterns are likely to vary both over time and in relation to the quality of the relationships children have been able to establish with careproviders (47–49). In a recent study, Barnas and Cummings (50) observed interactions between 40 toddlers (average age, 21 months) and their careproviders. When distressed, the toddlers consistently sought comfort from the “stable” careproviders, that is, those who had provided care to the children for longer, interacted with them preferentially when not distressed, and were more rapidly soothed by them than by “unstable” providers. These differences did not seem related to the characteristics or skills of the providers; stable and unstable providers were equally likely to be sought by newer children in the groups. Instead, Barnas and Cummings (50) speculated that the children had been able to form attachments to the careproviders who had been regular sources of care. As it is presumably beneficial for children to have access to attachment figures when their primary (parental) attachment figures are absent, these findings underscore the importance of minimizing staff turnover so as to maximize the stability of care. Interestingly, Rubenstein, Pedersen, and Yarrow (51) and Raikes (52) both reported that more stable careproviders also provided care of better quality. In addition, Howes and Hamilton (53) reported that when children’s primary teachers changed, the children subsequently behaved more aggressively.

As with parents, the security of infant–careprovider attachments is determined by the careproviders’ sensitivity and involvement, as well as the quality of care they provide (54,55). Interestingly, Galinsky, Howes, and Kontos (56) reported that the security of infant–careprovider attachment, assessed using a Q-sort rating, improved after the family day care caregivers participated in a training program that enhanced the quality of care they provided. Improvements in the level of teacher training also led to increases in the proportion of children who behaved securely (57). Such findings are especially important in light of evidence that more than half of the infants in family day care are insecurely attached to their careproviders (58).

Secure infant–careprovider relationships promote more advanced types of play (59) and more positive peer relationships (53). Not surprisingly, Howes, Rodning, Galluzzo, and Myers (60) found that the security of both infant–mother and infant–careprovider attachments predicted the level of competence exhibited when infants played with adults as well as their degree of engagement in play with peers. Oppenheim, Sagi, and Lamb (61) reported that the security of infant–careprovider attachments significantly predicted the personality development of Israeli kindergarteners, whereas neither the security of infant–mother nor infant–father attachment was predictively informative.

Viewed together, these findings suggest that the quality of nonparental care has beneficial consequences for children mediated by the enhanced quality of infant–careprovider relationships. The addition of child–careprovider relationships to the list of influences on child development and adjustment
also reduces the relative significance of child–parent relationships, however, and this may concern some parents.

**Compliance with Parents and Careproviders**

As noted earlier, researchers such as Belsky (12) view insecure infant–mother attachment as a likely consequence of early and extensive nonmaternal care and point out that, according to attachment theory, noncompliance is a common consequence of insecure infant–mother attachment (15,62,63). Consistent with this hypothesis, the results of several studies suggest that nonmaternal child care in infancy is associated with inappropriate noncompliance (64–68). Belsky, Woodworth, and Crnic (69) also demonstrated recently that early and more extensive nonmaternal care (more than 20 hours per week) in the first year of life was associated with increases in the likelihood that the parents would have more difficulty controlling and managing their toddlers when they confronted stresses posed by poor marital quality, deficient social networks, and adverse parental personality factors.

Analyzing data drawn from the National Longitudinal Survey of Labor Market Experience of Youth (NLSY), Belsky and Eggebeen (70) found that mothers who had been employed from the first or second years of their children’s lives rated their 4- to 6-year-old children as less compliant. These differences were still evident after controlling for several familial and socioeconomic background variables. Critics of this report, however, noted the failure to recognize the impact of later differences in the families’ situations, the uniqueness of the subsample studied, weaknesses in the NLSY measures of adjustment and child care histories, small effect sizes, and the manner in which the statistical analyses were conducted (71–73), thereby underscoring the difficulties inherent in conducting research using such large, complex data sets.

In the first study intensively focused on the association between day care and noncompliance, Howes and Olenick (74) studied 18-, 24-, 30-, and 36-month-olds at home, in their day care centres, and in a standardized laboratory situation and reported quite different results. Compliance with adult requests at home and in the laboratory were not correlated, making it inappropriate to speak of compliance and noncompliance as traits directly related to child care history. Research on children who entered care later supports this conclusion.

