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## Contributions of Research on Japanese Infants and Mothers to the Study of Attachment

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This paper discusses the contributions that have been made by research in Japan to theory and research on infant-mother attachment. It is proposed that the major contribution of research in Japan and other non-American cultures to the study of attachment has been to cause questioning of claims that the different patterns of attachment behavior observed in the Ainsworth Strange Situation represent either biologically or socially adaptive vs. maladaptive types. Potential research issues raised by Japanese research, including the influence of lack of separation from mother and proximal modes of contact on attachment are also discussed. Finally, the application of the attachment Q-sort methodology to cross-cultural research is considered.

Application of psychological theory and methods to cultures or subcultures outside of the Western, middle-class culture in which they are typically developed almost inevitably leads to the discovery and questioning of both explicit and implicit assumptions of the theory and research, the consideration of issues not previously deemed important, the development of new hypotheses, and the revision of methodology. Such was the case when researchers attempted to put Piagetian concepts to the test in various societies around the world (Laboratory of Comparative Development, 1983). In the past 10-15 years, Bowlby's (1969) theory of infant-mother attachment has come to dominate psychological thinking and research on infant socioemotional development, in conjunction with the development of the widely used Strange Situation procedure by Ainsworth and her colleagues (Ainsworth, Blehar, Waters, & Wall, 1978). In the past 5-8 years, an increasing number of non-American researchers, including a number in Japan, have begun to investigate attachment in their own societies within this framework, and many have used the Strange Situation procedure first developed and validated in the United States. As a consequence, a number of significant issues have been raised related to both the Strange Situation procedure and attachment theory as presented by Bowlby and Ainsworth.

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The present paper presents a personal perspective on the contributions made by research in Japan in particular to the study of mother-infant attachment, a perspective that stems from my own thinking and research on attachment in the United States and my involvement in research on emotional development as well as attachment in Japan — first as a consultant and junior collaborator and then for the past year as a visiting scholar at Hokkaido University in Sapporo. Japan has a unique place in cross-cultural research because it is one of the only fully industrialized nations with traditions that were entirely non-Western, at least, until the country was opened to Western influences little more than 100 years ago. With regard to attachment, it is a culture that highly values children and the mothering role, and encourages the development and maintenance of very close ties between mother and child throughout life (Lebra, 1976). Moreover, the research of Miyake and his colleagues in Sapporo (Miyake, Chen, & Campos, 1985; Tajima, this volume; Ujiie, this volume) represents one of the most programmatic examinations of the development and consequences of attachment outside of the U. S. (another being that of the Grossmanns in Germany: Grossmann, Grossmann, Huber, & Wartner, 1981; Grossmann, Grossmann, Spangler, Suess, & Unzner, 1985). In this paper, I do not attempt to review all of the work on attachment that has been done in Japan, but only to point out what I see as the significance of the more widely known work, much of which was discussed at a symposium on the measurement of attachment at the 1986 meetings of the Japanese Association for Educational Psychology (the major association for developmental psychologists). I also hope to point out a few of the areas in which research with Japanese populations in particular might inform the future study of attachment.

#### Interpretations of attachment patterns in terms of biological adaptiveness

The most important contribution made by research on attachment in Japan, in conjunction with research in other cultures outside of the United States, has been the exposing and questioning of assumptions that the Strange Situation A, B, C classifications represent universal, biologically based adaptive vs. maladaptive patterns of behavior. The social adaptiveness of the B pattern of attachment behavior in terms of predicting desirable behaviors in early childhood has been explicitly investigated in American samples (e. g., Arend, Gove, & Sroufe, 1979; Matas, Arend, & Sroufe, 1978; Sroufe, Fox, & Pancake, 1983), but there has been apparent in much discussion of individual differences in attachment a more implicit assumption that this pattern also represents adaptiveness in the biological sense. This belief is based on two essential confusions— confusion between the concept of adaptation as it is applied to evolution and to individual development, and confusion between the construct of secure attachment and the imperfect measurement of that construct by the Strange Situation classifications.

