Infant Day Care: Maligned or Malignant?

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The effect of day care on child development is one of the most critical and divisive issues confronting specialists and parents in the United States today. Over the past twenty years women have entered the labor force in great numbers, with the majority of these women having young children in need of supervision and care while their mothers are at work. In general, research findings suggest that quality care for children over 1 year of age does not interfere with the development of healthy parent-child relations and may even increase the development of social skills. (Note that this statement specifies quality care; psychologists agree that poor care does not promote healthy development.) However, this issue is more complicated when one considers out-of-home care for infants under 1 year of age. The first year of life is widely believed to be critical for establishing socioemotional ties to primary caregivers. What effects might early and repeated separations of the parent and infant have on the development of this early social relationship? In the following paper K. Alison Clarke-Stewart reviews research on this issue, focusing on how infant day care may affect the development of emotional security and adjustment.

Today, the mothers of half the infants in the United States work outside the home. This concerns psychologists and parents because of the possible detrimental effects on these infants of separations from mother and experience in day care. Available data suggest that infants whose mothers work full time are somewhat more likely as one-year-olds to avoid their mothers after a brief separation and later to be less compliant with their mothers and more aggressive with their peers. The argument that these behaviors indicate that infants in day care are at risk for emotional insecurity and social maladjustment is
evaluated in light of current research results. It is concluded that other interpretations of the data are more plausible and that further research on the factors moderating and mediating the effects of infant day care is needed.

One of the most striking social changes in this country over the past decade has been the dramatic increase in the number of mothers going back to work within the first few months after their babies are born. What was rare in the 1960s and unusual in the 1970s is now common. Half of the infants in the United States today have employed mothers, twice the proportion that there were in 1970. Mothers of young infants are the fastest growing segment of the labor market (U.S. Bureau of the Census, 1986).

Not surprisingly, this social change has been greeted by concerned questions. What are the effects on these infants of repeated separations from their mothers? What will be the long-term outcomes for these children of spending so many hours with paid professionals instead of with their loving parents? What will happen to society when these children themselves become parents? These are important questions, but when they have been put to developmental psychologists, the answers have been inconsistent. The results of studies addressed to the issue of short- and long-term effects of infant day care have been unclear enough to allow varied interpretations. Thus, some (e.g., Barglow, Vaughn, & Molidor, 1987; Belsky, 1988a), interpreting the available data, have claimed that full-time maternal employment puts infants at risk for developing emotional insecurities and becoming socially maladjusted. Others (e.g., Clarke-Stewart, 1988; Phillips, McCartney, Scarr, & Howes, 1987), evaluating the same studies, have concluded that there is insufficient evidence to support this claim. What is the empirical evidence concerning the effects of infant day care, and how has the controversy over interpreting this evidence arisen? Is day care truly bad for babies, or has it been undeservedly maligned?

OUTCOMES OF INFANT DAY CARE

Does Day Care Result in Emotional Insecurity?

The major source of controversy has been the research assessing infants' relationships with their mothers. The infant-mother relationship has been central in theories of development from Freud onward and has been shown to be an important index of infants' overall emotional well-being. It is also a likely candidate for disturbance when infants are separated from their mothers for 8 to 10 hours a day. Although research consistently has shown that infants of working mothers do form attachments to their mothers and prefer their mothers to their substitute caregivers (Clarke-Stewart & Fein, 1983), the question is whether the quality of their attachments is as good, as emotionally secure, as the attachments of infants who are being raised exclusively by their parents.

As a first step in answering this question, one can tabulate data from all studies that have included the current standard assessment of children's attachment to their mothers, Ainsworth's Strange Situation (Ainsworth, Blehar, Waters, & Wall, 1978)—studies by Ainslie and Anderson (1984); Barglow et al. (1987); Beckwith (1987); Belsky and Rovine (1988); Benn (1986); Burchinal and Bryant (1988); Chase-Lansdale and Owen (1987); Easterbrooks and Goldberg (1985); Easterbrooks and Harmon (1987); Goossens (1987); Jacobson and Wille (1984); Lipsitt and Lagasse (1987); Owen and Cox (1988), Owen, Easterbrooks, Chase-Lansdale, and Goldberg (1984); Rodning (1987); Thompson, Lamb, and Estes (1982); and Vaughn, Gove, and Egeland (1980). Tabulation of these data shows that infants whose mothers are employed full time, compared with infants whose mothers do not work or who work part time, are disproportionately likely to be classified as insecurely attached. Of the infants of full-time working mothers, 36% have been classified as insecure; of the infants of nonemployed or part-time working mothers, only 29% have been so classified. Although differences in individual studies often are not statistically significant, this overall difference, with a sample size of 1,247, certainly is ($X^2 = 6.21, p < .01$).