In 1981, my colleagues and I began a longitudinal study tracing the development of 140 first-born Swedish children who averaged 16 months of age at the time of recruitment: the Goteborg Child Care Study (75). At the time, the children were still being cared for at home by their parents, all of whom were seeking centre care arrangements for their children, with the assignment to groups (centre care, family day care, home care) later determined by availability rather than parental ideology. Subsequent analyses confirmed that the families in the 3 groups had similar socioeconomic characteristics and had comparable attitudes regarding parenting and child care at the time of recruitment, so group differences later observed are unlikely to reflect group selection factors (76).

Compliance with mothers’ requests was assessed in home observations when the children were 28 and 40 months of age (77,78). No reliable dimension of compliance was evident at 28 months, but individual differences in noncompliance at 40 months were predicted by the quality of both home and alternative care and by the amount of nonparental care received before age 2. Compliance was highly correlated with the degree of parent–child harmony, suggesting that compliance is best viewed as an aspect of cooperation with the parents rather than as a characteristic of the individual child. Subsequently, Prodromidis, Lamb, Sternberg, Hwang, and Broberg (79) supplemented the observational measures of mother–child compliance with ratings made by teachers and parents through 80 months of age. Once again, no consistent or reliable dimension was evident at 28 months; indices of compliance with teachers and mothers loaded on the same factor but were not stable over time and were not correlated with any aspects of the children’s child care histories. Noncompliant children received care of poorer quality at home and were more likely to have controlling parents regardless of their child care experiences.

In the United States (US), Clarke-Stewart and others (39) reported that middle-class 2-to 4-year-old children in day care, especially those in centre care, were more friendly toward and more compliant with unfamiliar experimenters than those in the exclusive care of their parents. These children were most socially competent when they experienced intermediate amounts of care on a regular basis (10 to 30 hours per week) and when the care was of good quality. Observed levels of compliance with parents at home were higher for children in day care, although there was some evidence that the different indices of compliance did not form a single coherent dimension. In addition, family variables and parental behaviour had a greater impact on compliance than day care variables did. In a large study of children in Missouri kindergartens, however, Thornburg, Pearl, Crompton, and Ispa (66) reported that children who had been at home continuously since infancy were rated by their teachers as more compliant with adults.

Taken together, these reports reveal a tendency for early enrolment in day care to be associated with noncompliance and less harmonious child–mother interactions, particularly when the care is of poorer quality. Several contradictory findings and evidence that noncompliance does not constitute a coherent cross-situational trait, however, imply that the association is context-specific and poorly understood. This signals the need for further efforts to understand the origins, reliability, and implications of these potentially important correlates or effects.
Relationships with Peers

Infant–Peer Relationships

In early studies, primarily of infants enrolled in intervention or enrichment programs, researchers reported that infant day care was associated with later aggression toward peers, although the aggression diminished over time (64,65,80–82). Most of these studies involved unrepresentative high-risk samples, argued Clarke-Stewart (13,17), and more recent studies have yielded mixed results. Hegland and Rix (83) reported no differences in the aggression and assertiveness of children who had experienced infant day care and those who had remained in the exclusive care of their parents. Similarly, British 6-year-olds who began family or centre day care in infancy were no more aggressive or otherwise behaviourally problematic than peers who received care only at home (84). Somewhat surprisingly, Thornburg and others (66) reported that the least aggressive kindergarteners were those who had either been continuously at home or continuously in full-time care. Teachers reported, however, that children in continuous part-time or full-time care and children who remained at home for the first 2 years had interactions of the poorest quality with their peers. In addition, Vandell and Corasaniti (67,68) found that third-graders who had begun extensive nonmaternal care in infancy had poorer peer relationships and were less popular than children who received no nonmaternal care or entered care later. Child care history was a better predictor than family and socioeconomic background, although the authors did not control for the effects of family background when assessing the effects of child care history. Unmeasured differences in the quality of care and in children’s initial orientation—including differences in temperament—may help account for these inconsistent findings. In an intriguing exploratory study, for example, Volling and Feagans (85) reported that socially fearful infants developed more positive relations with peers when they received high-quality care, whereas their social relations deteriorated when placed in centres of lower quality.

