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ABSTRACT

In his article "The 'Effects' of Infant Day Care Reconsidered," Jay Belsky (see PS 017 108) concludes that maternal employment puts infants at risk for developing emotional insecurity and social maladjustment. After a review of Belsky's and other research, a different conclusion is offered in thi paper. It is agreed that infants whose mothers work full-time during their first year are more likely than infants of mothers who work part-time or not at all to be classified as insecurely attached when such infants are observed with their mothers in Ainsworth's Strange Situation procedure. But the difference is not large, and it does not necessarily reflect emotional maladjustment. There is no clear evidence in the literature that day care places infants at risk. Belsky suggests that observed day care effects may be affected by day care quality; children's age, sex, and temperament; hours of separation from mother; overstimulation by mother; and congruence between mother's attitude and work status. There is no convincing evidence that these factors are involved. The mother's attitude toward the infant, her emotional accessibility and behavioral sensitivity, and her desire for independer (her own and the infant's) may be more important factors. Research is needed to assess and investigate such mediating factors. (PCB)

"THE 'EFFECTS' OF INFANT DAY CARE RECONSIDERED" RECONSIDERED: RISKS FOR PARENTS, CHILDREN AND RESEARCHERS

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"THE 'EFFECTS' OF INFANT DAY CARE RECONSIDERED" RECONSIDERED: RISKS FOR PARENTS, CHILDREN AND RESEARCHERS

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Rumors to the contrary notwithstanding,[2] I am not now nor have I ever been an advocate of day care for infants. I am, though, a strong believer in empirical data and the thoughtful analysis thereof. Both in my opinion, in the area of infant day care, have been lacking. I was pleased, therefore, when Greta Fein and Natthan Fox, the editors of this issue of the Early Childhood Research Quarterly, informed me that Jay Belsky had written a comprehensive evaluation of infant day care, focussing on some new data on early maternal employment, and that they were going to feature the article in a special issue of the Quarterly. I eagerly accepted their invitation to write a critical review of Belsky's article assessing the significance and send of the data, analyses, and policy recommendations he presented. The following review is my careful and detailed -- some may say compulsive --but not ideologically motivated response to their request. It turns out to be, inevitably, a complex discussion, because the issue of infant day care consist of a web of interconnected questions -- about day care, maternal employment, attachment and its assessment, and parents' effects on their children's development.

In this article, "The 'Effects' of Infant Day Care Reconsidered," Belsky does us a service by drawing attention to the urgent issue of infant day

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care. His approach to discussing the issue is conscientious and clear, his analysis even-handed and data-based, his argument bold and provocative. Belsky is to be commended for his critical focus of attention, his thorough examination of data, and his willingness to speak out for his convictions--even though they may not be greeted with unanimous enthusiasm. Belsky is also, in my judgment, to be cautioned for a conclusion that is premature and a message--perhaps unintended--that is at best an oversimplification and at worst seriously misleading.

The explicit conclusion that Belsky draws from his evaluation of all the available data regarding the effects of infant day care on children's development is that the ecology of full-time maternal employment puts infants at risk for developing insecure attachments and consequent aggression, noncompliance, and social maladjustment. The implicit message he conveys, however, is that day care is bad for babies, that maternal employment is unfair to infants. Because of the potential impact of this message, it is important that we give serious and critical attention to the data Belsky presents, to possible interpretations of those data, and to the policy implications that should and should not be drawn from them. I have taken up each of these issues in turn.

Attachment

The Data

Belsky's first task is to present the data relating maternal employment to the quality of infants' attachments. He focuses on four recent studies: Barglow, Vaughn, and Molitor (in press), Belsky and Rovine (in press), Chase-Lansdale and Owen (in press), and Jacobson and Wille (1984). His strongest case is the tabulation of results from these four studies, which shows that babies whose mothers worked full time in their first year are

disproportionately likely to be classified as insecurely attached at 12 months compared with infants whose mothers did not work full time (41% versus 26%). These are indeed compelling data. It is to Belsky's credit that he concentrates on recent studies (old data may no longer be applicable), that he includes only studies using a standardized assessment procedure (Ainsworth's validated and reliable Strange Situation; Ainsworth, Blehar, Waters, & Wall, 1978), and that he combines subjects rather than significance levels across studies. This is particularly important and revealing because researchers analyzing smaller data sets have often not found the difference between infants of employed and nonemployed mothers statistically significant (e.g., in Barglow et al.'s study the difference was not significant for later-born children, in Hock's, 1980, study it was not significant for girls, and in Chase-Lansdale and Owen's study it was not significant at all). Combining subjects across studies is an excellent strategy for examining the effects in question. Belsky also could have included in his table results of other available studies of infant day care and the trend would have held up (see Table 1 tabulating cases from 16 studies, total $n = 1201$) -- although the overall difference is somewhat less (37% vs. 29% for insecurely attached infants of full-time employed mothers vs. part-time and nonemployed mothers) and differences in the individual studies are, for the most part, not statistically significant.

I would be more convinced by an argument that we need to combine data across studies to get large enough samples to reveal differences between infants of employed and nonemployed mothers than by Belsky's attempt to dismiss as methodologically inadequate studies in which investigators did not find significant differences. His criticisms that Chase-Lansdale and Owen had a biased sample because they recruited subjects at 12 months rather than

prenatally and that Hock did not find evidence of subtle differences in attachment because she did not videotape her assessments of the Strange Situation, for example, do not ring true. We know little about the reasons parents refuse to participate in any of our studies,2 and narrative recording was good enough for Mary Ainsworth to devise the attachment coding of the Strange Situation in the first place. What is important about all these studies is that when data from a large number of subjects are combined, relatively more babies of full-time employed mothers are classified as insecurely attached. The question is, what does this mean? Why are working mothers apparently more likely to have insecure babies?

