

## Examining the Strange-Situation Procedure With Japanese Mothers and 12-Month-Old Infants

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The strange-situation procedure was given to 60 pairs of Japanese mothers and infants, and their results were compared with those of Ainsworth. There were no significant differences in proportions of securely attached (68%) and insecurely attached (32%) infants between the countries. Degrees and patterns of interactive behaviors in each type were also similar. However, the Japanese insecure group consisted of only C types, and there were no A types. About half of the C-type infants behaved inconsistently: They behaved like B-type infants in Episodes 2-5 and like C-type ones thereafter. These findings were interpreted in terms of the excessive stress caused by the procedure as well as Japanese child-rearing customs fostering the attachment to the mother. Two strategies are proposed for getting richer information from the procedure in different cultures: multiple classification of varying stress levels and cultural examination of the diagnostic value of each behavior as a classificatory cue.

Researchers even outside the United States who are exploring the appropriate attachment measurements cannot ignore the strange-situation procedure, constructed by Ainsworth, Blehar, Waters, and Wall (1978). In fact the strange-situation procedure has often been used among other cultures, for example, in Europe (Grossmann, Grossmann, Huber, & Wartner, 1981; Lamb, Hwang, Frodi, & Frodi, 1982; Grossmann & Escher Graub, 1984; Ijzendoorn, Kroonenberg, Goossens, Swaan, & Tavecchio, 1984; Grossmann, Grossmann, Spangler, Suess, & Unzner, 1985) and in the Third World (Kermoian & Leiderman, 1982; Sagi, Lamb, Estes, Shoham, Lewkowicz, & Dvir, 1982; Sagi, 1984). In these studies some cultural variations were indicated in the distributions of attachment types, and some interpretations of them were offered. Though its applicability in cross-cultural comparison is still under discussion (e.g., Lamb, et al., 1984; Sroufe, 1985), the strange-situation procedure is supposed to measure successfully one of the most important functions of attachment relationships, that is, the effectiveness of the attachment figure as a "secure

base" for coping with stress. Moreover, the rationale of the procedure is well taken, that is, it deemphasizes the frequencies of discrete behaviors of attachment and concentrates on how infants cope by organizing all of the behaviors they already have.

In this study the strange-situation procedure was examined among Japanese mother-infant pairs, and their behaviors in the procedure were analyzed by comparing them with the data that had been reported in the book by Ainsworth et al. (1978). More specifically, this study investigated whether the Japanese results, distributions of attachment types, and patterns of interactive behaviors would be similar to those in the United States. It was the first study, as far as we know, that examined the reactions of Japanese subjects in the strange-situation procedure administered as prescribed. A few interim reports based on a subsample of the study ( $n = 29$ ) revealed that though the proportions of securely attached and insecurely attached infants were similar to those of the United States, the insecurely attached group consisted only of C-type babies (Miyake, Chen, Ujiie, Satoh, & Takahashi, 1982; Takahashi & Miyake, 1984; Miyake, Chen, & Campos, 1985). This article is the complete report of the total sample of the study ( $n = 60$ ), of which the sample size was large enough to make generalizations. Furthermore, we shall use the findings to discuss whether the original measurement is valid for comparison between Japan and the United States without any modifications and also whether the original procedure is effective to describe the individual differences in attachment among Japanese subjects.

Suppose we found differences between the United States and Japan. We could interpret them in three different ways: First, prior experiences of mother-infant interactions in each country have fostered different qualities of attachment and the results reflect these qualities. Second, the ethnic difference in temperamental characteristics between the countries may account for the differences. If Asian babies are more inhibited (fearful) than their Caucasian counterparts, as suggested by Kagan et al. (1978), we can expect Japanese babies to be affected by the stress in the original procedure and pushed to behave insecurely. Finally, the

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This research was a part of the project directed by Kazuo Miyake and supported by Grants 803173 and 813083 from the Toyota Foundation and a grant from the Japan Society for the Promotion of Science facilitating cross-national exchange between Japan and the United States. Further support was provided by the Ministry of Education, Science and Culture of the Government of Japan, and by the Japanese Institute of Child Study.