Other studies speak to the beneficial effects of high-quality care, although statistical interactions between quality of care and individual characteristics continue to receive little attention. Care of higher quality was associated with peer interactions of higher quality in a large study of toddlers and preschoolers (57), for example. Field, Masi, Goldstein, Perry, and Parl (86) reported that children enrolled in a high-quality centre before 6 months of age were more socially competent and socially active than those who entered later in infancy, although early enrollees were also rated as more assertive and aggressive by their teachers. The longer the children remained in child care, however, the more friends they had as 5- to 7-year-olds and the more popular, mature, and less aggressive they were in their mothers’ eyes (87). Sixth-graders who had attended other high-quality facilities from the first 2 years of life were rated by their teachers as more assertive and more likely to express their emotions physically than children who had spent less time in the same facilities. Comparing 4-year-olds who entered day care before or after 6 months of age, Field and others (86) reported no differences in the quality of peer interaction, whereas children in part-time care were less socially engaged and cooperative than those in full-time care. Those who had received full-time care were rated as more aggressive and assertive by their teachers, however, regardless of age at enrolment.

The potential benefits of high-quality care were also illustrated by Andersson (88), who found that 8-year-old Swedish children who entered out-of-home care as infants were rated by their teachers as more persistent, more independent, less anxious, more verbal, and as having made the transition from preschool to school more easily. By age 13, the children who received out-of-home care from infancy were still more socially competent in the views of their teachers than children without such experiences (89) once the effects of family and socioeconomic background were taken into account.

The most extensive programmatic research on the associations between early child care and relationships with peers has been conducted by Carolee Howes and her colleagues. Howes (90) reported that preschoolers were more sociable with their peers when they began day care in infancy. Subsequent research revealed that low-quality care beginning in infancy was associated with poorer relations with peers at kindergarten age (91), whereas early-initiated care of high quality did not have adverse effects. In a later longitudinal study, Howes, Hamilton, and Matheson (92) followed 48 children who entered full-time day care (either centre- or family-based) in the first year of life (the average age at enrolment was 5 months). The more secure the teacher–child relationships, the more complex, gregarious, and less aggressive was the play observed with peers at age 4, whereas dependence on teachers was associated with social withdrawal and hostile, aggressive behaviour. These predictive relations parallel other reports that, among preschoolers, children who have secure relations with their teachers and careproviders are more socially competent with peers (55,93,94). They also suggest that the reliable associations between infant day care and later aggressiveness may be mediated by poor relationships with careproviders, rather than by the effects of separation on infant–mother attachment.

Preschoolers and Peers

Even though children in group care settings typically have more experience with peers than do children cared for exclusively by their parents, Howes, Matheson, and Hamilton (59) reported no differences in peer interaction skills between groups of children who entered child care in infancy (mean age $[M] = 5$ months), early toddlerhood ($M = 19$ months), and late toddlerhood ($M = 33$ months). Harper and Huie (95)
found that group care experiences indeed facilitated the development of children’s social participation, however, while Clarke-Stewart, Umeh, Snow, and Pederson (96) and Clarke-Stewart and others (39) reported that children in alternative care settings were more socially competent and more cooperative with unfamiliar peers than were children cared for exclusively at home, even after individual differences in family background were taken into account. In the latter study, interestingly, increased opportunities for interaction with other children were not the causal factor, whereas among children in day care centres, quality of care and amount of attention from careproviders were predictively important. Poor-quality care was associated with more negative and aggressive behaviour with peers.

The results of 2 retrospective, longitudinal studies were more troubling, although in neither case were data available concerning either preenrolment differences in the children’s characteristics and experiences or the quality of care received. Bates and others (97) created a composite measure of adjustment including many indices of peer relationships: scores based on teacher reports of aggression, sociometric nominations, teacher ratings of popularity, social competence, and skills, and observations of peer interaction. These researchers reported that the extent of out-of-home care was significantly associated with maladjustment in kindergarten. In another study, teachers in Missouri rated kindergarteners as more aggressive when they had experienced out-of-home care, unless they had received full-time care from infancy (66). Children in part-time and full-time care from infancy and children who were home for the first 2 years had poorer quality relations with their peers. Earlier reports by Vandell and others (98,99) suggest that quality of care may be an important consideration, however, and quality was not assessed in the studies by Bates and others and Thornburg and others. Vandell and her colleagues found that the children who had been in high-quality centres were more socially competent, happier, and less shy than peers who had received care of poorer quality. Positive relations with the teachers at 4 years were correlated with greater empathy, social competence, and peer acceptance at 8 years. Kontos (100) reported a positive relationship between the quality of family day care and the frequency of social play with 3- and 4-year-old peers.

