

Human Development 1990;33:73-80

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0018-716X/90/0331-0073\$2.75/0

## Commentary

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The evidence reviewed in these papers demonstrates what observers of infants in diverse settings, including Mary D.S. Ainsworth, have long known – that cultural variations in infant environments produce divergent patterns of attachment behavior. This finding casts serious doubt on claims to species universality and optimality of the developmental patterns observed among middle-class Americans through the ‘Strange Situation’. It suggests that the ‘Strange Situation’, though effective in revealing similarities and differences across populations, is attuned to conditions prevailing among middle-class Americans and cannot be used intelligibly in other groups without naturalistic assessments of their prevailing conditions of infant care.

In this commentary we consider how cultural factors influence attachment behavior and suggest that familiarity effects produced by infant care practices may account for cultural differences in response to the ‘Strange Situation’. First, however, we return to the origins of the ‘Strange Situation’ method in Ainsworth’s comparison of her Ganda and Baltimore observations.

### Cultural Origins of the ‘Strange Situation’

In the preface to their volume on the ‘Strange Situation’, Ainsworth et al. [1978] provide the following history of its invention:

The strange situation was originally devised in 1964 for use in conjunction with an intensive longitudinal study of the development of infant-mother attachment throughout the first year of life, a naturalistic study in which infants were observed in their familiar home environments. This study of 26 mother-infant pairs living in the Baltimore area had been preceded by a comparable but less intensive study of 28 dyads living in country villages in Uganda (Ainsworth, 1967). Despite many similarities between the two samples in regard to attachment behavior, three behavioral patterns that had been highlighted in the Ganda study emerged less strikingly in the American study: the use of the mother as a secure base from which to explore; distress in brief, everyday separations from the mother; and fear when encountering a stranger. Perhaps if stronger instigation were provided, the American babies might be induced to behave in much the same ways as had the Ganda infants. In the belief that these behaviors might be evoked more incisively in an unfamiliar situation than in the familiar home environment, the strange situation was devised [p. viii].

This statement leaves no doubt that the 'Strange Situation' was invented as a *culture-specific* laboratory procedure designed to elicit from the Baltimore babies responses that had already been observed more intensely and frequently ('strikingly') without an elicitation procedure among the Ganda. Presumably if Ainsworth's next research after Uganda had been in the Japanese population described by Takahashi in this issue rather than an American one, the elicitation procedure would have been different – conducted in the home, perhaps, rather than in an unfamiliar setting. This likelihood is confirmed in the following passage:

(We) acknowledge that the strange-situation procedure might not approximate common experiences of infants who are reared differently, whether in other societies or by atypical parents in our own society; and we cast no aspersions by our term 'atypical', for these may be highly sensitive parents who avoid all unnecessary occasions for separation. It seems entirely likely that Ainsworth's (1967) Ganda infants and Konner's (1972) Bushman babies could not have tolerated the strange situation. Recently Takahashi (personal communication) informed us that the Japanese mothers of her sample would not consent to leaving their babies alone in an unfamiliar situation ... For all but a few infants in our middle-class society, however, we are convinced that there is no uncommon stress implicit in the strange-situation procedure ... [p. xiv].

This passage suggests that the 'Strange Situation' is suitable to assess attachment in 'our middle-class society' because it approximates (or, more accurately, deviates moderately from) the 'common experiences' of infants in that society and would not be suitable in societies providing different common experiences for their infants. Thus, we are told, at the beginning of its book-length introduction to the scientific community, that the 'Strange Situation' was not necessary to

observe attachment behavior among the Ganda and that the procedure would probably be intolerable for the Ganda, the Kalahari Bushmen, and the Japanese. (As the Takahashi article in this issue shows, it turned out to be tolerable, though just barely, for the Japanese infants and their mothers.) These statements by Ainsworth et al. [1978] clearly anticipate the problems of using the 'Strange Situation' in diverse cultures.

### Ainsworth's Interpretations of Cross-Cultural Data

In interpreting cross-cultural evidence a decade ago, before the 'Strange Situation' had been applied outside of the USA, Ainsworth [1977] used her naturalistic observations of the Uganda and Baltimore children, as well as Konner's [1972] observations of Kalahari (!Kung or Zhun/Twa) Bushmen. Her analysis is instructive, not only because it is directly relevant to the reason the 'Strange Situation' was invented – that the Baltimore children did not spontaneously show certain attachment behaviors as intensely and frequently as the Ganda had – but also because Ainsworth explained these differences in terms of infant expectations acquired from consistently different experiences, thus illustrating how culture-specific patterns of infant care might influence attachment. Furthermore, Ainsworth did not claim that the American mothers or infants represented an optimal pattern of attachment in comparison with the Ganda.