The author is especially indebted to Professor Giyoo Hatano for his extensive comments and constructive suggestions. I am also grateful to Professor Kazuo Miyake for his support of this project and Professor Joseph Campos and anonymous reviewers of the journal for their valuable comments on the earlier version of this article. Helpful suggestions regarding the strange-situation procedure from L. Alan Sroufe and Mary Main are gratefully acknowledged. I thank Nobumoto Tajima, Kimiharu Satoh, Tatsuo Ujiie, Shing-jen Chen, Shigeru Nakano, Etsuko Minamide, and Aoi Noda for data collection, and Mie Nagano for data analyses.

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culture-boundedness of the procedure itself may have caused the differences. If so, we should interpret the observed differences with deliberation, and we should also think of some amendments to the procedure to use in countries other than the United States.

Though it is plausible that all three factors will influence the differences confluent, in the present article we will be mostly concerned with the third variable. As Cole and Scribner (1974) have pointed out, we must give careful "ethnographic" examinations to any measurement that was developed in a foreign country. It is often true that an operationally equated procedure doesn't guarantee cross-cultural comparability and/or applicability to foreign cultures.

When we apply the strange-situation procedure to Japanese mothers and infants we can expect to find a culture-boundedness that will affect the procedure and its results in a number of ways. First, the level of stress in the procedure will almost certainly exceed the appropriate level for Japanese infants, and also for mothers, and the results of the procedure must be distorted more or less by this excess. Because Ainsworth and her colleagues hypothesized that the secure-base function of attachment is best aroused when the infant is in mild stress, in the procedure, considering the customs of child-rearing in American middle class families, they used three kinds of "strangeness" with their subjects: an unfamiliar laboratory, an unfamiliar adult, and being left alone. In that culture, according to Ainsworth et al. (1978), a mother will not hesitate to take her baby into unfamiliar environments and may leave her baby for a few minutes either with a stranger or alone. However, the rearing of Japanese infants, at least those reared by full-time mothers in middle-class families, has been governed by different customs: As the traditional Japanese ideas have insisted on the importance of deep emotional relations between mother and child in earlier years for healthy development in future life (Wagatsuma & Hara, 1974), mothers of young children are pushed to involve themselves in the traditional mother's role. Young mothers, although more or less frustrated by the traditional role of the mother, state that they prefer not to take outside jobs because the healthy development of their young children comes first, rather than their own individual pursuits (Hatano et al., 1971). Actually, it is seldom that mothers of young children go out leaving the child even with the father and/or grandmother, not to speak of leaving her or him alone (Takahashi, 1982). Therefore, the strangeness, especially that of "infant alone," must arouse much more stress among Japanese infants than among their American counterparts. And if the stress of the experimental procedure is extremely strong, the infants will direct attachment behaviors even toward a person to whom they ordinarily wouldn't attach, or they cannot afford to display avoidant behaviors. Second, we suspect that the intentions or meanings of a given behavior observed in the procedure could not be interpreted as equivalent across the cultures. More specifically, as the Japanese have long had a permissive culture characterized by using proximal behaviors in interactions between the mother and her infant/young child (Befu, 1971; Caudill & Weinstein, 1969), both mothers and children will use proximal modes of interaction readily and frequently. Consequently, psychological meanings of proximal behaviors in Japan should not always be taken at face value. By the same token, avoidant and also aggressive resistant behaviors among Japanese children toward the mother should be taken more seriously be-

cause children dare by showing those negative behaviors to the mother to go against the Japanese culture, which encourages harmonious, mild, and "sweet" interactions between people (Weisz, Rothbaum, & Blackburn, 1984).

Thus we are sure that these analyses of the strange-situation procedure in the Japanese society, a non-Western yet highly modernized one, will advance the understanding of the nature of the procedure and also suggest, even for researchers outside Japan, some new strategies for getting richer information from the procedure.

## Method

### *Procedure*

The original strange-situation procedure was used in the laboratory. However, we specified or modified the following three points in the original procedure: (a) Episodes 4, 6, and 7 were curtailed if distress on separation lasted the 2-min maximum (in the case of Episode 6, mean duration was 110 s, with range 50–120 s).<sup>1</sup> (b) Episode 6 (infant-alone situation) was skipped if the infant strongly resisted the mother's withdrawal and the mother was reluctant to leave the room even after 3 extra min in Episode 5. For this reason, six mother-infant pairs skipped Episode 6. (c) To make the infant's intended response clearer when the mother returned in Episode 8, we asked for the mothers to begin to talk by saying, "Come here," as suggested by Sroufe,<sup>2</sup> instead of "talking for a moment."