The authors of a large multisite study of cost, quality, and child outcomes in child care centres (101) also concluded that children enrolled in centres providing care of high quality had superior social skills, even after controlling for the effects of social class, ethnicity, and other aspects of family background. Howes, Matheson, and Hamilton (59), meanwhile, reported that 4-year-old children who had secure relationships with their teachers were more gregarious, ego-resilient, popular, and socially adept than children who had insecure relationships with their teachers.

In the Goteborg Child Care Study, children were observed interacting with familiar peers at home before any of the children had out-of-home care experiences, as well as 1 and 2 years after some of the children entered centre or family day care settings (75,102). Observational measures of social competence with both peers and unfamiliar adults were quite stable over time and were predicted by the quality of care received both at home and in the out-of-home care settings. Children in the different care groups did not differ significantly when observed interacting with peers at home, although children in family day care engaged in more positive and more competent play with peers than did children in centre care when observed in the alternative care facilities (103). Prodromidis and others (79) showed that individual differences in the aggressiveness (mostly toward peers) of these children were moderately stable over the period from 16 to 80 months, and were best predicted by variations in the quality of home care. They were not related to child care history and were only modestly related to individual differences in noncompliance.

Taken together, the results of several studies thus suggest that simple enrolment in day care during the preschool years does not reliably facilitate or impede the development of positive relationships with peers. Instead, it seems that the quality of nonparental care is predictively important: children receiving care of high quality have superior relationship skills, while children receiving care of poor quality have deficient social skills.

**Behaviour Problems**

**Infant Day Care**

Balleguyier (104) reported that French infants in day care cried more, threw more tantrums, and were more oppositional at home during the second year of life than those who remained in the exclusive care of their parents. In an analysis of data from the NLSY, Baydar and Brooks-Gunn (105) reported that white 4-year-olds who began receiving nonmaternal care in the first year were believed by their mothers to have more behaviour problems than those who began receiving nonmaternal care later, or not at all. Using the same data set but different statistical controls, however, Ketterlinus, Henderson, and Lamb (106) reported that children who started day care in the first or second years of life and were in day care for at least 2 years did not have more reported behaviour problems than children who experienced no day care. Likewise, Egeland and Hiester (107) reported that, in annual assessments from kindergarten through sixth grade, children from impoverished families who entered day care in infancy did not manifest more externalizing behaviour problems than children who did not receive infant day care. Exploratory analyses suggested that securely attached infants who entered day care in infancy tended to manifest externalizing behaviour problems in kindergarten, however, whereas insecurely attached children who did not experience
day care were less withdrawn and more self-competent. In a retrospective study of 6- to 12-year-olds in middle-class families, Burchinal, Ramey, Reid, and Jaccard (108) similarly reported that infant day care had no effect on maternal reports of children’s externalizing and internalizing behaviour problems and multiple raters’ reports of positive social characteristics after family and social background factors were taken into account. Boys (but not girls) who received out-of-home care in infancy were rated more positively by observers than other boys were. Children with preschool experience had higher levels of externalizing problems than did children with no preschool experiences, although preschool experience predicted more positive ratings of African American but not of white children. High-quality day care, initiated at 12 months of age for preterm low-birth-weight infants participating in an intensive intervention study, was actually associated with a decline in the incidence of behaviour problems reported by mothers when their children were 26 to 36 months old (109,110). The contrasting results of a large though retrospective study were thus quite surprising. Bates and others (97) reported that, on a composite measure of adjustment that included many indices of difficulties with peers, infant day care was associated with less positive adjustment to kindergarten, even after the effects of later care arrangements were taken into account. The extent of care in the most recent period was most influential, with children who were currently in day care appearing to be most poorly adjusted. Interestingly, however, greater day care exposure was associated with teacher reports of fewer internalizing symptoms (for example, somatic complaints, anxiety, and depression).

**Care Initiated after Infancy**

Possible effects on behavioural problems were also suggested by Borge and Melhuish (111), who followed all the children in a rural Norwegian community from their fourth birthdays through third grade. Behaviour problems were no more common at either 4 or 8 years of age among those who had received nonmaternal care in their first 3 years. Children who experienced more centre care between ages 4 and 7 had significantly fewer behaviour problems at ages 7 and 10 years in the views of both mothers and teachers, even though there was little association between the behaviour problems reported by mothers and teachers. Teachers, but not parents, reported that children who experienced more day care before 4 years of age behaved more poorly at age 10.