There is no disagreement that this difference exists and that it merits examination. The question is: What does the difference mean? Does it mean, as Barglow et al. (1987) and Belsky (1988a) have suggested, that infants of working mothers are at risk for emotional insecurity because they interpret their mothers' absence as rejection, or because repeated separations have disturbed their emerging attachment relationship, making them doubt their mothers' availability and responsiveness and leading them to develop a coping style that masks this anger? These interpretations, extrapolated from knowledge of the

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1 A copy of a table giving further details of these studies is available upon request from the author.
correlates of insecure attachment in children raised exclusively by their parents, may be correct. However, at present, they are highly speculative. They are not based on data, and indeed alternative explanations have some empirical support.

At the heart of the problem is the fact that the observed difference between infants of working and nonworking mothers is based on behavior observed in a single assessment procedure. Although having a common assessment method is invaluable for combining subjects from different studies, having only one assessment method raises problems. The Strange Situation has turned out in past research to be a reliable and useful measure of the mother-infant relationship and a predictor of later behavior problems in home-reared children (Ainsworth et al., 1978). But it is important to validate the behavior patterns observed in the Strange Situation for infants whose mothers work using other—ecologically valid—assessment procedures.

This is important, for one thing, because the Strange Situation may not be psychologically equivalent for infants of working and nonworking mothers. The validity of the Strange Situation procedure depends on creating a situation in which infants feel moderately stressed and therefore display proximity-seeking behavior to the object of their attachment. The Strange Situation may not be equally stressful for the infants of working and nonworking mothers. Consider the features that make up the Strange Situation—the infant plays with someone else's toys in a room that is not his or her own; the infant is left by his or her mother with a woman who is a stranger; the infant plays with and is comforted by that woman in the mother's absence; the mother returns to pick the infant up. Although at least some infants of nonworking mothers undoubtedly have had experiences like these before their assessment in the Strange Situation, infants of working mothers are more likely to have had them regularly and routinely and, therefore, to be more accustomed to them.

Any of these elements of familiarity could affect infants' behavior in the Strange Situation. Although strong evidence that infants whose mothers work find the Strange Situation less stressful has not yet been collected, there are hints that this may be the case.

Researchers have found that in the Strange Situation infants who have been in day care, compared with infants who have not, are less likely to resist contact with the stranger and less likely to seek proximity and contact with the mother (Hock, 1980), are less disturbed by the mother's absence (they are less likely to search for the mother and more likely to play comfortably with the toys after the mother has left the room [Doyle & Somers, 1978; Jacobson & Wille, 1984]), and are less likely to seek proximity and contact with the mother on her return (Goossens, 1987).

Clearly, we need to assess infants' attachment using procedures that are not biased by differential familiarity and potentially differential stressfulness. Several recent attempts to do this by using a Q-sort assessment technique in which mothers, teachers, or observers rate infants' attachment behavior in daily situations have not revealed differences between infants of working and nonworking mothers (Belsky, 1988b; Howes, Rodning, Galuzzo, & Myers, in press; Strayer, A. M., & Blicharski, in press; Weinraub, Jaeger, & Hoffman), in press). But, of course, these studies do not settle the issue. It may be that with a larger data set of Q-sort ratings differences between infants of working and nonworking mothers would be revealed; in Belsky's data, for example, the Q-sort results, although not significant, were in the same direction as the Strange Situation results. More research using more clinically sensitive assessments is needed.