Prior to the procedure, the mother was given instructions about the sequence of the procedure with the aid of a written scenario. The procedure was recorded by three video cameras.

Supplementary data were collected through interviewing the mother about both family and nonfamily caregivers and about attachment figures in daily life situations. The interview was aimed at ascertaining that the mother was the salient attachment figure by asking about eight kinds of daily situations in which attachment behaviors would be shown by her infant (e.g., With whom would your baby want to play? By whom would your baby want to be fed? By whom would your baby be soothed easily?).

### *Stranger*

Two unmarried senior female students majoring in psychology alternately took the role of stranger in each of the two cohorts of study.

### *Subjects*

Subjects were 60 pairs of 12-month-old (range 11:17–13:11) first-born infants (31 boys and 29 girls) and their mothers, participating in two cohorts of longitudinal study.<sup>3</sup> They were from intact and predominantly middle-class families (each parent had at least a high school education) residing in an urban area in the northern part of Japan. The mothers were full-time and primary caregivers in nuclear families. According to interviews with the mothers, during the preceding month the infants had been left with another adult (father or grandmother) a mean of 2.2 times, and no infants were cared for by anyone not in the family. Through the

<sup>1</sup> As the original study (Ainsworth et al., 1978) didn't clearly describe when the episodes of distress were curtailed, we set the maximum duration as 2 min. Thus, the durations of distress in this study were longer than in most current studies in the United States.

<sup>2</sup> By personal communication.

<sup>3</sup> Miyake, Chen, and Campos (1985) reported about half of the subjects (Cohort 1). In their article they analyzed the relations between the Ainsworth classifications and both the infant's temperamental characteristics and the prior interactions with the mother.

interviews, it was confirmed that all infants most often went to their mothers for physical contact, help, and attention. In other words, all of the infants selected their mothers as the salient attachment figure.<sup>4</sup>

### Data Analyses

The following three kinds of analyses were run for the videotape recordings: (a) the conventional analyses: A, B, or C classification and five interactive behavior ratings (Proximity/contact seeking; Contact maintaining; Distance interaction; Resistance; Avoidance) developed in the original study; (b) the additional analyses: the double A, B, or C classification, that is, up to Episode 5 and up to Episode 8 classifications, which were developed for this study to refine our findings among Japanese subjects; and (c) the counting of the frequencies of behaviors of both mothers and infants during the procedure to compare with the American results reported in the original study.

In the conventional analysis, first the video materials were classified by the author into A, B, or C types and also into subtypes, using the original manual and also some suggestions by Sroufe and Main, who viewed some of the videotapes. Next, the videotapes were rated on the above scales of five interactive behaviors toward the mother.

In the additional analysis, the videotapes of Episodes 2 through 5 were classified into the conventional types including subtypes. Because we had predicted that the stress aroused in Episode 6 (infant-alone situation) would be beyond the moderate level for Japanese subjects, we carried out a double classification of the video tapes; that is, we made distinct, separate classifications of "up to Episode 5" and "up to Episode 8." This "up to Episode 5" classification was also made by the author, without knowledge of classifications of "up to Episode 8," 3 months (in the case of Cohort 2) and 2 years (Cohort 1) after the "up to Episode 8" classifications.

The frequencies of behaviors of mothers and infants in the procedure were counted from the videotapes to compare with the American data, which were cited in the original Ainsworth study (Ainsworth et al., 1978).

The agreements on 29 videotapes of Cohort 1 between the author and one trained judge, who had worked with the procedure but had not participated in the present study, were calculated. First the judge classified the video tapes of Episodes 2-5, then she reviewed the tapes of up to Episode 8 and classified them without referring to her first classifications, and finally she rated subjects on the five interactive behavior scales without referring to any of her classifications. The percentages of agreement between the author and the judge of (a) "up to Episode 8" classifications into the three main types, (b) these into the subgroups, (c) "up to Episode 5" classifications into the three main types, and (d) these into the subgroups were 97%, 86%, 97%, and 86%, respectively. The degree of author-judge agreement on interactive behavior ratings, as assessed by reliability coefficient, was as follows: proximal/contact-seeking, .97; contact-maintaining, .96; distance interaction, .88; resistance, .87; avoidance, .95.