The association between nonparental care and behavioural problems is not always clear. For example, Scarr, McCartney, Abbott-Shinn, and Eisenberg (112) reported that the length of time in centre care had no effect and the observed quality of care had minimal effects on children’s behavioural adjustment and manageability as reported by both parents and teachers. Family background (social class, parental stress, ethnicity) accounted for substantial portions of the variance in this large, multisite study of infants, toddlers, and preschoolers, however.

Overall, the available evidence suggests that nonparental care is sometimes associated with increased behavioural problems. These problems tend to involve externalization and likely reflect the same behavioural patterns (aggression, assertiveness) earlier discussed as adverse effects of nonparental care on peer relationships. Unfortunately, few of the studies focused on behaviour problems have assessed quality of care systematically, and the actual behaviour problems at issue are a heterogenous mixture including poor relationships with peers, aggression, and noncompliance. More focused research may be more informative than research on such diffuse constructs as “behaviour problems.”

**Personality Maturity**

The personality maturity of children in day care has not often been studied. In the Goteborg Child Care Study, maternal ratings of the children’s personalities at 28 and 40 months of age were used to generate measures of ego resilience, ego control, and field independence (75,102,113). Perceived personality maturity was quite stable over time and was best predicted by observational measures of the quality of care received at home and in the alternative care settings. The children viewed as most mature by their mothers were those who had received care of higher quality from the careproviders as well as from their parents. There were no differences between children in the home care, family day care, and centre care groups on any of the personality measures at either age.

Most (87%) of the children in this study were reassessed immediately prior to enrolment in first grade (80 months of age) and toward the end of the second grade (101 months of age). By that time, children who had been enrolled since toddlerhood in family day care settings appeared less mature than those in the other groups (114). Over time, ego undercontrol decreased less, while ego resilience and field independence increased less in the children in family day care than in those who remained at home with their parents or received centre care. The quality of home and out-of-home care did not moderate or qualify these effects.

Howes, Matheson, and Hamilton (59) found that children who had secure relationships with their careproviders—presumably because these careproviders behaved more sensitively and supportively—were more ego-resilient and more appropriately ego-controlled than those who had insecure relationships with their careproviders. Reynolds (115) reported that preschool and elementary school intervention was associated with improved teacher ratings on various indices of mature adjustment to school in the fifth grade.

Although the number of studies is quite small, therefore, the available evidence suggests that centre care of high
quality has positive effects on personality maturity, whereas children receiving care of lower quality tend to be less mature. Further exploration in large samples is called for, however, particularly in light of Wessels and others’ (114) findings that the effects of quality diminish over time.

**Effects on Cognitive Competence**

**Cognitive Development in Infancy**

Enrolment in intensive intervention programs like the Abecedarian project (116,117) is consistently associated with improved cognitive competence. In the case of the Abecedarian project, half of the children were enrolled in a full-time, centre-based intervention program when they were 3 months old and received supplementary enrichment that continued through the first 3 years of elementary school. This experience was associated with better cognitive performance through age 7 (118). Enrolment in the Infant Health and Development Program had similar effects on the IQs of the preterm infants enrolled shortly after birth (109,110,119). The effects on the heavier babies were greater than on the lighter babies and were nonsignificant where better-educated mothers were involved (119).