Ainsworth [1977] reported that intense separation protest (even before weaning) was more frequent among the Ganda babies than in those of Baltimore:

(This) is attributable to two major factors. First, the American babies had more experience with frequent maternal comings and goings than had Ganda infants. During our visits, American mothers left the room 3.4 times per hour, on the average, whereas Ganda mothers were unlikely to leave as often as once per hour. The typical mother in the American sample left her baby for fairly long periods in one place, often enough confined, and came in and out frequently in the course of her household activities. In contrast, the Ganda mother, when she left her baby to work in the garden, left him for a period of three or four hours or more. When she was at home she tended either to stay put or to take the baby with her. Thus the securely-attached American infant presumably developed expectations that when his mother left him, say, to go to the kitchen or even upstairs, she would return soon, and perhaps the baby learned also that she would be readily summoned if he needed her. Secure in such expectations, her many brief departures in her familiar environment of the home came to activate protest infrequently. In contrast, even the securely-attached Ganda infant built up expectations that his mother's departure signified a longer absence during which his mother was inaccessible to his signals, so that even when left in the familiar home environment with familiar caregivers her departure tended to activate protest, unless the baby were able to follow his mother when she left. In short, it seems that separation protest is much influenced by an infant's confidence in his mother's accessibility, and the expectations that constitute that confidence are influenced by real-life experiences [p. 141f.].

By the same reasoning, the strong separation protest elicited from Japanese babies left alone in the 'Strange Situation', as described by Takahashi in this issue, might be attributed to the fact that their mothers reported leaving the infant with another person an average of only 2.2 times in the past month, so that there had been no opportunity to develop through repeated experience the confidence that mother would return.

Ainsworth reported that the Ganda babies 9-12 months old, like the !Kung observed by Konner [1972], showed much

more fear of strangers than their Baltimore counterparts. She concluded:

To me, the most reasonable explanation is that the two samples differed in the extent of their general experience with strangers and that infants living in Ganda villages fear strangers because they have little experience with any people except their own families, immediate neighbors and visiting relatives ... The babies in the American sample, on the other hand, were early taken, and relatively frequently, to supermarkets and other places where they encountered unfamiliar people in great variety, under circumstances of proximity and often interaction and even contact [Ainsworth, 1977, p. 142].

Here again, an explanation in terms of prior experience is offered for cross-cultural difference in a response (reaction to a stranger) that, like reaction to separation from mother, is part of the 'Strange Situation'.

Ainsworth [1977] also responded, in the same article, to Konner's [1972] report that infant-mother attachment among the !Kung Bushmen involved breast-feeding much more than the Bowlby-Ainsworth model allowed. She showed that this was also true of those Ganda children who had been breast-fed on demand and whose weaning was deferred until after attachment to the mother was established: 'Under these circumstances, feeding behavior is so enmeshed in the organization of the attachment relationship that weaning may threaten the whole relationship' [Ainsworth, 1977, p. 128]. Without going into this point in detail, as she did, we want to emphasize that, though the independence of attachment from feeding is central to the Bowlby-Ainsworth model and distinguishes it from orthodox Freudian and S-R secondary drive models, Ainsworth here elaborated the environmental conditions under which breast-feeding could become an

important part of the child's 'working model' of attachment to the mother – conditions found widely in African and many other non-Western societies. This shows that in Ainsworth's view as presented in 1977, the meaning of attachment to the child and its behavioral manifestations were culturally variable.

Finally, Ainsworth [1977] found more optimal characteristics among the Ganda mothers: '(My) impression is that more of them than of the Baltimore mothers were sensitive to infant signals and communications, and fewer of them insensitive, rejecting, inaccessible or interfering' [p. 126]. This might lead one to expect that the Ganda infants would more frequently be securely attached, but without comparable assessment through the 'Strange Situation', a direct comparison was not possible. [In the original Uganda report, Ainsworth, 1967, p. 388, classified 57% of the Ganda sample as secure-attached, 25% as insecure-attached and 18% as 'non-attached'.] On the whole, she treated the two samples as equivalent in security of attachment while recognizing a greater frequency of separation protest and intensity of fear response to strangers among the Ganda babies.

In this cross-cultural comparison of 1977, then, Ainsworth invoked culture-specific patterns of child care that condition the infant's expectancies to account for group differences in fear of strangers and separation protest, while claiming that the group in which infants were more fearful and less tolerant of maternal separation contained the more sensitive mothers. The implication is that security of attachment is independent of fear of strangers and separation protest and that optimal mothering can occur in a context that fosters high levels of these reac-

tions. This conclusion is of course consistent with Ainsworth's decision to use reunion behaviors rather than reactions to the stranger or to the mother's departure in the 'Strange Situation' as criterial for attachment classification.