## Results

### Conventional A, B, or C Type Classification

The infants were classified into the three main types and also subtypes, based on the original classification criteria. The results of classification are shown in Table 1.

First, we compared the distributions between the two cohorts and also the entire sample by the sex of the infants. There was no significant difference in the proportions of the two types (B and C) between either of the two cohorts,  $\chi^2(1, N = 60) = 0.01$ , or by sex,  $\chi^2(1, N = 60) = 2.45$ . Therefore, we analyzed the data of the 60 mother-infant pairs as a whole. Among the Japanese sample, there were almost the same proportions of the

Table 1  
Distributions of A-, B-, and C-type Japanese Infants at 12th Month

Cohort	A	B	C	Total
Cohort 1	0	20	9	29
Cohort 2	0	21	10	31
Total	0	41	19	60

infants who were identified as exhibiting secure types (B type) and insecure types (A and C) of attachment as those of the U.S. sample,  $\chi^2(1, N = 166) = 1.12$ . However, it was remarkable that the Japanese insecure group consisted of C-type infants only. In the Japanese sample, there were almost the same percentages of infants classified as B type (68%), but more infants classified as C type (32%) compared with their American counterparts. There were no A-type infants among the subjects.

### Double Classification

Table 2 shows the distributions of infants classified into subtypes by the double classification, that is, the classifications in "up to Episode 5" and in "up to Episode 8." In the "up to Episode 5" classification, where there was the less stress, 83% of the infants were identified as B type (44% of them were B<sub>2</sub>, and 46% were B<sub>3</sub>), and 17% of them were identified as C type. Again there were no A types. When the videotape recordings were reviewed "up to Episode 8," the infants classified into C type were doubled. As Table 2 shows, 9 infants shifted from B type to C type in the double classification. Thirty-four (57%) of the total 60 infants moved in the direction of B<sub>1</sub> → B<sub>2</sub> → B<sub>3</sub> → B<sub>4</sub> → C<sub>1</sub>, that is, of the direction of secure to insecure/resistant, and only one infant moved in the opposite direction, from B<sub>4</sub> to B<sub>3</sub>. Therefore, the 19 C<sub>1</sub>-type infants classified as such by the original "up to Episode 8" procedure were divided into two groups: 10 consistent C<sub>1</sub>-type infants who showed C<sub>1</sub>-type characteristics throughout the procedure and 9 inconsistent C<sub>1</sub>-type infants<sup>5</sup> who behaved like B type up to Episode 5 and behaved as C type from Episode 6 on.

### Interactive Behaviors Toward the Mother

The Japanese mean scores on each of 5 ratings of interactive behaviors toward the mother in Episodes 2, 3, 5, and 8 were compared with those of the American sample (Ainsworth et al., 1978) for each subtype of B<sub>2</sub>, B<sub>3</sub>, and C<sub>1</sub>, which included enough subjects for statistical examination. Generally speaking, the Jap-

<sup>4</sup> When we assess the quality of an infant's attachment to the mother, it is important to check whether the mother is the salient attachment figure or not. It is plausible that some A- or C-type infants who insecurely attach to their mother may have a more significant attachment figure than the mother.

<sup>5</sup> These inconsistent-C infants were formerly named as "pseudo"-C ones by the present author in Miyake et al. (1982), and Miyake et al. (1985) have continued to use the "pseudo" label in their article. However, as we have not had enough data to justify that these "pseudo"-C infants are really non-C types, we use here the more neutral label "inconsistent" rather than "pseudo."