By contrast with the results of intervention programs, the results of nonexperimental studies designed to explore the effects of infant day care are quite contradictory and inconsistent. In a retrospective study of third-graders who had received varying amounts of nonmaternal care, Vandell and Corasaniti (67,68) reported that extensive care beginning in infancy was associated with poorer scores on standardized cognitive measures. Thornburg and others (66) reported no effects of early day care (full- or part-time, initiated before or after infancy) on the cognitive achievement scores of a large group of Missouri kindergarteners. Likewise, Ackerman-Ross and Khanna (120) reported no differences in receptive language, expressive language, and IQ between middle-class 3-year-olds who either remained home or received high-quality day care beginning in infancy. Burchinal and others (108) reported no association between infant day care and cognitive performance (Peabody Picture Vocabulary Test [PPVT] and Wechsler Intelligence Scale for Children—Revised [WISC-R] scores) at 6 to 12 years of age in a sample of middle-class white and African American children. In a smaller study of Swiss infants, Pierrehumbert, Ramstein, and Karmaniola (121) reported that the more nonmaternal care infants experienced, the lower their cognitive test performance at age 2. In Greece, Petrogiannis (122) found that the length of time in day care predicted improved cognitive and language skills among 18-month-olds, although there were no mean differences between children in home care and centre care settings. Small group sizes and higher-quality care amplified the positive effects. Using data from the NLSY, Caughy, DiPietro, and Strobino (123) reported that enrolment in day care before age one was associated with better reading recognition scores for 5- and 6-year-old children from impoverished backgrounds and poorer scores for children from more advantaged backgrounds. Centre-based care begun in the first 3 years was also associated with higher math performance scores in children from impoverished backgrounds and lower math scores for children from more stimulating homes. Unfortunately, it is not known how many of these children were enrolled in formal intervention programs. Using subjects drawn from the same data set, Baydar and Brooks-Gunn (105) reported that day care during the first year was associated with poorer verbal abilities in 3- and 4-year-olds, while Desai, Chase-Lansdale, and Michael (124) reported that infant day care was associated with poorer cognitive functions during the preschool years by boys from advantaged families.

Quite different results were reported in a long-term longitudinal study conducted in Sweden by Andersson (88,89). Retrospective accounts of the age of enrolment in day care were employed in analyses suggesting that children who entered day care early scored significantly better on standardized measures of cognitive ability and teacher ratings of academic achievement at both 8 and 13 years of age, even after controlling for differences in their family backgrounds. Such results probably reflect the generally high quality of care provided in Swedish day care centres, which most of these children attended (125).

McCartney and colleagues conducted a longitudinal study of 166 Bermudan children in day care centres varying in quality (126–128). Scarr and Thompson (129) reported no differences in cognitive performance attributable to the extent of maternal employment during the first year of the infants lives once differences in family background were taken into account. Children in high-quality centres, however, scored better on measures of language development and were rated by teachers as more considerate and sociable between 3 and 5 years of age than children in low-quality centres (128,130), although the effects of the quality of care were no longer evident when the children were reassessed at 5, 6, 7, and 8 years, by which times family background and maternal IQ measures were better predictors of academic achievement and teachers’ ratings of social competence (131). By contrast, Field (87) reported that extensive exposure to high-quality infant care was associated with superior academic performances at age 11. In a correlational study of children in 4 states, furthermore, children had better receptive language skills when they received care of high quality, even after the effects of social class and other aspects of family background had been controlled (101).

In general, it seems clear that high-quality educationally oriented programs have positive effects on cognitive performance, particularly for children from disadvantaged backgrounds. Unfortunately, few attempts have been made to evaluate the relative effectiveness of different curricula or pedagogical approaches, so we cannot identify the salient aspects of successful programs. Follow-up studies are also
uncommon, but the ones there are show that significant effects are often attenuated over time unless maintained by continuing care or education of high quality. Care of poorer quality presumably has effects that vary relative to the quality of care and stimulation that children would receive at home. As a result, the performance of some children from middle-class families may be affected adversely by out-of-home care experiences.

Cognitive Performance of Preschoolers

Studies of intervention programs designed to enhance the school readiness and academic performance of children from disadvantaged family backgrounds show that enrichment programs tend to have the expected effects on young children, although these effects are often attenuated over time when not supplemented by continued enrichment (132–135). Effects also tend to be more impressive when the quality is higher (136). Unfortunately, little effort has been made to specify the influential aspects of intervention programs, so that attempts can be made to fine-tune their effectiveness and instead determine which aspects of which programs are of particular value to which children from which types of families.

Several researchers have also examined the intellectual, cognitive, and academic performance of children in non-experimental community programs. Dunn (137) reported that the intelligence of 4-year-olds from middle-class families was correlated with the quality of alternative care, even after controlling for family background variables. In a study focused on low-income mothers and their second-graders, Vandell and Ramanan (138) likewise reported that maternal employment in the first 3 years was associated with superior academic performance, especially when the mothers remained employed for the rest of the preschool years. Further, a prospective longitudinal study of children from educationally advantaged backgrounds revealed positive effects of a one-year preschool program on a battery of achievement measures administered in second and third grade (139). The program benefitted boys, but not girls, however. African American but not white children benefitted from preschool in a study of middle-class 6- to 12-year-olds (108). Meanwhile, Clarke-Stewart and others (39,140,141) reported that middle-class 2- to 4-year-old children in centres scored better on many measures of cognitive development than children who remained in the exclusive care of their parents, had in-home sitters, or were in family day care, and that the effects were greater in centres of higher quality. The effects of attendance remained significant after the effects of family social class were partialled out. Interestingly, the amount of time spent each week in day care was curvilinearly related to the children’s performance: those in care for 10 to 30 hours per week scored better than those receiving either less or more care, although it is unclear whether these differences are attributable to those factors that determine extent of care rather than the extent of care per se. Careproviders who took an active role in interaction and teaching produced more positive effects than those who assumed more passive, custodial roles, and the predictive significance of these familial factors was not reduced by enrolment in nonparental care settings.