Insert Table 1 about here

Interpretations

Belsky interprets the finding of greater insecurity among the infants of working mothers to mean that for these children repeated separations from their mothers have disturbed their emerging attachment relationships, making them doubt their mother's availability and responsiveness, and leading them to develop a coping style that masks their anger. Barglow et al. (1987) go even further, suggesting that these infants interpret their mother's absence as rejection. These interpretations, based on our knowledge of the correlates of insecure attachment in home-reared children, may in the end turn out to be correct. However, it is important to stress here that at present these interpretations are highly speculative. They are not based on data, and indeed alternative explanations do 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 -- the Strange Situation. The Strange Situation has turned out in past research with home-reared children to be a useful index of the mother-infant relationship and a predictor of later behavior problems (see Ainsworth et al., 1978). But it is not infallible. It is not omniscient. When I describe to people who are not developmental psychologists the 20-minute procedure[3] on which the charge of day-care infants' emotional insecurity is based, they are vastly relieved that this is all the researchers are worried about. Before we publicize a conclusion that infants of working mothers are emotionally insecure it is important to validate the pattern observed in the Strange Situation using other 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 is premised or creating a situation in which the infant feels moderately stressed and therefore displays proximity-seeking behavior to the object of his or her attachment. Cross-cultural research, however, shows that the proportions of infants categorized as insecure in the Strange Situation varies widely. In Northern German samples, nearly half the subjects are categorized as insecure-avoidant (Grossmann, Grossmann, Spangler, Suess, & Unzner, 1985; Sagi and Lewkowicz, 1987); in Japan, none are (Sagi & Lewkowicz, 1987; Takahashi, 1986). Unless one assumes that there are large cultural differences in infants' emotional security, either the Strange Situation is not a valid assessment of attachment security or it is not equally stressful for infants in all cultures. The second explanation is clearly preferred. A similar argument could be used to

account for differences between infants of working and nonworking mothers. The Strange Situation may not be equally stressful for these two groups. Consider the features that comprise the Strange Situation -- the infant plays with toys (not his own) in a room that is not his own; he is left by his mother (during day-light hours) with a woman who is not his mother; he plays with and is comforted by that woman in his mother's absence; his mother returns to pick him 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 influence the stressfulness infants experience in the Strange Situation, and consequently the behavior they display. Researchers have observed that infants seek less proximity with their mothers -- they move farther away, stay away longer, and are more likely to avoid them -- when the Strange Situation procedure is carried out in a more familiar setting, at home rather than in the laboratory (Rinkoff & Corter, 1980; Brookhart & Hock, 1976). Goossen's (1987) finding that in the standard laboratory Strange Situation even securely attached infants of nonworking mothers were more likely to be high in proximity seeking and contact maintaining[4] than securely attached infants of working mothers suggests that infants without day-care experience do find the standard laboratory Strange Situation more stressful. Furthermore, not only are the infants of working mothers more likely to be familiar with features of the Strange Situation, so are their mothers. This too might affect infants' behavior. Researchers have found that mothers' behavior in the Strange Situation reunion is related to their anxiety about separation from their infants (McBride & Hock, 1984), and also that infants are sensitive to mothers' emotional signals in ambiguous situations (Campos & Stenberg, 1980).

Clearly we need to assess infants' attachment using procedures that eliminate these differential elements of familiarity and potentially differential stressfulness. Other assessment procedures are available: for example, the observation of somewhat older children's reactions to stories, photos, or films dealing with separation (Kaplan, 1987; Cassidy 1987; Main, Kaplan, & Cassidy 1985) and maternal questionnaires that deal with infants' reactions to everyday separations (Tavecchio & Van-IJzendoorn, 1987; Waters & Deane, 1985). But even more useful for examining differences between infants of working and nonworking mothers would be assessment procedures using stressors other than unfamiliar women and separations from Mother. These might include, perhaps, hunger, cold, fatigue, illness, threats, or visits to the doctor's office.

A second restriction on our interpretation of the observed difference in attachment between infants of working and nonworking mothers is the fact that coding of infants' behavior has been limited to the classification of infants into three categories: type A (insecure-avoidant), type B (secure), and type C (insecure-ambivalent/resistant), or sometimes into just two categories: secure and insecure. We might look for finer distinctions in behavioral patterns, even in the Strange Situation. Differences between infants of working and nonworking mothers are linked to distinctions within the insecure category, for example. Although the proportions of <u>both</u> type As and type Cs are elevated among the infants of working mothers, the preponderance of "aberrant" cases falls into the type A-avoidant group (23% vs. 11% for type A infants, and only 17% vs. 14% for type C infants in the three studies from Belsky's Table 1 that reported their type A/C proportions; 23% vs. 16% for type A infants and 15% vs. 13% for type C infants in my Table 1). It may also be the case that differences between the infants of working

and nonworking mothers are linked to distinctions within the type A category. Some of the infants of working mothers who are classified as type A may indeed be actively avoiding their mothers; others may be merely ignoring their mothers. These latter babies would "readily separate to explore during pre-separation" (Sroufe, 1983, p. 50), "ignore the mother on her return, greeting her casually if at all," "show little tendency to seek proximity to the mother," and "treat the stranger much as the mother is treated" (Ainsworth et al., 1978, p. 59) -- in a casual, not an anxious way. Researchers have recently identified a new category of attachment -- type D -- to describe the reactions of disorganized infants to the Strange Situation. Perhaps we could identify a new category of secure children within the type A group to describe the reactions of day-care infants to the Strange Situation. The type A classification as it is currently coded could be hiding a number of subtypes, including children who do not find the Strange Situation stressful, children who are unusually self-reliant, and children who are precociously independent[5] -- as well as children who are insecurely attached.

