

I. A new instrument for measuring quality of attachment: The California Attachment Procedure. Some preliminary results

Are children with early and extensive day care experience more likely than children without such experience to be insecurely attached with their mothers? It has by now been accepted that children who start day care in their first year and spend more than 20 hours per week there are more often classified as avoidantly attached in the Strange Situation (SS) than their more traditionally reared counterparts (Belsky, 1988; Clarke-Stewart, 1989).

Because the SS makes use of brief separations from the mother as a means of eliciting attachment behavior, it has been suggested that some of these children may mistakenly be rated as avoidant because they are accustomed to and therefore relatively unalarmed by these separations (Clarke-Stewart, 1989).

The California Attachment Procedure (CAP) is a new lab-based method for assessing toddlers' attachment security. It was developed to overcome certain limitations inherent in the most widely used instrument for assessing attachment secu-

rity for children of this age. Unlike the SS, the CAP provides experiences that are equally likely to activate attachment behavior for all children regardless of their day care experience. It provides the opportunity to evaluate the organization of the child's attachment to the mother over a wider range of situations than the SS.

Two hypotheses guided this study. One, we expected a high degree of correspondence between the CAP classifications and the SS classifications in traditionally home-reared children. Such a result would indicate validity of the new measure. Two, we expected more secure attachment classifications for day care reared children in the CAP than in the SS. If - as we assume - the brief separations characteristic of the SS are not as likely to activate attachment behaviors in day care children because of their familiarity with such "stressors", the CAP classification could be a more accurate assessment of their true feelings of (in)security in relation to their mothers.

Method

Sample: Fifty-five children aged 15-20 months and their mothers, predominantly white (N=53) middle- to upper-middle income families. They were recruited by telephone from a pool of research volunteers, in area day care centers, and from hospital birth records. Approximately half (N=28) of the children experienced routine separations from their mothers at least three times per week for an average of 32 hours (R = 10-50 hours) while their mothers were at work or school.

Measures

Children's attachment security was independently assessed using two different measures: the SS and the CAP (age at SS: $M = 17.0$ months; age at CAP: $M = 18.0$ months). In order to preserve the unfamiliarity of the SS, this assessment always preceded the CAP assessment, with at least 3 weeks separating the two visits ($M = 39$ days).

All data were independently coded by researchers who were blind to child care status, study hypotheses, or both. The same researcher never coded two different pieces of attachment behavior data (i.e., CAP and SS). SS videotapes were coded by certified SS coders.

The California Attachment Procedure

The CAP presents a series of episodes through which the quality of the child-mother attachment relationship is assessed. Each episode in the CAP is followed by a brief (2-3 minutes) period of recovery in which the mother and child return to playing with toys. The entire procedure lasts approximately one-half hour. We believe that the CAP generates a more complete picture of the organization of the child's attachment to the mother because it provides several opportunities to judge children's attachment classification across different situations. After approximately one-half hour of mother-child interaction in the unfamiliar laboratory playroom, the CAP episodes began as follows:

Noisy hidden toy: A noisy remote-controlled toy is activated. The toy is in a box under a table. The mother encourages the child to go to the box. Two issues are

considered: first, how (if at all) does the child use the mother as a source of comfort in the face of uncertainty and/or fear, and second, how much confidence does the child have in the mother.

Costumed adult stranger: A research assistant enters the room dressed in a wizard costume. She sits quietly for a minute, plays alone for a minute, then invites the child to play with her. The child's reaction to an unfamiliar adult and use of the mother in this uncertain situation are examined. The episode is similar to the SS in that an unfamiliar adult tries to interact with the child, but by having the adult dressed in costume we make the unfamiliarity salient and therefore more universal for all children independent of their day care history.

Toy robot: A noisy moving toy robot is sent into the room. This episode provides a third opportunity to see the way the child uses the mother in an uncertain situation.

Coding of attachment behavior in the CAP: draws heavily from the Ainsworth et al (1987) coding system (proximity- and contact-seeking, contact maintaining, avoidance and resistance). We also used Waters' Attachment Q-sort items with security criterion scores 7.0 and higher (indicating secure attachment behaviors) or 3.0 and lower (indicating insecure behavior). Based on these two sources we created profiles of what children in the eight different Ainsworth A-B-C attachment categories should look like in the CAP. An overall A-B-C and subcategory classification was made for each child based on a judgment of the predominant organization of the child's attachment behavior toward the mother in the CAP episodes.

Results

Sixty-nine percent of the subjects were classified as exactly the same in both the CAP and the SS. Children were more likely to be classified as secure in the CAP than in the SS. This rate of 85% security in the CAP (vs. 69% in the SS) may more accurately reflect the true rate of secure attachments in normal infants from well-functioning middle-class families. The SS data would not reflect this higher rate of security if children in day care were incorrectly classified as insecure.

Distribution of security scores by child-care status. Secure (B) classification: a classification of B (securely attached) was equally likely for children with and without non-maternal day care experience. Resistant (C) classification: a classification of C (resistant attachment) was equally likely for children with or without non-maternal day care experience. Avoidant (A) classification: there was a higher proportion of avoidant children in the day care group than in the non-day care group in the SS (21% vs. 15%). In the CAP, there were equal proportions of avoidant children in the day care and non-day care groups.

SS and CAP classifications for children in the day care group were substantially less likely to be exact matches than the scores of children in the non-day care group. Day care children were more likely than non-day care children to be classified as more secure in the CAP.

The low number of 'exact matches' for the day care group (compared with the non-day care group) can be attributed to the fact that more day care children than non-day care children were rated as more secure in the CAP. Taken together,

the findings suggest that some day care children are indeed incorrectly classified in the SS as insecure, resulting in an artificial inflation of the percentage of day care infants classified as insecure when the SS is used to assess attachment security.

Conclusions

The data support the hypothesis that the SS misclassifies some of the children of working mothers as insecure (especially avoidant) when in fact they are secure. We suggest that this misclassification arises from the fact that children with extensive day care experience are accustomed to and therefore relatively less alarmed by separations from the mother similar to those in the SS.

The California Attachment Procedure is a suitable alternative to the SS for assessing the attachment styles of these children. The broader range of situations and the universality of the fear- or uncertainty-provoking events in the CAP provide an opportunity to get a more complete picture of the organization of the child's attachment toward the mother.

References

- Belsky, J.(1988). The 'effects' of infant day care reconsidered. *Early Childhood Research Quarterly*, 3, 235-272.
- Clarke-Stewart, K.A. (1989). Infant day care: Maligned or malignant? *American Psychologist*, 44, 266-273.