A second issue of importance for interpreting the observed difference in attachment between the infants of working and nonworking mothers is the question of how large the difference is. The difference may be statistically significant, but in practical terms how significant is it? Is it large enough to conclude that infants are in danger if their mothers work? There are several ways of presenting the differences observed between infants of working and nonworking mothers in the studies using the Strange Situation. The most extremely negative way (in terms of the dangers for infants) is to select only the low-risk subjects from the data set and to use the small percentage of insecure at-home infants as the base, saying that for the "average" infant there is a 39% increased risk of an

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2 Although Jacobson and Wille's (1984) curvilinear regression analysis suggests that infants with 20 hr or more of extramarital care per week are less likely to play comfortably in the Strange Situation than infants with 4 to 19 hr of extramarital care per week, inspection of Figure 1 in the article demonstrates that this is based on 4 infants who did not play during the episode alone with the stranger; 4 of the 13 infants with 20 hr or more of day care played comfortably during more than 40% of the episode.

3 Although they were not significantly different, the Q-sort results in the Belsky (1988b) study increased the level of significant difference in a composite measure of security.
insecure attachment when the mother works full time (11% + 28%). Less extreme would be the parallel statement, based on the entire data set, that for a “wide range” of infants there is a 24% increased risk of insecurity when the mother works (7% + 29%). These same data could be used to make a statement that reduces the apparent difference substantially, however, by using as the base the percentage of secure children in maternal care. Then the statement would be that the probability that an infant will be securely attached is only 10% less if the mother works (7% + 71%). Finally, the most positive statement of the differences would be the statement that for infants from high-risk families there is a 19% lower likelihood that an infant will be insecure if the mother works (9% + 47%). Thus, one can pick one’s statement to emphasize or minimize the extent of the difference.

Moving beyond this semantic sleight of tongue, in an effort to evaluate the risk of insecure attachment for infants of working mothers, one might use the strategy of comparing the distribution of attachment categories for the infants of working mothers in this data set with a broader sampling of studies, including those in other countries. As it turns out, the observed distribution of insecure infants of working mothers in the United States (22% type A and 14% type C) is virtually identical to the global distribution reported by van IJzendoorn and Kroonenberg (1988)4 for studies around the world (21% type A and 14% type C). This seems to suggest that the observed likelihood of insecurity in infants of working mothers, even if it is somewhat elevated (more or less depending on the sample and the form of the statement one chooses) is within the normal population range.

Yet another way of looking at how different the infants of working and nonworking mothers are is to examine the size of the mean difference between the groups on the scale of insecure (avoidant) attachment behavior. When this is done for the combined samples from the studies reporting these data (Barlow et al., 1987; Belsky & Rovine, 1988; Schwartz, 1983), the average avoidance score for infants of working mothers is 3.0 ($n = 129; \text{SD} = 2.9$),5 and for the infants of nonworking or part-time working mothers it is 3.8 ($n = 198; \text{SD} = 2.0$). This difference of about 1 point on a 7-point scale, similarly, suggests that although day-care infants are more avoidant of their mothers they are not extremely so.

A third issue in interpreting the difference between infants of working and nonworking mothers in the Strange Situation concerns the meaning of attachment itself. In theory, an attachment is a relationship; it is not a global personality trait. If the children of working mothers are more insecure with them, this does not necessarily mean that these children are emotionally insecure in general. Before labeling the infants of working mothers emotionally insecure, we need to assess their emotional health in a range of situations and with a variety of partners. On other measures of security, self-confidence, and emotional adjustment, children who were in day care as infants have been observed to do as well as children who were not (Andersson, 1987; Golden et al., 1978; Ramey, Dorval, & Baker-Ward, 1983; Rubenstein, Howes, & Boyle, 1981; Vandell & Corasaniti, 1988).6 In the one study in which children who had been in infant day care were rated as more anxious by their teachers (McCarty, Naccarato, Phillips, Grajek, & Schwartz, 1982), these children were still well within the normal range and, in fact, were rated by their parents as less anxious. As further evidence that day-care infants are not emotionally disturbed in general, it might also be noted that the infants of working mothers who were coded as insecure in the Strange Situation have been found to perform better than the infants of nonworking mothers on a variety of other tasks (Strayer & Moss, 1987; Vaughn, Deane, & Waters, 1985).7 Taken together, these findings seem

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4 Unfortunately, van IJzendoorn and Kroonenberg did not report separate distributions for working and nonworking mothers, so this global estimate (based on 1,990 subjects) does include a small number of infants whose mothers worked.