There are several hints in the literature that this may be the case. For one, Grossmann et al. (1985) note that the type A children in their Northern German sample were self-reliant and object-centered and had mothers who were as sensitive and responsive as the mothers of American infants who were classified as secure. For another, Vaughn, Dean, and Waters (1985) found that, among the infants of working mothers, the insecure infants were not different from the secure infants in later measures of adjustment and problem solving. For a third, as Belsky notes, a number of researchers (Finkelstein & Wilson, 1977; Kagan, Kearsley, & Zelazo, 1978; Ricciuti, 1974)[6] have found that day-care infants are more willing to leave their mothers to approach a stranger. Belsky claims that we do not know the developmental significance of

such physical distancing, but in fact we do know: as children get older (from 12 months on) they spend less time close to their mothers, go farther distances from them, and initiate less physical contact with them (Clarke-Stewart & Hevey, 1981; Rheingold & Eckerman, 1970). Thus, the day-care infants' distancing behavior could be seen as more advanced (rather than more avoidant). A fourth hint comes from the fact that trained coders classified as type A the reactions of 26% of the children in one sample of day-care infants (Ainslie & Anderson, 1984), yet these children, unbeknownst to the coders, were in the Strange Situation with caregivers from their day-care centers, not with their mothers. It is unlikely that they were "insecurely avoidantly attached" (or perhaps attached at all) to these caregivers.

To settle the issue of whether there are different kinds of type A babies (and different patterns and etiologies of type A behavior) one might start by examining the videotapes of the type A children's behavior in the Strange Situation to see if separate dimensions of independence, self-reliance, and anxiety (insecurity) could be reliably coded and if they differentiate infants of working and nonworking mothers.[8]

A third issue of importance for interpreting the observed difference between the infants of working and nonworking mothers is the question of how extreme the observed difference is. We know that the difference is statistically significant, but in practical terms how significant is it? The biggest difference is in the likelihood of the infant's being classified as insecure -- 37 percent in working-mother groups versus 29 percent in nonworking -- a difference of 8 percent. This is a substantial, as well as a significant, number, but surely it is not a large enough number to conclude that infants are in danger if their mothers work. Putting these numbers in a

broader context, if we compare the proportion of type A and type C infants in Belsky's four studies or in my more inclusive Table 1 with the proportion of type As and type Cs found in other samples, we find that 22 percent type As is not out of line: there were 20 percent type As in Ainsworth's original Baltimore sample, 23 percent in Swedish samples, 24 percent in Holland, 31 percent in a Southern German sample, and 48 percent in Northern Germany; nor is 15 percent type Cs exceptional: there were 17 percent type Cs in research in Israel (nonkibbutz families) and 25 percent in Japan (Sagi & Lewkowicz, 1987). This suggests to me that proportions of type As and type Cs observed among the infants of working mothers in the United States although significantly different from the proportions among infants of nonworking mothers, are within the normal range.

Another way of looking at how different the infants of working and nonworking mothers are is to examine mean differences between the groups on scales of avoidance and resistance. Unfortunately, Belsky did not tabulate these data. He makes much of the fact that 82 percent of the infants in Schwartz's (1983) full-time maternal work group scored "moderate to high (i.e., greater than 3)" on a 7-point scale of avoidance (vs. 50% for infants of part-time workers and 35% for infants of nonworkers). Actually, the scores for 82 percent of the infants of working mothers were greater than or equal to 3, and their average was score 3.1. What this seems to suggest is that while day-care infants may be consistently higher on scales of avoidance, they are not extremely so. In Belsky and Rovine's study (in press) the (significant) difference in avoidance was 1 scale point (presumably also on a 7-point scale, although they do not say). Finally, to point out the likelihood that we are not talking about gross behavioral aberrations, we note Belsky's comment that an observer needs to view (and review) videotapes of the Strange Situation in

order to accurately code the subtle evidence of infants' avoidance of their mothers.

A fourth 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 permanent or global personality trait. If the children of working mothers are more avoidant toward them (even extremely so) this does not necessarily mean that those children are disturbed and maladjusted in general. The data Belsky presents (from Belsky & Rovine, in press, and Chase-Lansdale & Owen, in press) suggesting that children of working mothers are more likely also to be insecurely attached to their fathers are still too few and preliminary to make a strong case for a broader pattern of disturbance. For example, in Belsky and Rovine's study, fathers in the working-mother group had lower levels of education than fathers in the nonworking-mother group; the effect on attachment security was observed only for boys; and the opposite effect was observed for girls. It would be a good idea before labelling the infants of working mothers emotionally insecure to assess their emotional health in a broader range of situations and with a broader range of partners.

The final and perhaps most significant difficulty in interpreting the data showing that infants of working mothers are more likely to be insecure or avoidant is the problem of self-selection. Mothers who work and who use infant day care differ in many ways from whose who do not (e.g., Hock, 1980), and children placed in day care are different from nonday-care children even before they are enrolled (e.g., McBride & Belsky 1986; Blurton Jones, Ferreira, Brown, & Macdonald, 1980). These differences may lead to the greater insecurity or avoidance of mother observed among infants of working mothers. More working mothers are single parents (Vaughn, Gove, & Egeland,

1980), for example, and more infants of working mothers have adaptable temperaments (Lerner & Galambos,1986; McBride & Belsky, 1985). Belsky mentions the problem of self-selection, but it is a problem that needs greater emphasis.

In su , 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 Belsky appears to, as suggesting that these children are emotionally insecure.

Aggression and Maladjustment

The Data

The second section of "The 'Effects' of Infant Day Care Reconsidered" is a summary of another body of research, from which Belsky concludes that children who were in day care as infants later are more aggressive, noncompliant, and maladjusted. Unfortunately for Belsky's argument, the evidence that children who were in infant day care are later socially maladjusted is weaker than the evidence of a difference in attachment. None of the six studies he cites [Schwarz, Strickland, & Krolick, 1974 (Syracuse); Schwarz, 1983 (Bermuda); Rubenstein & Howes, 1983 (Boston); Barton & Schwarz, 1981 (Connecticut); Haskins, 1985 (Frank Porter Graham Center); Vaughn et al., 1980, 1985 (Minnesota)] offers strong support on its own, and in this case the whole does not seem greater than the sum of its parts.