Broberg, Hwang, Lamb, and Bookstein (142) assessed the development of verbal intelligence in the children participating in the Goteborg Child Care Study. Focusing on those children who had continued to receive the same type of care from 16 through 40 months of age, these researchers showed that scores on the Griffiths Developmental Scales (143,144) at 28 and 40 months were predicted by independent observations of the children’s sociability with unfamiliar adults as well as by earlier and contemporaneous indices of the quality of care received at home. The quality and type of out-of-home care were not related to the children’s verbal abilities.

The children were reassessed several years later when they were nearing the end of the second grade (average age, 101 months). At this stage, the children’s performance on standardized measures of cognitive ability were predicted by the number of months the children had spent in centre-based care before 3.5 years of age and the quality of care received in these centres (145). The children in family day care performed more poorly than those in the centre care and home care groups. The quality of home care was no longer associated with indices of the children’s abilities or school performance, and preexisting group differences or differences in family background were not responsible for the effects observed. These results were largely consistent with those of Andersson (88,89), who, as mentioned previously, studied Swedish children who began out-of-home care in infancy, as well as with the results of retrospective studies in Norway (146), New Zealand (147), and Britain (148). In these studies, enrolment in day care had either positive or no significant effects after the effects of maternal education and family SES had been partialled out. In a further assessment at age 20, furthermore, Hartman (149) reported that children who received high-quality centre care between 4 and 7 years of age achieved higher levels of educational competence and also saw themselves as more independent and autonomous than a matched group of peers who received preschool care exclusively from their parents.

Taken together, the published literature reveals that centre-based day care, presumably of high quality, can have positive effects on children’s intellectual development, regardless of family background, and does not seem to have negative effects on any groups of children. Too few researchers have studied family day care to permit confident conclusions about the effects of this form of care.

Conclusion

Overall, the data suggest that regular exposure to nonparental careproviders need not have harmful effects on children’s development and on their family relationships,
although it can do so. Adverse effects on infant–mother attachment appear to occur only when infant day care co-occurs with other risky conditions, such as insensitive maternal behaviour, and it is still not clear whether the insecure behaviour of children who have been in day care is predictive of poorer adjustment later in childhood. Researchers have shown that children do form attachments to other careproviders when afforded the opportunity to do so and that the quality and security of these relationships is determined by the sensitivity and warmth of the careproviders’ behaviour. Relationships with careproviders influence children’s contemporaneous and subsequent behaviour and thus may compensate for or magnify the effects of child–mother attachment on subsequent behaviour and adjustment. The quality of nonparental child care, in fact, appears to modulate the effects of daycare on many aspects of child behaviour and adjustment. Although children who have experienced nonparental care tend to be more aggressive, assertive, and noncompliant than their peers, for example, the associations are weaker or nonexistent when the quality of care is better. The effects of noncompliance must be summarized cautiously, however, both because noncompliance has not been studied extensively and because noncompliance appears to be situation- and relationship-specific, rather than trait-like. High-quality day care from infancy clearly has positive effects on children’s intellectual, verbal, and cognitive development, especially when the children would otherwise experience impoverished and relatively unstimulating home environments.

Assertions that nonparental care does not consistently or inevitably have either positive or adverse effects on children’s development must be qualified on a number of grounds, some of the most important of which stem from the fact that, with few exceptions, true experimental studies have not been possible. Because of this, preexisting group differences—including those that led to the enrolment of some but not other children in nonparental care settings in the first place—may continue to explain at least some of the between-group variance discerned. Unfortunately, statistical controls for some of the known group differences and potentially influential factors can only reduce, but not completely eliminate, the problem. In addition, social class (as manifest in varying levels of parental education and the richness of resources made available to children) is correlated with many indices of child development and needs to be considered in research on day care.