5 These standard deviations are based on Barglow, Vaughn, and Mollitor’s (1987) and Schwartz’s (1983) studies; Belsky and Rovine (1988) did not report their standard deviations.

6 As will be discussed later, some of these studies included other measures (e.g., aggression) on which day-care children did more poorly; here, the focus is specifically on evidence of children’s emotional insecurity.

7 In McCartney, Naccarato, Phillips, Grajek, and Schwartz’s (1982) study, there was a negative association between teacher ratings of children’s anxiety and the age at which the children entered day care (3–24 months).

8 Infants of working mothers did consistently, if not always significantly, better on problem-solving interactions with mothers in Strayer and Moss’s (1987) study and on the Bayley Scale of Mental Development in behavioral assessments of task persistence and the quality of mother–infant interaction in Vaughn, Deane, and Waters’s (1985) study.
to suggest that day-care infants are not more anxious, insecure, or emotionally disturbed overall.

The final and perhaps most significant difficulty in interpreting the data showing that infants of working mothers are more likely to be insecurely attached to their mothers is the problem of self-selection. Mothers who work (and their infants) differ in many ways from those who do not (e.g., Hock, Christman, & Hock, 1980; McBride & Belsky, 1983). These differences may lead to the disproportionate number of children classified as insecure among the infants of working mothers.

In sum, there are a number of major obstacles to our interpretation of the observed difference in attachment between infants of working and nonworking mothers. At the present time, in my view, it is not appropriate to interpret the difference as suggesting that these children are emotionally insecure.

Does Day Care Result in Social Maladjustment?

One reason that psychologists have interpreted the difference in infants' attachments as reflecting emotional insecurity is that they have put this difference together with another provocative finding. In a number of studies, children who spent their first year in day care later were observed to be more aggressive with their peers and less compliant with their parents (Barton & Schwarz, 1981; Haskins, 1985; McCartney et al., 1982; Rubenstein & Howes, 1983; Schwarz, Strickland, & Krolley, 1974; Vandell & Corasaniti, 1988; Vaughn et al., 1985). Unfortunately, it is impossible to combine data from these studies as was done for attachment to get an overall estimate of the likelihood of aggression and noncompliance among children who were in infant day care because no common measure of these behaviors was used in these studies. One can only point out that although these studies do provide strong evidence of greater aggression and noncompliance in day-care children, no such evidence has been obtained in other studies using similar measures (Braun & Caldwell, 1973; Golden et al., 1978; Gottfried, Gottfried, & Bathhurst, 1988; Howes, 1988; Kagan, Searsley, & Zelazo, 1978), or in the same studies using other measures (McCartney et al., 1982, aggression to peers; Rubenstein & Howes, 1983, behavior problems; Vaughn et al., 1985, compliance and aggression to mother) or assessing the children at later ages (McCartney et al., 1982; Schwarz et al., 1974).

Even accepting the possibility that a meta-analysis would reveal a trend for children who had been in day care as infants to be more aggressive and less compliant, however, one might question whether these behaviors should themselves be interpreted as evidence of maladjustment. It is possible that the pattern of aggression and noncompliance observed in these studies to some extent reflects greater independence rather than disturbed behavior. One notes that children who had been in day care as infants in these and other studies did as well as or better than children who had not on measures of advanced development—sociability, social competence, language, persistence, achievement, self-confidence, and problem solving (Andersson, 1987; Golden et al., 1978; Haskins, 1985; Lay & Meyer, 1972; Macrae & Herbert-Jackson, 1976; McCartney et al., 1982; Ramey et al., 1983; Rubenstein & Howes, 1983; Rubenstein et al., 1981; Schwartz, 1983; Schwarz, Krolley, & Strickland, 1973; Strayer & Moss, 1987). Another argument against viewing children who were in infant day care as maladjusted is the argument that this same pattern of negative behavior and advanced development appears in children who start full-time day care after infancy, as toddlers or preschoolers (Clarke-Stewart & Fein, 1983).