In three of the studies the aggression and noncompliance of day-care children disappeared with time [Schwarz, Strickland, & Krolick, 1974 (Syracuse); McCartney, Scarr, Phillips, Grajek, & Schwarz, 1982 (Bermuda)] or with a change in the day-care curriculum [Finkelstein, 1982 (Frank Porter Graham Center)]. In two of the studies, although there were differences

between children whose mothers did or did not work in their first year on some measures of maladjustment, there were no differences on other measures of anxiety and behavior problems (Rubenstein & Howes, 1983) or compliance and aggression to mother (Vaughn et al., 1985). In the study in which there was a statistically significant difference in anxiety (McCartney et al., 1982), day-care children were still well within the normal range. Finally, in all the studies except Vaughn et al.'s and Rubenstein and Howes', the comparison was not between infants of full-time working and nonworking mothers but between children who had been in day-care centers versus other forms of infant day care (Schwarz et al., 1974, Haskins, 1985; McCartney et al., 1982) or between infants with any supplementary care versus those with none (Barton & Schwarz, 1981). In the Bermuda study no difference was found between children who had received maternal care and children who had received babysitter care (McCartney et al., 1982). One might also note that four of the six studies Belsky cites involved poor, black, or high risk samples, not representative ones.

In brief, the evidence that children whose mothers were employed in their infancy are socially maladjusted is simply not there.

Interpretations

Presumably Belsky presents such weak data because of his conviction that day-care infants are insecurely attached and because of the theory that this insecurity puts them at risk for later maladjustment. But what is the evidence for this theoretical link between insecure attachment and maladjustment?

The empirical evidence cited by Belsky comes from a relately small number of studies: work by Main (Main & Weston, 1982; Londerville & Main, 1981), Maslin and Bates (1982), Lewis, Feiring, McGuffog, and Jaskir (1984), and the

Minnesota group (Farber & Egeland, 1982; Joffe, 1981; LaFreniere & Sroufe, 1985; Erickson, Sroufe, & Egeland, 1985; Sroufe, 1983). Not all studies show such a link. Bates, Maslin, and Frankel (1985) found that children who were insecurely attached to their mothers were not more aggressive. Buchanan (1981) found that infants who avoided their mothers in the Strange Situation were more adaptive than securely attached ones in a play situation with a stranger. And even in the Minnesota study, although insecure attachment and maladjustment were statistically correlated, a substantial number of secure and avoidant children did not fit the pattern. In preschool teachers' descriptions of the children who had been classified as type C infants with their mothers, indeed, all were immature, angry, and impulsive, but among the nine type Bs there were four who were nonoptimal (depressed, dependent, spacey, evasive), and among the eight type As, there were two who were doing well--self-reliant and dominant, capable and warm, rather than angry or unhappy (Sroufe, 1983). In observations of the children in this study made in preschool, although the compliant children tended to have been securely attached as infants, the noncompliers included both children who earlier had been insecure, angry, and noncompliant and also children who earlier had been secure and compliant and who, in preschool, were calm, intellectually mature, and socially skilled (Egeland, 1983). The link between infant insecurity with mother and later maladjustment, thus, is quite loose. In none of the foregoing studies, moreover, was the development of children of working mothers compared with the development of nonworking mothers. The only study that included this comparison (Vaughn et al., 1985) showed that among the infants classified as insecure, the infants of working mothers performed consistently, if not significantly, better than the infants of nonworking mothers [e.g., on the Bayley scale of Mental Development (104 vs 97) and in

behavioral assessments of aggression to mother, compliance, noncompliance, task persistence, and quality of mother-infant interaction]. Based on all these data, one must question Belsky's interpretation that the increased likelihood of insecure attachment in infants of working mothers puts them at risk for later maladjustment.

One might also question whether the aggressive and noncompliant behavior observed in the children who had been in infant day care should themselves be interpreted as evidence of maladjustment. Like the pattern of avoidance observed in the Strange Situation, it is possible that the pattern of aggression and noncompliance observed in these studies reflects greater independence or maturity in day-care children rather than disturbed behavior. One notes that these aggressive, noncompliant day-care children did as well as or better than nonday-care children on measures of social, language, and intellectual development, achievement, and self-confidence (Schwarz, 1983; McCartney, et al., 1982; Haskins, 1985; Schwarz et al., 1973; Mangione, 1987; Hans, 1987; Rubenstein & Howes, 1983; Rubenstein, Howes, & Boyle, 1981; Macrae & Herbert-Jackson, 1976; Lay & Meyer, 1972). One might note also that the measures of noncompliance used in the studies Belsky cites included assertiveness (e.g., Rubenstein & Howes' compliance in a boring task)--which is not the same as active disobedience (doing the opposite or acting out) (Crockenberg & Litman, 1987).

In sum, in my evaluation of available evidence, Belsky's proposition that children who were in infant day care are socially maladjusted is not empirically supported.

Moderators of Infant Day Care Effects

In the third section of his paper, noticing that "50 percent or more" 8 of the infants who had extensive nonmaternal care in the first year did manage to

develop secure attachments to their mothers, Belsky looks for individual differences among infants, mothers, and child-care arrangements to account for the different patterns of attachment observed within the infant day care group. Here Belsky stretches his search and our credulity to the breaking point. The main problem is that there have been no studies in which this issue has been probed directly, and the indirect evidence Belsky marshalls to support his speculations is not satisfactory.