But Takahashi's findings presented in this issue suggest that 'familiarity effects', i.e., whether and to what degree the baby is used to being outside the home, meeting strangers, being separated from the mother, directly influence attachment classifications when the variations are as wide as between the Japan and Baltimore samples. Children rarely separated from their mothers under the normal conditions of their lives can be so stressed by the 'Strange Situation' that they are difficult for mothers to console on reunion and are classified as type C. Children who have rarely been away from home can be classified as type C in the laboratory and type B at home. It is untenable to assume that the naturalistically observed conditions that foster fear of strangers and separation protest have no bearing on security of attachment. Ainsworth's [1977] own analysis of how breast-feeding influences the attachment relationship among the Ganda – when demand feeding gives the baby control over the mother's feeding behaviors and when weaning occurs after 8 or 9 months – suggests that infants become attached not only to specific persons but to specific conditions that have given them comfort and that arouse anxiety when they are withdrawn. The meaning of the mother to the baby is partly provided by such conditions. It is only possible to ignore these aspects of mother-infant attachment if one focuses exclusively on the reunion behaviors that are criterial for attachment classification and does not take into account the natural contexts that

condition the child's responses to the 'Strange Situation'.

Ainsworth's 1977 interpretations of cross-cultural differences are important at the present time because they show how much sense can be made of response patterns in the 'Strange Situation' if one knows through naturalistic observation the routine interpersonal environments of infant care that give the test stimuli of the laboratory procedure their meanings to the infant. If we could bring to bear on the Bielefeld attachment data, for example, the kind of detailed information on frequency and conditions of maternal departure from the home (and separation within the home) that Ainsworth brought to bear in comparing her Ganda and Baltimore samples, and which Takahashi provides in brief for her Japanese sample, then it would be possible to test the hypothesis that the high proportion of type A children in the Bielefeld sample is due to their prior experience with maternal separation.

### The Effects of Prior Experience

The ways in which aspects of prior experience that vary across cultures might affect infant behavior in the 'Strange Situation' can be analyzed by considering individually the component situations confronting the 1-year-old child and mother in that procedure, e.g., playing in an unfamiliar room, physical separation between mother and child in the same room, meeting a stranger, mother-child separation, and reunion with mother. Each of these situations can be so familiar to the child as to elicit overlearned, automatized responses, or they can be so unfamiliar as to pose an entirely novel task, possibly inducing anxiety and distress.

In addition to the familiarity-novelty dimension of the situation and the task it represents, there are the specific qualitative expectations it arouses based on its similarities to conditions the infant has experienced in the past. As Lamb and Malkin [1986] have shown, infants have well developed expectations of specific caregivers, and of the conditions consistently associated with being comforted when they are distressed, by the time they are 5 months old. When they are assessed in the 'Strange Situation' at 12 months, their experience-based expectations in social situations have become more complex and differentiated.

(1) *Playing in an unfamiliar room.* The degree to which the physical setting in the 'Strange Situation' is experienced as strange, i.e., as a departure from the infant's normal surroundings, may depend not only on actual similarities and differences but on how much prior experience the child has had in being moved from one place to another. The American child at 1 year is assumed to have had a fair amount of such experience, while at the same time being aware that this is a new place. The Japanese baby, however, may have had so little experience in being out of the home that the laboratory setting may seem a striking, potentially distressing, departure from the normal, eliciting in the infant the expectation of being comforted by mother. We propose that for the American child, the task of becoming comfortable in new surroundings like the room used in the 'Strange Situation' is one that has been mastered earlier and for which the child is prepared; the same could not be said for the Japanese child.

(2) *Physical separation between mother and child.* Putting baby on the floor with toys and expecting play while mother sits watch-

ing at a distance seems perfectly normal in an American context; it occurs routinely at home and when visiting friends and kin. In some African societies, like the Gusii of Kenya [LeVine et al., 1989] babies are still being held about 50% of the daytime at 12 months of age, are rarely in their mother's presence without being held by her or someone else, and are given no toys. Thus, this situation is one for which prior experience has prepared American children but not their Gusii counterparts.

(3) *Meeting a stranger.* As Ainsworth [1977] pointed out, infants among the Ganda and the !Kung Bushmen have social lives confined to a small circle of intimates and rarely encounter a new face, while American babies are taken to public places like supermarkets, where encounters with strangers are abundant. Their divergent patterns of social interaction prepare American children but not the Ganda and !Kung Bushmen for such encounters, or perhaps for mastering the fear that meeting a stranger tends to arouse.