Bowlby's theory of attachment (Bowlby, 1969), upon which the Strange Situation is based, emphasizes the hypothesized evolutionary adaptive value of attachment behavior in protecting the human infant from danger. However, in linking her study of individual differences to Bowlby's theory, Ainsworth sometimes implied that individual, social adaptation equalled biological adaptation. For instance, in 1973 (p. 9) Ainsworth wrote that the ethological view of attachment "assumes that the greater the departure (of the present environment, including maternal behavior) from the environment of *evolutionary*

*adaptedness*. . . The more difficult it will be to achieve a *socially desirable* outcome and the more likely it is that *nonadaptive* anomalies will result " (emphasis mine). Since mothers are supposed to have evolved to be sensitive to their infant's signalling, more sensitive mothers will have better-adapted infants according to Ainsworth. However, biological and social adaptation cannot be equated—biological adaptation is determined only by reproductive success (inclusive fitness), and social adaptation is determined by social criteria. The biological adaptiveness of a particular form of behavior during the course of human evolution cannot be assessed by observing individual behavior presently, while given consensus about what represents socially adaptive outcomes, social adaptiveness can be. Moreover, modern ethologists such as Hinde (1982) argue that it is unlikely natural selection operated to produce a single "best" pattern of attachment behavior or mothering behavior, but rather to produce a flexible range of behaviors that would vary with environmental circumstances (see Lamb, Thompson, Gardner, & Charnov, 1985 for a more thorough presentation of similar arguments).

Coupled with the tendency of many researchers discussing the Strange Situation, including a number of critics of the procedure, to equate the A, B, C classifications with the underlying construct of security they are supposed to be assessing, as if there were no possibility of slippage in measurement, it was easy to assume that the supposedly securely attached B group infants and their mothers represented the most biologically adaptive type, and the A- and C-groups represented maladaptive types, and this was often implied in discussions relating to the Strange Situation. Many psychologists, not necessarily familiar with arguments based on ethology and evolutionary biology, accepted this assumption without much thought until Miyake and his colleagues (Miyake, 1986; Miyake, Chen, & Campos, 1985; Takahashi, 1986a) reported that two different samples of Japanese infants behave differently from the expected pattern and German and Israeli teams reported that North German babies and Kibbutz-reared infants also behave differently from both the expected pattern and the Japanese pattern (Grossmann, Grossmann, Huber & Wartner, 1981; Sagi, Lamb, Lewkowicz, Shoham, Dvir, & Estes, 1985). Are the 30% of Japanese infants classified as C babies maladaptively attached to their mothers in the biological sense? Are the 49% of North German infants classified as A exhibiting biologically maladaptive behavior? It seems not only highly unlikely but also ethnocentric to assume the modal pattern of behavior seen in the modern U. S. comes closest to the biological ideal, yet when only individual differences in American infants were considered, few people carefully considered the claims made about the adaptiveness of the Strange Situation classifications. In considering them, the relationship between Bowlby's theory of attachment as a species-specific, biologically based behavioral system and the assessment of that system in the Strange Situation has been clarified, a valuable albeit partially indirect contribution of the data from Japan.

#### Interpretation of attachment patterns in terms of social adaptiveness

The Japanese data, along with those from other nations, has also called into question the assertion that B-type attachment patterns are most adaptive in terms of an individual's social development, while C-type or A-type patterns are maladaptive. This assertion has been made on the basis of empirical data on the predictive validity of the

classifications for later behavior, and in fact in American samples the predictive validity is the most impressive aspect of research using the Strange Situation (e. g., Arend, Gove, & Sroufe, 1979; Matas, Arend, & Sroufe, 1978; Sroufe, Fox, & Pancake, 1983). Yet adaptation is a relative concept, so that what is judged as adaptive in one setting or in one society may not be so in another. Again, until we had data from outside the United States, many psychologists, accepting the equation of B classification with security and A or C classification with insecurity, equated non-B status with maladaptation. While most American psychologists would probably agree that the differences in preschool behavior reported between American B and non-B children imply those classified as B's in infancy are better adapted to the demands for active peer interactions and independent coping styles that American society seems to demand, we do not know if the behavior of B infants in other cultures, such as Japan, predict better adaptation to the demands of that society. To know this, we need data on the predictive validity of the classifications in non-middle-class American culture in relation to the values of that culture — data that are only slowly beginning to become available (Miyake, Chen, Ujiie, Tajima, Satoh, & Takahashi, 1983; Nakano, this volume; Tajima, 1984, this volume; Ujiie, this volume).

One prediction from attachment theory, especially as amplified by Sroufe (1979), might be that secure infants (independent of whether they fall into the Strange Situation B classification) will adapt more readily to the demands of their own society than insecurely attached children, regardless of the specific type of demands made. On the other hand, if the same pattern of infant attachment predicts a consistent behavioral pattern in preschoolers regardless of culture, and if in one culture that behavioral pattern is the normative, desired one and in another it is nonnormative and undesired, children who had similar-quality attachment to their mothers as infants will be seen as well-adapted in one culture and maladapted in the other. For example, if it is true that Japanese mothers encourage their children to depend on them for help and emotional support in a wide range of situations throughout childhood (Vogel & Vogel, 1961), and if B-pattern attachment behavior in infancy consistently predicts self-reliant 4-to 5-year olds, and C-pattern attachment behavior consistently predicts heavy reliance on the mother or other adults (Sroufe et al., 1983), it may be that preschoolers who showed C-pattern attachments to their mothers as infants are seen as better-adapted than possibly "too-independent" Bs. This is undoubtedly not the best example of differences in values between Japanese and American culture that relate to attachment, but it illustrates the point. One of the future contributions that attachment studies in Japan and in other cultures can make is that it can provide data which can distinguish these two types of hypotheses relating attachment to later behavioral outcomes.