First, as Belsky himself discovers, there is inadequate evidence to ascertain whether the secure or insecure attachment of individual infants in day care is related to the type of day care (center versus home), the stability of day care, or the quality of day care experienced by the infants. In fact, the data here are even weaker than Belsky admits: In the studies Belsky cites, day-care setting is confounded with quality, quality is confounded with curricular emphasis, the effects are weak and impermanent, and the samples are small (e.g., Belsky's own data showing that center children are disproportionately likely to be insecurely attached is based on an n of six children, four of whom were insecure). Belsky speculates, however, that, although there is insufficient empirical evidence, these day-care qualities will probably turn out to be important moderators of individual children's development of attachments. While no one is going to suggest that better day care is not better for babies -- and, in fact, more stimulating, positive, and affectionate care has been found (despite Belsky's claim) by Golden et al. (1978) to be related to infants' language development and emotional functioning -- the question is why one would expect the quality of day care to be related to the development of an infant's attachment, a measure of the infant's relationship with his or her mother? Possibly bad day care (unstable, crowded, neglectful, abusive) would affect the relationship,

because it would affect the child's emotional well-being, but it does not follow that good day care would enhance the relationship or ensure its security. The quality, stability, or type of day care -- within the normal range of programs available for study -- does not seem to me to be a likely source of individual differences in attachment.

The same question could be asked about the moderating influence of timing, the second potential moderator of day-care effects discussed by Belsky. In the broad time scale, the age at which a child starts day care may be important; starting day care at 6 months is undoubtedly a different experience from starting it at 3 years of age (although children who start at 3 years are also likely to maintain a greater distance from their mothers and to be more noncompliant with them than children who are not in day care; Clarke-Stewart, 1984). But why would we expect children to develop insecure attachments if they start day care between 6 and 9 months of age, when attachment is "crystallizing," rather than between 3 and 6 months, when it is forming in the first place? Collecting relevant data as Belsky advises will not hurt (although it will be hard to separate age of entry into day care from length of time in day care and still get comparable attachment evaluations and it will, as usual, be hard to control self-selection factors) -- but I'm not sure it will help.

Belsky next considers the possible moderating effects of individual differences among children themselves, in particular, sex and temperament. Again the data fall short of any kind of proof. It is necessary for this kind of analysis to do the kind of summarizing of cases across studies that Belsky did for the attachment data. Unfortunately, this effort was not made for moderating variables, possibly because of differences across studies in assessments of the moderating variables (like temperament) or because not all

researchers have broken down their analyses by moderator variables (like sex). But until such an effort is made, we will not have an adequate picture. Belsky suggests that the evidence points to boys as being more vulnerable to day-care effects (i.e., more likely to be insecurely attached). This suggestion that boys are more vulnerable, however, is based on a small number of studies (Belsky & Rovine, in press; Benn, 1985; Chase-Lansdale & Owen, in press; Cochran & Robinson, 1983; Hock & Clinger, 1980) and subjects (Benn and Chase-Lansdale & Owen used overlapping samples, and Benn's sample included only 11 girls, for example). Even in those few studies, moreover, the evidence that boys are more vulnerable than girls is not clear. In Hock and Clinger's sample the boys had been in day care longer than the girls. In Cochran and Robinson's sample day-care boys were not more insecurely attached than day-care girls; they just spent more time playing cops and robbers in the day-care center than did boys in day-care homes. In Belsky and Rovine's and Chase-Lansdale and Owen's samples, the greater vulnerability of boys was in attachment to father, not to mother.

Belsky also suggests that mothers of sons are more likely than mothers of girls to stay home, even if they had intended to work, because they sense their infant sons' vulnerability. If it is true that such selectivity exists -- and again here we only have Belsky's own data as evidence -- this is a creative idea. But surely as any psychoanalyst, sociologist, sociobiologist, sex-role psychologist, or anthropologist would avow, there are other plausible explanations of why mothers of sons might be more inclined to want to stay home (explanations like the seductive nature of mother-son relationships, the greater investment of parents in sons, or the greater value placed on boys by society).

A more likely moderator of day-care effects and selectivity than the child's sex, it seems to me, may be the child's constitutional vulnerability, perhaps reflected in assessments of infant temperament. So far, only Belsky's data are available to examine this issue. He did find that among the infants of working mothers, those who were insecurely attached had more difficult temperaments. We need more research on this issue. The issue of whether mothers decide to stay home or to go to work depending upon their infant's temperament may not be as important. Researchers have found that mothers of difficult, unresponsive, and unadaptable infants are more likely not to work (even if they had intended to) and to be more anxious about separation (Stith & Davis, 1984; Lerner & Galambos, 1986; McBride & Belsky, 1985, 1986) -- although this is not found in every sample (Hock, Christman, & Hock, 1980; McBride & Belsky, 1985). So selectivity may be operating to "protect" unadaptable infants. What the existence of any evidence of selectivity suggests to me, however, is the importance not of child characteristics but of mothers' perceptions and actions in determining who is vulnerable, who is at risk. In Belsky's study it was not objective assessments of infant behaviors (i.e., newborn Brazelton scores) that were linked to insecure attachment, but mothers' perceptions of their infants' temperaments.

Maternal attitudes and behavior seem to me to be the most logical place to search for moderators of the effects of maternal employment on infant attachment. The question is how to search. Just as there may be several kinds of children whose behavior in the Strange Situation is coded as insecure, and several kinds of children who are noncompliant in preschool, there may be several kinds of mothers who promote their children's avoidance, resistance, and noncompliance. One kind undoubtedly is the kind of mother whose rejection of contact with the infant has been linked to insecurity and

noncompliance in home-reared children. Perhaps there is even an increased likelihood of this kind of rejection in working mothers. This could occur through self selection -- infant-oriented mothers stay home; career-oriented mothers go to work. In Hock, Morgan, and Hock (1985) study, for example, mothers who intended, when their babies were born, to stay home, 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 the greatest aversion to infant fussiness at 3 months. It could also occur through increased stress in the dual career or dual income family, leading to more rejection of every additional burden--including the baby. Among mothers who work, this suggests, there may be some for whom going to work is, in a sense, a rejection of motherhood and of the infant. This might be one high-risk group for developing insecure attachments.