Table 2  
*Shifts of Types in the Double Classification*

Classifications up to Episode 5	Classifications up to Episode 8					Total
	B <sub>1</sub>	B <sub>2</sub>	B <sub>3</sub>	B <sub>4</sub>	C <sub>1</sub>	
B <sub>1</sub>	0	2	1	0	0	3
B <sub>2</sub>	0	7	12	0	3	22
B <sub>3</sub>	0	0	16	1	6	23
B <sub>4</sub>	0	0	1	1	0	2
C <sub>1</sub>	0	0	0	0	10	10
Total	0	9	30	2	19	60

Japanese mean scores of each scale and patterns of five measures of each subtype obtained in the present study were very similar to those of the original American subjects. That is, in 54 comparisons of mean scores (5 scales  $\times$  4 episodes  $\times$  3 subtypes, with avoidance-scale in Episodes 2 and 3 being omitted), there were only the following seven significant differences in mean scores between the countries at a statistical level of less than 5%: Though the number of significant differences, given that the measures were nonindependent, was not above chance, the pattern was quite distinctive. Compared with the U.S. infants, on the proximity/contact-seeking scale Japanese infants were rated higher; C<sub>1</sub> infants in Episode 5,  $t(24) = 2.66$ , and Episode 8,  $t(24) = 3.01$ , and B<sub>3</sub> infants in Episode 8,  $t(120) = 3.83$ . On the contact/maintaining scale, they were rated lower: B<sub>2</sub> infants in Episode 8,  $t(18) = 3.59$ , and B<sub>3</sub> infants in Episode 8,  $t(73) = 4.86$ . On the distance interaction scale, there were no consistent tendencies; that is, the Japanese B<sub>2</sub> infants in Episode 8 were rated higher,  $t(18) = 2.69$ , but the B<sub>3</sub> ones in Episode 2 were rated lower,  $t(73) = 3.25$ . Though  $t$  scores were not significant, Japanese infants tended to show more resistant and fewer avoidant behaviors toward the mother across subtypes both in Episodes 5 and 8.

Similar comparisons of the mean scores on five kinds of interactive behaviors were made between the two Japanese types, consistent C<sub>1</sub> and inconsistent C<sub>1</sub> types. Out of the 18 comparisons (Avoidance Scale  $\times$  2 Episodes were subtracted from 5 Scales  $\times$  4 Episodes), there were the following two significant differences between them at a less than 5% level of statistical significance: the inconsistent C<sub>1</sub>-type infants were rated lower on both the contact-maintaining and the resistance scales in Episode 5, the episode before the separation from the mother,  $t(17) = 3.11$  and  $t(98) = 11.68$ , respectively, though they were rated similarly in Episode 8 on all the five scales to consistent C<sub>1</sub>-type infants.

#### *Behaviors of Mothers and Infants in the Procedure*

The present subjects were compared with the American ones cited by Ainsworth (pp. 67–79) as to 21 salient behaviors of mothers and infants. There were the following eight significant differences at a less than 5% level between the two samples, the sample sizes of which were 106 in the U.S. and 60 in Japan. First, Japanese infants were picked up by the mother more often (52% in Episode 5, while 34% of American babies were held), more immediately (all Japanese infants achieved contact within 15 s in Episode 8, whereas 78% of American infants did), and

longer (20% of them in Episode 5 and 51% in Episode 8 were in contact over 120 s, whereas American infants were 7% in Episode 5 and 24% in Episode 8). Second, Japanese infants were less easily soothed by the mother's holding, which can be attributed to the fact that the Japanese mothers tended to hold their babies more frequently and readily in daily situations. Though a "majority" of American infants stopped crying after a short delay (12 to 15 s), only 45% (in Episode 5) and 58% (in Episode 8) of Japanese infants were soothed by being picked up by the mother. Finally, Japanese infants were more strongly disturbed in Episode 6 (alone situation): 93% of them cried immediately when the mother left the room, 96% cried at least once during Episode 6, and 91% continued to cry till the end of the episode. For 90% the episode was curtailed, and for 10% it was skipped entirely. Only 9% engaged in some exploratory manipulations. The corresponding figures for American infants were 45%, 58%, 53%, 0%, and 62%, respectively. The upset in Episode 6 seemed to carry over through Episode 8; it was very difficult for infants to engage in toy play (only 44% of them manipulated toys in Episode 8, while 82% of the American babies did so), to be soothed by being picked up, or to express avoidant emotion to the mother (17% of them exhibited some avoidance, while 47% of American infants did so), though 32% of Japanese infants, as many as American babies, showed some initial avoidance at the first reunion with the mother in Episode 5.