#### Normative data and the universality of attachment

By casting doubt on some interpretations of individual differences in the Strange Situation, has the recent data from Japan and other countries outside of the U. S. produced evidence seriously challenging the theory of attachment that underlies the procedure? Although some of the assumptions linking the Strange Situation procedure with attachment theory have been shown to be questionable, the data that have been gathered to date lend support to Bowlby's ideas concerning the universality of the attachment behavior

system as a normative phenomenon and the kinds of behaviors most central to that system. When Japanese infants are stressed by the Strange Situation, they promptly seek proximity and physical contact with mother, and show strong distress upon separation and even stronger distress if left alone, just as Bowlby or Ainsworth would predict. Although many infants appear to be inhibited in exploration within the Strange Situation itself, the majority explore at least briefly away from the mother, apparently using her as their secure base (Ujiie & Miyake, 1985). In essence, even within the Strange Situation their attachment behavior is very similar to that of American infants, although they show more intense distress and seem quicker to seek proximity. It would be enlightening to observe infant exploration and use of the mother as a secure base in a setting outside of the home that is less stressful than the Strange Situation—for instance in a neighborhood park, where Anderson (1972) observed English toddlers and mothers more than 10 years ago. More normative data from cultures differing in infant care practices on the normative development of attachment are needed if we want to understand the universality vs. lability of this process.

#### Separation and physical proximity in relation to Japanese infant attachment

The studies to date on infant attachment in Japan have raised a number of other questions concerning the process of development of attachment that might be interesting issues for future research. For instance, the reported rarity of infant separation from mother is the most frequently discussed reason for the stronger negative reactions of Japanese infants in the Strange Situation and the resultant tendency for many babies to be classified as C and few as A (Miyake et al., 1985; Takahashi, 1986a; Ujiie 1986a, b); it has also been claimed to account in large part for the differences in distribution into the Strange Situation classifications between Miyake's Sapporo samples and a Tokyo sample observed by Durrett, Otaki, & Richards (1984) (Sroufe, 1985). Unfortunately, we do not have data that directly assess the contribution frequency of separation makes to either individual differences within Japan in reaction to the Strange Situation procedure or to accounting for the differences between Japanese infants and those from other societies. Moreover, we don't know if lack of separation from mother affects only assessment of attachment in the Strange Situation or influences the quality of the bond itself. Except for prolonged major separations, or everyday separation in day-care children, frequency of separations has more or less been dismissed as a factor influencing the quality of attachment. It is quite possible that within a broad range of relatively frequent, brief separations such as would be found in a study only of typical American mothers, separation experiences have little effect on the quality of attachment, but that the extreme case of virtually no separation—apparently the typical case in Japan—does. Direct comparison of groups within Japan on which reliable individual data on separation experiences have been collected could add much to our understanding of the kind of influence separation does or does not have on individual or group differences in attachment, by increasing the range of variation compared with that found in the typical U.S. sample.

Other reported differences in attachment behavior between Japanese and American infants raise potentially fruitful research questions that relate to attachment theory in general. Observers of Japanese mother-infant interaction (e.g., Caudill & Weinstein,

1969; Lebra, 1976; Miyake, Campos, Kagan, & Bradshaw, 1986) stress the apparent emphasis on close physical contact and proximal modes of interaction between Japanese mothers and infants, which is supposedly encouraged by Japanese mothers, and Ujiie & Miyake (1985) note greater proximity-seeking in Japanese infants early in the Strange Situation compared with American babies. If this tendency to seek physical contact is true across a variety of settings in Japanese infants, an interesting developmental question is by what means do mothers encourage or discourage proximity? With respect to individual differences in secure-base behavior and the concept of attachment specifically, is it possible that there are "proximal" attachment patterns and relatively more "distal" patterns, with Japanese infants falling predominantly into the proximal group? And do they function equivalently to support exploration under low stress and comfort infants under moderate stress, or do they represent functionally non-equivalent patterns that have different implications for later behavior and different meanings in terms of security? Although individual differences in distal vs. proximal interactive tendencies are inherent in the subgroup system within the Strange Situation—B1, B2 are more distal interacters, B3, B4 more proximal—we cannot assume that this is the best way to group subjects to answer these kinds of questions. Research exploring the relationship between attachment and social referencing—a distal form of communication that is theoretically related to the secure base concept—also suggests that individual differences on the dimension of distal vs. proximal communication exist, but their origin and meaning have not yet been thoroughly examined (Bradshaw, Goldsmith, & Campos, in press; Dickstein, Thompson, Estes, Malkin, & Lamb 1984).