Related to but not the same as this source of insecurity would be the lessened availability of some working mothers...not in the obvious way because they are away all day, as Belsky suggests, but because the mothers have to do more distracting chores and tasks that compete with the infant when they are there. A third source of insecurity might be the psychological inaccessibility of some working mothers. Many working mothers feel overworked and tired; they feel life is hard; they are rushed and harried (Wright, 1978; Burke & Weir, 1976; Hoffman & Nye, 1974; Thomopoulos & Huyck, 1976; Vaughn et al., 1980; Welch & Booth, 1977). It is not unreasonable that these mothers would be less accessible to their infants. Yet another source of insecurity might be the greater insensitivity of some working mothers -- insensitivity that could be increased by the mother's spending less time with the infant (as opposed to the infant's spending less time with the mother -- the usual explanation). Finally, one more source might be a difference in values, with

employed mothers valuing and deliberately encouraging their infants' independence more than nonworking mothers.

In sum, full-time maternal employment could be linked to a greater likelihood that a mother will be unavailable, insensitive, rejecting, or value independence. Self-selection would account for the link with mothers' values and attitudes; the employment situation itself could increase mothers' unavailability and insensitivity. Any of these explanations of the differences between the infants of working and nonworking mothers seems to me to be more reasonable than the suggestion that infants of working mothers interpret their mother's separations as rejection or find her absence unpredictable. (Infants undoubtedly do less interpreting than researchers!) The fact that infants with part-time working mothers are not more likely to develop insecure attachments than infants with nonworking mothers suggests that separations per se are not the source of infants' insecurity. Nor, apparently, are hours of absence the source of infants' insecurity -- although this might seem to be suggested by the finding about full-time versus part-time maternal employment. For one thing, research shows that infants are as likely to develop secure attachments to their fathers as to their mothers (e.g., Easterbrooks & Goldberg, 1984), and clearly fathers spend much less time with the infants than mothers do. For another, as Belsky indicates, there is some suggestion that infants of working mothers are more likely than infants of nonworking mothers to develop insecure attachments to their fathers as well as to their mothers; yet we have no evidence that men with working wives spend less time with their infants than men with nonworking wives. For a third, researchers have found that the time mothers and infants spend together is not related to the infant's attachment development (Clarke-Stewart, 1973; Schaffer & Emerson, 1964). The explanation for differences in

infants' emotional development, it seems, must lie at the psychological level of parents' attitudes and behavior.

What then is the empirical evidence that working mothers' attitudes and behavior are sources of infants' insecure development? Unfortunately, again, the data are disappointing. Part of the problem lies in our research strategies. If we simply compare mean scores of groups of working and nonworking mothers on dimensions like sensitivity, rejection, and values, we may not get significant differences, because on each dimension only some portion of the mothers in the group are extreme. It is not surprising, therefore, that no group differences have been observed between working and nonworking mothers in interaction, physical contact, responsiveness (Easterbrooks & Goldberg, 1984; Stith & Davis, 1984; Rabinovich, Suwalsky, & Pedersen, 1984; Zaslow, Pedersen, Suwalsky, & Rabinovich, 1983; Zaslow, Pedersen, Suwalsky, Cain, & Fivel, 1985), sensitivity (Goossens, 1987), or rejecting attitudes (Lerner & Galambos, 1986) with their infants. Chi square analyses of maternal types (e.g., insensitive, rejecting) might be more revealing than tests of mean differences.

Another part of the problem is that relevant studies simply have not been done. Belsky's highly speculative suggestion that working mothers insensitively overwhelm their infants with hugs, kisses, play, and stimulation when they get home from work is extremely (perhaps dangerously) farfetched. He bases the suggestion on results from three studies: Pedersen, Cain, Zaslow, and Anderson's (1982) finding that working mothers were more interactive than nonworking mothers in early evening, weekday observations and Schwartz's (1983) finding that working mothers expressed more physical affection to their babies, combined with Belsky, Rovine, and Taylor's (1984) finding that overstimulation by (nonworking) mothers is linked to avoidance in

their infants. Pedersen et al.'s study was based on two 1-hour observations of 13 working mothers; the observed differences, though statistically significant, were small: 70 versus 56 ten-second units (out of a possible 240 units) of talk and 7 versus 6 units of play. Schwartz's observations were based on 1/2-hour observations of 10 working mothers; part-time working mothers, whose children were not more avoidant of them, also did more hugging and kissing than nonworking mothers. Pedersen et al.'s finding has not been replicated, and in fact, differences in the opposite direction have been found: working mothers did less playing with objects with their infants (Zaslow et al., 1983) and less quiet playing and talking with older children (Stuckey, McGhee, & Bell, 1982) than nonworking mothers. Moreover, evidence that parental overstimulation leads to infants' avoidance is far from compelling. No analysis of a possible link between overstimulation and insecurity was made in Pedersen et al.'s study, and in research other than that cited by Belsky, more stimulation, not less, has been found to be related to the development of secure attachments (e.g., Clarke-Stewart, 1973, see figure 6). In none of these studies has the causal direction of the link between parents' behavior and infants' attachment been established. In brief, there is no solid evidence that working mothers are more stimulating than nonworking mothers, or that, if they were, this would lead to infants' developing avoidant attachments.

What about other maternal qualities then -- is there any evidence that they are linked to insecure development in infants of working mothers?

This question has been studied to a very limited extent. In Farber and Egeland's (1982) study, working mothers whose infants were insecure were found to have expressed less desire for motherhood prenatally. In Benn's (1986) and Belsky and Rovine's (in press) studies, working mothers whose infants were

insecure were found to be less competent, sensitive, integrated, empathic, and happily married. In Owen and Cox's (in press) study, mothers who had to work long hours (more than 40 hours a week) were more dissatisfied and anxious; anxious[9] 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 as there are in families with nonworking mothers, but we need more research to identify and clarify these links. It is likely that some infants of working mothers are avoidant because their mothers are always busy, some because their mothers are not sensitive to their signals, some because their mothers stress independence, some because their mothers reject them, perhaps even a few because their mothers are overstimulating. We need to look for individual paths of development in order to account for the emotional health of children whose mothers are employed -- just as we have done in the past for children whose mothers stay home.