What this pattern of behavior may suggest, then, is not that children who have been in day care beginning in infancy or later are socially maladjusted, but that they think for themselves and that they want their own way. They are not willing to comply with adults' arbitrary rules. In one study (Siegal & Storey, 1988), for example, preschoolers who had been in day care thought that moral transgressions (like hitting or stealing) were worse than social transgressions (like not putting toys away), but children who were just starting day care thought that it was just as hard to break the social rules. Children who have spent time in day care, then, may be more demanding and independent, more disobedient and aggressive, more bossy and bratty than children who stay at home because they want their own way and do not have the skills to achieve it smoothly, rather than because they are maladjusted. To find out whether maladjustment is a consequence of infant day care, what is called for, again, are more clinically sensitive assessments.

Does Day Care Result in Intellectual Precocity?

The third finding in the literature on infant day care is that children who have been in infant day care are, on the average, advanced in their intellectual development. Quite consistently, researchers have found that when children are given intelligence tests any time between 18 months and 5 years, those who had been in day care as infants score higher than those who had not (Clarke-Stewart & Fein, 1983).
What does this difference in intellectual functioning mean? Is day care giving infants an intellectual head start, increasing their level of intelligence, or pushing them too fast? Longitudinal studies of children suggest that the difference is a temporary acceleration of children’s intellectual development, not a permanent enhancement of abilities. As home-care children enter day care, preschool, kindergarten, or elementary school, they too make intellectual gains and quickly catch up to the children with early day-care experience (Clarke-Stewart & Fein, 1983). Infancy does not appear to be a critical period for accelerating intellectual development. There is also no evidence that infant day care pushes infants too fast; when home-care children catch up, they do not surpass day-care children. In brief, day care does appear to give infants an intellectual head start—but a short-lived one.

MODERATORS AND MEDIATORS OF INFANT DAY-CARE EFFECTS

Not all the children who are in day care as infants are insecurely attached, aggressive, noncompliant, or intellectually advanced. There are individual differences in development for infants in day care just as there are for infants at home. What factors contribute to these developmental outcomes in day-care children and tip the balance to produce group differences between day-care and home-care infants?

Mediators of Emotional Insecurity

DAY-CARE FACTORS It has been suggested that the emotional security of individual infants in day care may be related to the type, stability, or quality of day care experienced by the infants. To date, however, very limited support for this suggestion has been found. Insecure attachments have been observed in a wide range of day-care programs—in sitter care (Barglow et al., 1987; Schwartz, 1983) as well as centers (Belsky & Rovine, 1988), and in stable arrangements (Barglow et al., 1987) as well as unstable ones (Vaughn et al., 1985). Deliberate efforts to link insecure attachment to the quality of day care generally have not been successful (Belsky & Rovine, 1988; Bynen, 1986; Burchinal & Bryant, 1986; Howes et al., in press; Thompson, Lamb, & Estes, 1982), although in one of these studies (Howes et al.) insecurity of attachment to mother was more likely for children in centers with poor adult-child ratios. Perhaps it is not surprising that the quality of day care is not closely related to the development of infants’ attachments to their mothers. Poor day care might affect the attachment relationship because it would affect the child’s general emotional well-being, but it does not follow that good day care would enhance the infant–mother relationship or ensure its security.

CHILD FACTORS It is somewhat more likely that moderating factors would be found in the characteristics of the children themselves. It has been suggested (Belsky, 1988a), for example, that boys whose mothers work are more likely to develop insecure attachments than are girls. In a meta-analysis of studies of attachment in day-care children, however, the child’s sex did not turn out to be a significant moderator of day-care effects (McCarty & Phillips, 1988). It has also been suggested that the child’s constitutional vulnerability might moderate the effects of day care. So far, only data from one study (Belsky & Rovine, 1988) are available to examine this issue. This study did reveal that among infants of working mothers those who were insecurely attached had more difficult temperaments. More interesting though, was the finding in this study that it was not the objective assessment of infants’ behavior that was linked to insecure attachment, but rather mothers’ perceptions of their infants’ temperaments—suggesting that mothers’ perceptions, attitudes, and actions may be more important than child characteristics for determining who is vulnerable and who is at risk.