In general, the specific type of care (exclusive home care, family day care, centre day care) appears to be much less significant than was once thought. Type of care may also have varying effects depending on the ages at which children enter out-of-home care settings, with the planned curricula of day care centres becoming increasingly advantageous as children get older. It also appears likely that different children will be affected differently by various day care experiences, although we remain ignorant about most of the factors that modulate these differential effects. Child temperament, parental attitudes and values, gender, and birth order, as well as preenrolment differences in sociability, curiosity, and cognitive functioning may all be influential, but reliable evidence is scanty.

Over time, researchers’ focus has clearly shifted from between-group to within-group (correlational) strategies. Many researchers embracing such strategies have attempted to assess the predictive importance of the quality of care, and there is a clear consensus that the quality of care, broadly defined and measured, modulates the effects of nonparental child care on child development. Interestingly, improvements in quality appear to have significant positive effects even at the highest end of the range sampled, suggesting that there is no threshold beyond which quality of care no longer matters. The magnitude of the effect is considerably less clear than its reliability, however, and the fact that researchers must estimate the importance of quality in the context of complex correlational models that also include many other potential predictors makes it doubtful that we will ever really know how important quality is in an absolute sense.

Out-of-home care of superior quality is clearly beneficial to children and preferable to care of poor quality; parents and regulators, however, need to evaluate the relative costs and benefits of incremental improvements in quality. Researchers, meanwhile, need to shift their attention to more detailed considerations of quality so as to define, more clearly than has been possible with the current generation of crude indices, what features of careproviders and out-of-home care settings have the greatest impact on specific aspects of development. Among other things, such studies might explore why the quality of care, as currently measured, has equivalent effects on the social and emotional adjustment of children, regardless of sociocultural background, whereas the effects on cognitive development often differ for children from differing backgrounds. Such insight should, in turn, permit the development of enriching programs for children from all sociocultural backgrounds.

Finally, although they seldom receive the amount of attention they deserve, the quality of children’s interactions and relationships with their parents and family members and the quality of care children receive at home continue to be the most important sources of influence on the development of young children, even when they receive substantial amounts of care outside the home. It remains an article of faith that nonparental care is likely to be most beneficial when it complements the quality of family care most successfully, and it is most likely to be harmful when there are differences in ideology, belief, and behaviour. One implication of this would be that, beyond a certain level, different parents evaluate certain characteristics of alternative careproviders quite differently and that in the pursuit of individual developmental goals for their children, their subjective evaluations of quality and choices among alternatives may
begin to diverge. Research findings that more clearly and carefully link specific practices to specific outcomes in defined circumstances would obviously help parents make good choices, as would efforts to make parents better evaluators than they currently appear to be.

Clinical Implications

- Nonparental care can be both beneficial and harmful.
- Quality of care is predictively important.

Limitations

- Most research has been concerned with middle-class, white North Americans.
- Important aspects of high-quality care remain to be specified.

References

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Résumé

**Objectifs :** Examin er la littérature publiée sur les effets de soins non prodigués par les parents, à l’extérieur du domicile familial, aux nourrissons, aux tout-petits et aux enfants d’âge préscolaire.

**Méthode :** Examen de la littérature descriptive.

**Résultats :** Malgré une controverse importante, les données compilées révèlent que les soins non prodigués par les parents n’entraînent pas forcément des effets favorables ou négatifs chez les nourrissons et les enfants, bien qu’ils puissent effectivement causer des effets de cette nature. Dans certaines circonstances, les prestataires de soins établissent des relations qui peuvent avoir des effets importants sur le développement des enfants, et cela accroît l’importance de veiller à ce que les prestataires de soins reçoivent une bonne formation, se comportent avec tact et soient stables, au lieu de ne cons tituer que des figures éphémères dans la vie des enfants. Les soins non prodigués par les parents sont liés à des problèmes de comportement (entre autres l’agression et le non-respect) lorsqu’ils sont de mauvaise qualité et l’absence de possibilités d’établir des relations significatives avec des prestataires de soins stables.

**Conclusion :** Les effets des soins prodigués à l’extérieur du domicile familial varient selon la qualité des soins, de même qu’en fonction des caractéristiques de chaque enfant, entre autres leur âge, leur tempérament et les antécédents individuels.