#### Discussion

##### *Why Were There More C-Type Infants and Fewer A Types Among the Japanese Insecure Attachment Group?*

The customs surrounding infant care in Japan seem to be widely different from those evidenced by American insecure attachment groups, in which mothers are reportedly indifferent to or rejective of their children (e.g., Egeland & Sroufe, 1981; Lewis & Schaeffer, 1981; Main & Weston, 1982). In Japanese culture, people have traditionally regarded young children under 7 years of age as personifications of God. Because they thought that the children had sacred natures they treated the children very gently and permissively (Kojima, 1985; Wagatsuma & Hara, 1974). This idea has no doubt influenced modern child-rearing in Japan. Maltreated children, at least abused ones, are apparently very rare among modern Japanese families. If the Japanese child-centered culture keeps mothers from being rejective of their infants, it is reasonable that we have fewer A-type infants. But we cannot understand why there are so many C-type infants in Japan where mothers are not rejective. We may assume that there are other, specific characteristics of mothers of C-type infants. For example, it is not impossible to think of an antecedent of C-type infants in Japan, that is, though mother's both emotional and instrumental involvement with her infant can develop attachment to her, she is too possessive and forces her baby to overdepend, and thus cannot function as a secure base. However, we do not have enough information on the quality of care that tends to produce resistant type infants. An easier interpretation of the large proportion of Japanese C-type infants is in terms of the culture-boundedness of the procedure, that is, the strong stress aroused by the procedure. We would claim that at least some of the inconsistent C-type infants, who after all accounted for half

of the C-type group, felt so fearful on being left alone in the procedure that they were pushed into the C-type group.

The shifts from B type to C type or A type to C type are assumed to happen in the following three ways. First, infants who have timid or fearful temperamental characteristics will be very sensitive to the extreme stress in Episode 6 (being left alone) and thus behave insecurely by exhibiting tight physical contacts with the mother, limited explorations even in the episode with her, and unsoothed crying in their reunion episode, even if their everyday attachment to the mother is basically secure. Second, when the infants are strongly disturbed by the stress, they will reject any interactive offers from the mother except being held and, if the mothers interpret the instructions to mean that they must interact with the infants, they will get high scores on the resistance scale, which is a very important variable in discriminating C-type infants from A- and B-type ones. Finally, such an infant will also be affected by the mother, who is upset by the psychological tensions both of having to go out the room and leave her infant alone and of experiencing her baby's strong distress in the laboratory. In fact, some of the mothers seemed to be too upset to engage their infants in toy play, to leave the room naturally in Episode 5, or to soothe them in the reunion of Episode 8. These poor interactions of the mothers with their infants throughout the last three episodes of the procedure would amplify the child's disturbance and arouse resistant behaviors.

That there are fewer A-type infants among the Japanese sample than the American one can at least in part also be interpreted by the strong stress of the separation procedure for the Japanese infants. That is, if infants are severely disturbed by the stress of the procedure, they would be pushed to "catch at a straw" and direct attachment behaviors toward a person toward whom they would ordinarily not want to exhibit such behaviors. And it is reasonable that infants under strong stress cannot afford to exhibit avoidant behaviors. In fact, in the reunion after the less stressful episode (Episode 5), more than 30% of Japanese infants showed avoidant behaviors to the mother (though these were subtle compared with American babies), and subjects of Cohort 1 of this study showed more avoidant behaviors in the reunion after separation at home than in the laboratory (Takahashi & Miyake, 1984). Thus, we assume likely shifts both from A type to B type and A type to C type among Japanese infants.

#### *Is the Strange-Situation Procedure Applicable to the Comparison Between Japan and the United States?*

The present study proposes a cautious attitude toward direct comparison between the countries. It demonstrates the possibility of an improper classification of attachment types among the Japanese sample, which probably originates from the culture-boundedness of the original procedure. In the present article the cultural bias is mainly interpreted as a function of the stress imposed on infants by that procedure. We hypothesize that as the stress aroused, especially in the infant-alone (Episode 6), is beyond the mild level for Japanese mothers and infants, some infants, B type and A type in reality, were pushed into the C-type group. A majority of the inconsistent C types would be of this category.