FAMILY FACTORS There are several kinds of working mothers who might promote their children’s insecure attachments. One kind undoubtedly is the mother whose rejection of contact with the infant has been linked to insecurity in home-reared children. Perhaps there is even an increased likelihood of this kind of rejection among working mothers. This could occur through self-selection: Mothers who like babies stay home; mothers who don’t, go to work. In a study by Hock, Morgan, and Hock (1983), for example, mothers who intended to stay home when their babies were born but who ended up going to work in the baby’s first year did so after experiencing a decline in their positive attitude toward motherhood and expressed a strong aversion to infant fussiness. It could also occur through the increased stress of handling two full-time jobs, work and motherhood, which would lead to more rejection of every additional burden, including the baby. Other mothers might foster insecure attachments in their infants because of their lack of availability, not only because they are away all day at work, but because they have to do chores and tasks that compete with the infant when they are together. Yet other mothers might be psychologically inaccessible. Many working mothers feel overworked
and tired; they feel life is hard; they are rushed and harried. It is not unreasonable that these mothers would be less accessible to their infants. The reason their infants might be insecurely attached, in other words, is not that 40 hours of day care is hard on infants but that 40 hours of work is hard on mothers. Yet another kind of mother whose infant might be insecurely attached is the insensitive mother, whose insensitivity could be increased by spending less time with the infant and so knowing the infant’s needs and signals less well. Finally, employed mothers might value and deliberately encourage their infants’ independence more than nonworking mothers, and so their infants would not appear to be as securely attached.

What then is the empirical evidence that working mothers’ attitudes and behavior are sources of infants’ insecure development? Unfortunately there have been only a few studies in which links between working mothers’ behavior and their infants’ development have been explored. Farber and Egeland (1982) found that working mothers whose infants were insecure expressed less desire for motherhood even before their infants were born. Benn (1986) and Belsky and Rovine (1988) observed that working mothers whose infants were insecure were less competent, sensitive, integrated, empathic, and happily married. In Owen and Cox’s (1988) study, mothers who had to work long hours (more than 40 hours a week) were more dissatisfied and anxious, anxious mothers were less sensitive, animated, and reciprocal in their interactions with their infants; and their infants were more likely to develop insecure attachments. These studies suggest that there are links between mothers’ behavior and attitudes and infants’ development in families with working mothers, just as there are in families with nonworking mothers. We need more research to identify and clarify these links.

Mediators of Sociability and Aggressiveness

DAY-CARE FACTORS The positive side of the social behavior pattern observed in day-care children—advanced sociability, social competence, and self-confidence—has been associated with characteristics of day care in a straightforward and reasonable way. Children who are most socially competent are found in day-care programs in which they interact with a variety of peers, including some who are older and more socially skilled, under the close supervision and guidance of caregivers who are educated, responsive, nurturant, and positive, who offer children choices and suggestions and encourage their activities (Clarke-Stewart, 1987; Golden et al., 1978; Hamilton & Gordon, 1978; Rubenstein & Howes, 1979).

More surprising is the fact that the dark side of children’s social behavior—aggression and noncompliance—also has been linked to participation in such “good” programs (Haskins, 1985; McCartney et al., 1982; Schwarz et al., 1974). The responsive style of teaching in such programs, which contrasts with the more authoritarian style of mothers (Clarke-Stewart, 1984; Hess, Price, Dickson, & Conroy, 1981; Rubenstein & Howes, 1979), could easily be seen as permitting or even promoting children’s assertiveness, noncompliance, and even aggression. It is a style fostered by training in child development and an academic orientation. Teachers with child development training and an academic orientation are more likely to have attitudes and behaviors that encourage children’s independence, not their obedience (Arnett, 1987; Berk 1985; Howes, 1983), that foster social and cognitive knowledge, but neglect social skills (Clarke-Stewart, 1984; Finkelstein, 1982).

Of course increased noncompliance and aggression are not just the province of good day care. Low social competence and aggression have also been observed in children who are in poor day care, that is, day-care settings in which children spend most of their time playing with peers rather than interacting with the caregiver because there are too many children for the caregiver to give close attention to everyone and because the caregiver has no training in child development (Clarke-Stewart, 1987; Howes, 1988; Phillips, McCartney, & Scarr, 1987; Vandell & Corasaniti, 1988; Vaughn et al., 1985). This is especially true if the poor-quality day care begins in infancy and continues through the preschool years (Howes, 1988). In good or poor day-care programs, it seems, children do not learn to follow social rules or to resolve social conflicts without resorting to aggression unless special efforts are made by their caregivers. If children are given direct training in social skills, however, they are more socially competent and less likely to exhibit aggression (e.g., Finkelstein, 1982; Iannotti, 1978; Orlick, 1981; Smith, Leinbach, Stewart, & Blackwell, 1983).
CHILD FACTORS Although there is some suggestion that boys may be more susceptible to day-care influences on negative social behavior and girls to day-care influences on positive social behavior (e.g., Vandell & Corasaniti, 1988), sex differences are not always found, and the data are still insufficient to make strong claims that sex—or other child characteristics—acts as moderator of day-care effects on social adjustment or behavior.