The last moderating variable that Belsky discusses is the congruence between mothers' attitudes toward working and the reality of their work situation. On the face of it, it would seem preferable -- for mothers at least -- to have attitudes that are congruent with reality. But is there evidence that such congruence is linked to better care of infants -- or incongruence to worse care? And, if so, what does it mean anyway? Perhaps mothers with congruent behavior and attitudes are able to give better care because they have resources that allow them to choose whether to work or not, not because they have attitudes congruent with their actions. Belsky suggests that the reason working mothers give poor care is that their attitudes are incongruent with their situation -- they do not want to work but have to, and

so they feel guilty and overstimulate their infants. It is far from clear that guilt about working is linked to not wanting to work; mothers who do want to work also feel guilty. But be that as it may, the evidence that congruence makes a difference in infant care or infant development is limited to three studies (Hock, 1980; Stuckey et al., 1982; Everson, Sarnat, & Ambron, 1984) [10] -- and the results of these three studies are inconsistent. We clearly have no solid evidence as yet about the relevance of maternal attitudes toward work as a moderator of day-care effects.

Policy

Having drawn his conclusions and staked his claims suggesting that infants placed in full-time day care are at risk for emotional maladjustment, with a greater show of impartiality, Belsky declines to draw any policy implications. Perhaps this is appropriate. My fear, though, is that by not saying what policy implications should not be drawn, Belsky leaves mothers and media mavens to infer that what this all means is that mothers of infants should not work. Such an inference is not appropriate. The weakness of the data and the speculativeness of Belsky's interpretation of them I have pointed out. But there is more. Even if these children are at risk for developing the problems of insecure attachment and social maladjustment that Belsky describes, perhaps the risk is worth it. Perhaps it is worth having 9 percent more children insecurely attached to their mothers and less compliant with them in order to let women exercise significant choices in their lives, to allow them to exploit their opportunities to work and to raise their families' income levels and standards of living. We know that children do not thrive in poverty or when their parents are depressed. In one recent study (Hock & DeMeis, 1987), the most depressed women were those who wanted to work but were

home with their infants. There may be as much danger in advocating that women not work as there is in letting them choose for themselves.

It is important for mothers to be informed when they decide if, when, and how much to work. But they should be informed, not threatened. It is a threat when experts tell mothers that they are placing their children at risk for emotional maladjustment. It is informative to say that they may be increasing the possibility that their children will not stay (or possibly feel) as close to them or be as obedient as if they stayed home with them for the first year. The latter is a risk mothers might be willing to take -- especially if they value independence and assertion in children, and if it were pointed out that children in day care have an increased likelihood of developing intellectual and social skills sooner. It would not be news to any working mother that juggling a job and motherhood is risky. They know that. But inflicting more guilt is unlikely to benefit mothers or infants -- especially Belsky-inflicted guilt about overwhelming the infant with hugs and kisses when the mother gets home at the end of the day. If you take away working mothers' "quality time," what are they left with? In my opinion, the data presented by Belsky do not suggest either that mothers should stay home or that infant day care should be expanded or improved.

Conclusion

In "The 'Effects' of Infant Day Care Reconsidered" Belsky makes a number of important and incontestable points: Among infants of full-time working mothers, avoidant attachments are overrepresented. The link between this overrepresentation of avoidant attachment and subsequent maladjustment is circumstantial, because perfect field research is almost impossible. The observed difference between the infants of working and nonworking mothers is the result of the total ecology of maternal employment, not the effect of day

care itself. We need longitudinal research on children of working mothers to investigate the possible developmental effects of maternal employment and infant day care.

Until we have such longitudinal data, I submit, we should be extraordinarily careful about the messages we convey -- explicitly or implicitly -- to the journalists who write magazine articles for the American masses or to the parents of young infants who read them. My interpretation of the research literature analyzed by Belsky does not lead at all to his conclusion that the infants of full-time working mothers are likely to be emotionally maladjusted. After careful scrutiny of the available data the conclusions I draw are much more circumspect. I agree that infants whose mothers work full time during their first year of life are more likely than infants of mothers who work part time or not at all to be classified as insecurely attached (primarily avoidant) when observed with their mothers in the Strange Situation. Although this difference is consistent across studies and statistically significant, however, in my judgment it is not alarming or grounds for advising mothers of infants not to work. First, the size of the difference, in real terms, is not large (8% greater probability of being classified as insecure or 1 scale point on a 7-point scale). Second, the difference does not necessarily reflect emotional maladjustment. It is based on a single assessment procedure, with a single partner -- Mother. It is possible that infants of working mothers find the Strange Situation less stressful than the infants of nonworking mothers, because of their experiences of separation from Mother, care by another woman, and so on, and so they exhibit less proximity seeking and are more likely to be classified as avoidant. It is also possible that working mothers value and may even promote their infants' independence more than nonworking mothers do. Although there

is some evidence that children who were in day care as infants are later more aggressive and noncompliant, that evidence offers no support for the maladjustment argument either. The aggressive, noncompliant behavior pattern observed was not permanent; it was not found for infants in all kinds of day care; it was not severe enough to warrant concern -- particularly given the fact that the children from infant day-care programs were developmentally advanced in other ways -- and we do not know if it was a consequence of earlier insecurity.

But even if the Strange Situation does reflect an increased probability of emotional insecurity among infants of working mothers, the reason for this may be that mothers who are less infant-oriented have self-selected themselves into employment and tilted the distribution of infants' attachments in the working mother group toward insecurity. Recommending that such mothers stay home with their infants is unlikely to ensure the infants' secure development. For developing a secure attachment relationship with Mother what probably matters most is the mother's sensitive and affectionate behavior with the infant.[11] Of course, the mother's ability to act in this way depends not just on her attitudes (which would be reflected in her choosing to work or not) but on her circumstances. And, undeniably, balancing a job and a family can create stressful circumstances. These stresses may make working mothers (and fathers) less available, accessible, and sensitive, and this may contribute to the greater number of insecurely attached infants among working mothers. Given this possibility, then, even if the numbers of insecure infants among working mothers are not alarming, it makes sense for us to investigate ways of informing, educating, and supporting working parents of young children. That seems to me to be a more humane and sensible conclusion to our present state of semi-ignorance than implying or advocating that

mothers of young children not work. To get out of our state of semi-ignorance, though, the clearest and final conclusion of this review must be that what is called for most urgently is more careful, more thorough, and more creative research, so that at some time in the near future we can discuss the effects of maternal employment and infant day care on the development of young children -- authoritatively, consensually, and publicly.