In addition, we believe that the following qualitative culture-bound aspects of the procedure must be considered in the cross-

national comparisons. First, the mothers' behaviors in each of the countries must be noted. Even though we gave the original instructions to the Japanese mothers, we could not control the mothers' interpretations of them. In other words, the instructions, though they were objectively faithful to the original, were naturally colored and changed in their comprehension by the culture. These cultural influences could not but affect the results. For example, the Japanese mothers, often without waiting for an initial response from their babies, went right ahead and picked them up and kept holding them in the second reunion (Episode 8). In fact, 17 (28%) in Episode 5 and 44 (73%) in Episode 8 out of the total of 60 mothers took the initiative of picking up and holding; 12 (20%) in Episode 5 and 31 (51%) in Episode 8 continued to hold the baby over 120 s. The mothers' preference for preemptive holding necessarily limited their infants' options of behaviors. For example, the infants were seldom rated as maximum 7 points on the interactive behavior scales of either proximity/contact-seeking or contact-maintaining, because the mothers initiated contacts and continued to hold the baby. It is reasonably assumed that if more mothers had been able to await their infants' response to their return, not a few infants would have been rated higher on these scales. Second, we claim that further study is needed concerning the validity of the classificatory criteria of the original procedure in each culture. For example, in the second reunion with the mother (Episode 8), degrees of avoidance among Japanese infants, rated on the interactive behavior scale of avoidance, were low. Actually, there were only three infants who scored over 4 points on the 7-point scale, while the American A-type infants, 22% of the total sample, were rated 5.92 (A<sub>1</sub> type) and 4.70 (A<sub>2</sub> type) on the average. In addition to their subtlety, avoidant behaviors among Japanese infants were confusing, because these were often exhibited consecutively with proximity-seeking behaviors, though this is an unusual combination. Among the three exceptional infants who were rated over 4 points, two expressed strong proximity-seeking behaviors in the same episode (one was 5 points and the other was 7 points). Both the lower scores on the avoidance scale and mixture of avoidance with approach are well understood in light of Japanese customs of interpersonal interactions, in which direct or solo avoidant behaviors toward a person are inhibited as an impolite manner of interaction. Thus, the diagnostic value of each behavior as a classificatory cue should rest upon how that behavior truly operates in each culture. In any case, it is doubtful that psychological reality is the same for Japanese and American C-type infants. If the circumstances of testing are culturally appropriate, we predict that the modal infants will be classified as securely attached in any culture.

#### *Does the Original Procedure Measure the Individual Differences in Attachment Among Japanese Infants?*

The strange-situation procedure seems to be applicable for the classification of Japanese infants into A, B, or C type, although A types are rare and there are a considerable number of inconsistent C types, at least among babies from middle-class homes. Though these B-, consistent-C, and inconsistent-C-type infants show clearly different behavioral characteristics from each other in the original procedure, we cannot yet indicate the external validity of the classification for describing the individual differ-

ences among Japanese infants. It is hoped that the future analyses of our longitudinal study in progress will clarify the nature of each type of infant.

### *Deriving Richer Information From the Strange-Situation Procedure in Different Cultures*

This study suggests some strategies. The first is multiple classification varying the level of the stress. We assert the importance of examining which level of the stress caused by the "strangeness" in the strange-situation procedure is optimal for diagnosing the quality of attachment. The cultural differences in susceptibility to stress must affect the results directly and/or indirectly as the present study has demonstrated. Plural classifications, like the double classification in the present study, which are based on the level of stress in the procedure, may well enable us to find new, significant types in non-American cultures, including subcultures within the United States.

Second, the present study recommends that the diagnostic values of each behavior as a classificatory cue be examined against its role and frequency in daily life. For instance, considering the above-mentioned discouraging by Japanese culture of the exhibition of avoidance to the mother, avoidant behaviors among Japanese infants should be given much diagnostic value even when they are subtle and mixed up with approach behaviors. On the contrary, proximal behaviors among Japanese infants should be somewhat downplayed as to discriminant value, because physical contacts are dominantly and frequently used in daily mother-infant interactions.

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Received September 12, 1983

Revision received July 3, 1985 ■