#### General issues in attachment: Temperament and developmental change

Some other important issues have been raised by Japanese research on attachment that are less directly related to the study of Japanese mother-child attachment specifically, but that data from Japan could nonetheless help address. One is the extent and nature of temperamental contributions to individual differences in attachment, a topic that remains very controversial (Campos, Barrett, Goldsmith, Lamb, & Stenberg, 1983; Goldsmith, Bradshaw & Rieser-Danner, 1986; Sroufe, 1985). Miyake et al. (1985) found that the tendency to cry upon removal of a nipple during the newborn period was associated with later C classification in the Strange Situation, a finding consistent with some other data in the literature relating irritability and crying to C classification (see Goldsmith et al., 1986). They did not claim that temperamental differences between Japanese and American infants accounted for the greater proportion of C subjects in their sample relative to U.S. samples, because the necessary data for direct comparison were not gathered. At present, data on racial differences in temperamental characteristics are sometimes conflicting and deserve more careful study, in conjunction with observations of how differing maternal care practices may exaggerate, minimize or otherwise modify any existing differences in infant behavior. Only in that way can cross-cultural studies elucidate the interaction of maternal and child variables in the development of attachment.

Another general issue in attachment theory which has begun to be investigated in Japan is developmental change in attachment. This issue has been addressed both in terms of stability and change in attachment behaviors in a modified Strange Situation from

1 to 2 and 2 to 3 years (Hanta, 1982; 1986), and in terms of the extension of attachment to include first adults other than the mother and then peers (Takahashi, 1986b). These issues are significant ones but have been neglected for far too long — partly because the availability of the Strange Situation has focused so much attention on the 12–18 month age period to which it applies. Perhaps the work of these researchers, along with that of Bretherton (1985) and Main (Main, Kaplan, & Cassidy, 1985) among others will stimulate investigators on both sides of the Pacific to begin thinking seriously about developmental change in attachment behavior, which will of necessity include consideration of how changes in infants' cognitive, linguistic, socioemotional, and even motor skills should influence the internal organization and external manifestation of attachment behavior.

#### The attachment Q-sort in cross-cultural research

Most of the work on attachment in Japan, as in the United States, has until recently utilized the Strange Situation or modifications of that procedure, and as we have seen, serious questions about the appropriateness of that procedure for Japanese infants have been raised. Recently, a Q-sort method for assessing attachment has been developed by Waters & Deane (1985), and introduced to Japanese researchers (Kondo, 1986). This method holds some promise for avoiding many of the problems and limitations of the Strange Situation — it has applicability to a broader age range, it can be used in numerous settings varying in terms of stress, there is no need to subject infants to separation procedures, etc. However, as it is adopted for use in other cultures, it will be necessary to use caution and thoughtfulness in its application so that some of the problems that arose from the widespread usage of the Strange Situation are not repeated. With regard to cross-cultural research generally and research in Japan in particular, we cannot a priori accept the assertions that one sometimes hears that it will solve all problems concerning comparable assessment that plagued the Strange Situation. A Q-sort can only be as good as the items that it contains, and the items were selected based on both theory and research that were overwhelmingly Western in orientation; the meaning of some of the items in the Q-sort may differ in different cultures just as the meaning of the observed behavior in the Strange Situation seems to. Although such problems with a few items should not dramatically affect the overall sort, when scales based on smaller numbers of items are selected from the broader set the potential for cultural bias increases. Particular caution would seem to be warranted in the ready acceptance of the criterion sorts of concepts such as security, which have the same potential for bias as the item selection procedure. This is not to assert a priori that the measure will not prove successful in its claim for broad applicability — simply a plea for gathering the data needed to demonstrate the validity of the measure when it is applied outside of the population on which it was developed. Certainly, as a means of describing a fairly wide range of attachment-related behaviors for comparative purposes, it will be useful.

#### Concluding remarks

In conclusion, attachment theory and research can benefit greatly from the studies that have been conducted in Japan, along with those conducted in other cultures, if it

assimilates the lessons learned and pursues some of the issues that remained hidden when only American data were used as the empirical basis for hypothesis-generation. I hope that the data coming out of Japan help encourage researchers who are interested in attachment to think of methods and issues beyond those related to a single measurement procedure or a specific age group. I especially hope that researchers in Japan will think seriously about the unique ways in which research in Japan can contribute further to attachment theory, and help lead attachment research into a new era.

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