Footnotes

[1]I wish to acknowledge and express my appreciation to several people who read this paper and/or who contributed their unpublished data to it. They are Ellen Greenberger, Wendy Goldberg, Christian Gruber, Linda Fitzgerald, Ann Easterbrooks, Leila Beckwith, Carol Rodning, Lewis Lipsitt, and Lyn LaGasse.

[2]The reason that samples recruited prenatally or samples recruited for other purposes show bigger differences between work and nonwork groups than samples recruited specifically to study maternal employment may be that there are confounding factors that distinguish working and nonworking groups which have not been controlled and balanced in the former studies (e.g., family's income level, mother's education, and so on).

[3]For readers who are not totally familiar with the Strange Situation, it consists of the following seven episodes, each 3 minutes long: (1) the Mother brings the infant into a playroom and puts him or her down; (2) a stranger enters the room, attempts to play with the infant; (3) the mother leaves the room; (4) the mother returns and the stranger leaves the room; (5) the mother leaves the infant alone in the room; (6) the stranger returns; (7) the mother returns, greets and picks up the infant. Assessment of the infant's attachment is based, primarily, on his or her response to the mother in the final episode.

[4]Infants of nonworking mothers were more likely to be classified as subtype B4 and less likely to be classified as subtypes B1-B2 than infants of working mothers.

[5]Precocious independence is not necessarily optimal developmentally, but it is not identical to insecure avoidance.

[6]Actually these studies do not provide compelling evidence that day-care infants are more willing to leave their mothers. Finkelstein and Wilson's day-care subjects were observed with a day-care teacher, not with their mothers; they were more willing to leave the day-care teacher than children of nonworking mothers were to leave their mothers. Ricciuti's day-care subjects were deliberately encouraged by their mothers to approach the group of unfamiliar children. The day-care and home-care children in Kagan et al.'s study were not different in measures of their proximity to either mother or a stranger.

[7]Belsky has promised to send me his videotapes to see if this is possible.

[8]Actually based on the data Belsky presents the figure should be 60 percent. This an example of the kind of slipperiness that leads one, mistakenly perhaps, to infer that (Belsky thinks) infant day care is more dangerous than the data suggest.

[9] Actually in this study the mothers who worked long hours were more anxious even before they began work (though not before the baby was born), suggesting that self-selection or anticipation of work conditions might be involved.

[10]Schubert, Bradley-Jonnson, and Nuttal, 1980, studied only nonworking mothers who did or did not want to work--and found no difference; Belsky and Rovine (in press) found no difference.

[11]There is no convincing evidence that the attachment insecurity of working mothers' infants is the result of their day-care experience (type, quality, stability of day care), starting age (within the first year), sex, number of separations, or hours of absence.

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Table 1

Attachment to Mother for Infants of Employed and Non-Employed Women

Investigation[a]	Infants' Attachment Classification at 12-20 Months: A (Avoidant)		B (Secure)		C (Ambivalent)	
	Maternal Employment Status in Infant's First Year: Full-time	Part-time/ Non-Employed	Full-time	Part-time/ Non-Employed	Full-time	Part-time/ Non-Employed
Vaughn, Gove, & Egeland (1980)	16	22[b]	18	39	0	9[b]
Thompson, Lamb & Estes (1982)	3[b,c]	4[b]	4	26	2	4
Ainslie & Anderson (1984)	3		22		10	
Jacobson & Wille (1984)[d]	6[b]	14[b]	5	59	2[b]	7[b]
Owen, Easterbrooks, Chase-Lansdale, & Goldberg (1984)[e]	1	5	18	30	2	0
Easterbrooks & Goldberg (1985)[e]	1	6	23	40	2	1
Benn (1986)[e]	10		19		1	
Goossens (1987)	6	7	29	44	5	7
Barglow, Vaughn, & Molitor[d]	17	10	29	51	8	13
Belsky & Rovine[d]	13	11	33	69	12	11
Chase-Lansdale & Owen (in press)[d,e]	5	4	29	44	5	7
Owen & Cox (in press)	3	5	4	15	5	2
Beckwith (in progress)	2	5	12	13	5	10

Easterbrooks & Harmon (in progress)	2	2	8	25	3	10
Lipsitt & LaGasse (in progress)	4	16	7	46	3	10
Rodning (in progress)	8	13	19	47	4	11
Totals						
Cases	100	124	279	535	65	98
n = 444 full-time employed n = 757 part-time/non-employed						
Percentages	22	16	63	71	15	13

[a]Arranged chronologically; includes all studies I could find reporting strange situation classifications of infants who were placed in day care or whose mothers were employed (full-time = $\geq$20 hours/week; part-time $\leq$20 hours/week; starting in the first year of life).

[b]Since the number of type As and type Cs were not reported separately, the numbers of A and C cases were estimated from available data and available norms.

[c]In this study full-time child care (maternal employment) equals greater than or equal to 15 hours/week.

[d]Reported in Belsky's Table 1 for secure vs. insecure.

[e]There was some (but not total) overlap in subjects among these studies, which I was not able to separate. If subjects from Owen et al. (1984) and Easterbrooks & Goldberg (1985) studies are dropped from the table, the percentages from left to right are as follows: 25, 17, 60, 69, 15 and 14. This increases the difference in the percentage of insecure infants for working versus non-working mother (compared to the total sample with these two studies included) from 8 percent to 9 percent.