FAMILY FACTORS The data are also insufficient to determine whether parents moderate the effects of day care on their children's social behavior. The pattern of obnoxious behavior and advanced social competence we have described has been observed in both rich and poor families, although more of the latter have been studied. There is only the slightest hint that the effect on negative behavior may be stronger for children in lower class families (e.g., Vandell & Corasaniti, 1988); we have no reason to make strong claims that families moderate these day-care effects. More likely, families reinforce their children's experiences in day care. Children in high-quality day-care programs, for instance, have been found to have parallel experiences at home: Their mothers are more nurturant and responsive and less restrictive and authoritarian than other mothers (e.g., Edwards, Logue, Loehr, & Roth, 1987; Howes & Stewart, 1987).

Mediators of Intellectual Gains

DAY-CARE FACTORS Many attempts have been made to identify aspects of day care that predict intellectual gains in toddlers and preschool children. There have been fewer attempts to identify qualities of infant care that predict later intellectual levels. Golden et al. (1978) did observe that more stimulating, positive, and affectionate care was related to infants' language development, and other researchers (Burchinal, Lee, & Ramey, 1986; McCartney, Scarr, Phillips, & Grajek, 1985) report that children who had been in cognitively oriented model programs as infants did better than children in community day-care programs. The problem is that measurable differences in children's IQs do not show up until past infancy, and by then infants who were in high-quality infant care have also received high-quality toddler and preschool care, confounding the quality of infant care with the quality of later care (which we know also contributes to intellectual gains). We need research in which the quality of later experience is controlled, before we can establish the qualities of infant care that are linked to intellectual gains.

CHILD FACTORS Once again, the literature contains only hints about whether individual differences between infants moderate the effects of day care on intellectual development. Perhaps the most interesting is Ramey, MacPhee, and Yeates's (1982) finding that easy infants gained more on IQ tests if they were in a day-care center than if they were at home, whereas difficult infants did better at home. This makes intuitive sense, but requires further study.

FAMILY FACTORS Day-care-linked IQ gains have been observed for infants from a range of socioeconomic levels; the size of the gain has not been found to be systematically related to socioeconomic status (Fowler & Khan, 1974; Kagan et al., 1978). Thus, there is no evidence that families moderate day-care effects on children's intellectual development, but do parents contribute to the IQ gains observed in day-care infants? Parents of children in good day care have been observed to be less authoritarian and more stimulating and playful than parents of children who are not in these day-care programs (Edwards et al., 1987; Garber & Heber, 1980; Ramey et al., 1983; Rubenstein et al., 1981). One might question, therefore, whether parents are mediating the apparent day-care effect on children's intellectual development. Because samples in the studies showing this difference between parents include subjects who were randomly assigned to day care as well as subjects who chose the better programs themselves, and because the changes in parents' behavior seem to be at least to some extent responses to changes in children's behavior rather than initiated by the parents, it seems more likely that parents are augmenting the day-care effect rather than that they are causing it.

CONCLUSION

As should be clear from even this brief review, we have much to learn about the effects of day care on infants' development. We know that there is a somewhat elevated likelihood that infants in day care will avoid their mothers after a brief separation and that children who were in day care as infants are more likely to disobey their mothers and bully their peers. We also know that infants and children in day care gain knowledge and self-confidence from their experience. We know less of whether these patterns have any short- or long-term benefits or disadvantages for individuals or society and of the factors that moderate and mediate these effects. The consequences of infant day care need continued monitoring by patient, painstaking researchers, who carry out longitudinal studies of infants' development in the con-
text of their family characteristics and their early and later experiences in day care. In the meantime, infant day care policy must proceed from reality. Maternal employment is a reality. The issue today, therefore, is not whether infants should be in day care but how to make their experiences there and at home supportive of their development and of their parents’ peace of mind.

References