(4) *Separation from mother.* Although the observational data are not complete, it seems that three patterns of prior experience can be identified in the Baltimore, Ganda and Japanese studies discussed above: (a) an American one, in which mothers at home leave the child's view frequently (3.4 times/h) while remaining accessible to audible signals, but in which they occasionally (at an unspecified frequency but often enough for it not to seem unusual) leave the baby with another person at home or somewhere else; (b) a Ganda one, in which mothers leave the baby's sight rarely when at home (less than once an hour) but leave once a day to spend 3 h or more cultivating their gardens while the baby is taken care of by a

child or grandmother; and (c) a Japanese one, in which babies are rarely left by mother (2.2 times a month), and then only with father or grandmother. These are, as Ainsworth and Takahashi have suggested, different levels of preparation for the brief separations of the 'Strange Situation', though the lack of more specified observational data makes it difficult to say more. Furthermore, a recent study by Gewirtz and Noguera [1988] shows that the kind of protest the infant exhibits upon separation is easily conditioned to be more or less extreme depending on maternal reactions.

(5) *Reunion with mother.* If separations vary in frequency and type by cultural group, reunions do too. It would be interesting to know the prior experience with reunion of children differing in culture. Apart from frequency and its effects on critical behavior for the types A, B and C attachment categories, it seems to us likely that mothers of different cultures train their babies in differing reunion routines – ranging from the excited greeting behavior of many middle-class Americans to quiet holding and breast-feeding in many African settings – that foster the development of varying meanings of the 'Strange Situation' reunions.

The preceding are five aspects of prior experience that vary by culture and might well affect infant responses to the 'Strange Situation'. Only systematic cross-cultural research into the relationships between routine patterns of interaction and infant responses in the 'Strange Situation' will specify to what extent the effects of prior experience account for the cultural variations in frequency of attachment classification found so far – a point made previously by Lamb et al. [1985], but worth repeating in the present context.

## Conclusions

We have too limited a body of naturalistic observations from diverse cultures to resolve all the problems of attachment that have been raised by the studies discussed in this issue, but it is clear that cultural aspects of attachment will have to receive more attention in the future than they have in the past. Attachment research operates with assumptions about the human species derived from a theoretical model rather than from empirical findings. Studies of maternal behavior in diverse human societies show a wider range of infant care and communication patterns than any developmental theory has anticipated [LeVine et al., 1988]. Mothers of different cultures vary not only in how much they value the attachment of infants and in what forms they think it should take, but also in the purposes they ascribe to infant care, and in their preferences for proximal or distal patterns of communication and for autonomy and social responsiveness in their children. These values, purposes and preferences – derived from their cultural traditions – give different directions to behavioral development in the first year of life as well as after, creating different contexts for the experience of social relationships. The mother-infant relationship is multidimensional; attachment research has left out much that is meaningful to mothers and infants alike in the pursuit of an instrument for diagnosing optimal and pathological patterns. But the cross-cultural evidence, by calling that instrument and its interpretations into question, will force a reexamination of the meanings of maternal care and early development in the human species.

From an anthropological point of view, the claims of universality and optimality for

the American middle-class attachment profile have been undermined by the 'Strange Situation' studies in Germany, Israel and Japan. The Bielefeld and kibbutz findings, in which the type B classification is not modal, are particularly damaging, for they put those who would defend the claims in the position of arguing that the majority of children there are at risk for psychopathology, while the majority of children in Sweden, Sapporo and the USA are not, or not to the same extent. We do not believe that such an argument will be empirically sustained. In our opinion, the current array of cross-cultural evidence indicates that attachment classifications based on the 'Strange Situation' are inadequate measures of what is optimal and suboptimal in emotional development, and that cultural differences in infant care create behavioral patterns that cannot (and should not) be reduced to a mental health/psychopathology dimension.

The challenge of the evidence from the samples mentioned is in no way reduced by the fact that 'cross-cultural' differences (i.e., between countries) account for less of the variance in attachment frequencies than 'intra-cultural' differences (within countries) [Van IJzendoorn and Kroonenberg, 1988], for the latter represent variations in infant care and development by region, locality, and social class (e.g., North vs. South Germany, Israeli kibbutz vs. city, low- vs. high-SES in the USA) that are as cultural as cross-national variations. While it might be possible to identify a core of attachment that is immune to cultural influence, as Main proposes in this issue, the hypothesis that cultural conditions of infant care account for observed differences in the 'Strange Situation' offers a more plausible explanation of the existing evidence. It would be unfortu-

nate if 'anomalous' findings from well-replicated studies in Europe, Israel, and Japan led investigators to embrace a more speculative conception of infant-mother attachment, rather than confront the experiential basis of responses to the 'Strange Situation'. We hope for a turn to naturalistic observations in differing cultures to illuminate how these responses arise.

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