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# INFANT TEMPERAMENT : ITS RELATIONSHIP WITH ATTACHMENT CLASSIFICATION AND LONGITUDINAL DATA ANALYSIS —— A PROGRESS REPORT

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The purpose of this paper is to clarify how temperamental factors affect the outcomes of attachment classification from the strange situation procedure. We examined the stability and consistencies of temperamental characteristics, especially behavioral inhibition. The subjects of this study were composed of two cohorts (28 and 33 children respectively). Mothers were asked to answer two kinds of questionnaire about their child's behavior style, at eight, sixteen (Carey and McDevitt's Infant Temperament Scale), twenty-seven and forty months of age (Early Childhood Personality Inventory). Children were observed for ten minute periods in their homes at twenty-seven months, and were also observed while studying active and passive picture dyads at thirty-two months.

According to the results of the Infant Temperament Questionnaire, the future "C" infants were already tending to be less distractible and this tendency was also noted at sixteen months. In other words, the future C babies were relatively more difficult to sooth via outer stimulations. Therefore, it is possible that some babies classified as C at one year old did not show their true attachment quality due to such temperamental characteristics.

Concerning temperament, although there were low to moderate correlations from eight to sixteen months, we found relatively high stabilities after the third year. Also, the children's tendency towards behavioral inhibition remained very stable during the first three and a half years. In addition, our findings suggest that with respect to inhibition an agreement seems to exist among mother's report, behaviors observed, and the result of the projective assessment (active/passive pictures).

Key words : temperament/inhibition/attachment classification/personality development/

Temperament is the construct which concerns stylistic aspects of behavior or behavioral style, such as slow vs. fast, mild vs. intense reaction, etc.. This construct has been thought of as having a genetic or constitutional base, maintaining some stability across the life span (Buss & Plomin, 1975). However, it does not imply that temperament has never been changed through development. It rather implicates the importance of the

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"transactional model" (Sameroff & Chandler, 1975). That is, even if the quality and/or amount of outer stimulation is the same, we can not expect uniformity of reactions from the children if there are large variations in their temperamental qualities (threshold of reaction, intensity of reaction, modality specificity of sensitivity, temporal characteristics such as reaction time, recovery time, and rise time). These temperamental characteristics affect the child rearing practices of parents and in turn modulate the preoccupations and early behaviors of parents. In this sense, the child and the parents (caretakers) are the truely "interacting couple" (Rothbart & Derryberry, 1981), the continuity and change of the temperamental qualities depending on the "goodness of fit" (Thomas & Chess, 1977) between the child and the caretaker. Thus research into temperament has taken the opportunity of focussing attention on children as actively interacting with caregivers, in the field of socialization. For example, it has been thought for a long time that one of the most important determinants of infant's healthy attachment to caretakers is the sensitivity of caretakers to infant signals (Ainsworth et al., 1978).

However, it is very plausible that the degree of sensitivity should highly depend on the extent of the clarity, detectability, and discriminability of the signals infants express.

Let us consider the relationship between infant temperament and attachment a little further. The "strange situation procedure" is a very well known standard assessment of the quality of infant attachment from the first to second year from birth. This procedure consists of several episodes, such as ; seperation from mother, stranger's approach, being left alone in a room, reunion with mother, etc. In this situation, most students in this area place high importance on the occurrence of emotional distress after mother's departure, and recovery from distress through meeting mother again, thus utilizing her as a comfort resource.

While it would seem highly likely that ecological factors (such as the opportunities for separation from mother in the natural environment) affected the outcomes of the assessment of attachment, it is also clear that infant temperament influenced them. There is much evidence showing correlations between infant's irritability and future "C" classification (Crockenberg, 1981 ; Miyake et al., 1983 ; Miyake et al., in press). As this procedure led each infant into some unfamiliar situation or "uncertainty", it is thought that the specific infant behaviors in this situation are reflected on another temperamental variable of behavioral "inhibition" (Kagan, 1983 ; Coll, Kagan & Reznick, 1984). However, how such early temperamental variables affect behavior in the strange situation has not yet been precisely investigated.

Now, let us return to the temperamental variables, among which, we are especially interested in inhibition. Since the expression of a certain temperament is situation specific to some extent, we cannot assess across wide ranges of situations and contexts, only appropriate ones. As behavioral inhibition is characterized along the dimension of approach vs. withdraw, acting out vs. withholding actions, bold vs. fearful or cautious attitudes, etc. ; to unfamiliar stimuli or to uncertain situations, we can easily construct such situations or simply observe the child's initial reactions when for example he/she visits a doctor's office, visits a friend's home, meets a stranger, etc. Opportunities for behavioral inhibition are very pervasive and the expressions of this special behavior are very salient.

It is known that this individual difference shows not only cross situational consistencies, but also moderate stability over the first few years of life (Kagan, 1983 ; Coll, Kagan & Reznick, 1984), and up to middle childhood and young aduldhood (Kagan, Lapidus & Moore, 1978 ; Kagan & Moss, 1962). However, there are relatively sparse data about the developmental consequences of behavioral inhibition. There will also be some shared properties between inhibition and "reflection-impulsivity" (Kagan & Kogan, 1970 ; Messer, 1976 ; Usui, 1982) in the sense of both affecting the initial reactions to uncertainty. A cross-cultural research study reported that Japanese children were more reflective (took a longer time and made less errors on the test of the Matching Familiar Figures Test) than American and Israeli counterparts with respect to preschool/early school years (Salkind, Kojima & Zelniker, 1978). It is interesting to combine this result with other cross-cultural studies which indicate that an inhibitory, cautious coping style is more adaptive for cognitive socialization in Japan as compared with the United States (Azuma, Hess & Kashiwagi, 1981 ; Miyake, Tajima & Usui, 1980). In addition, data concerning racial differences with respect to inhibition shows that Chinese infants tended to be more inhibited than Caucasian infants (Kagan, Kearsley & Zelazo, 1978). Thus, a truely fascinating research area would be that which investigates how cultural demands influence the somewhat biologically based inhibition. From cross-cultural perspectives, we feel it appropriate to investigate the distinctive role of temperamental inhibition in the process of socialization in Japan and the United States.

Here, we have two problems to clarify. Firstly, we will examine the ralationship between the attachment classification at twelve months and the temperamental variables before and after this time. Secondly, we will proceed to examine the stability of some temperamental dimensions, between inhibition and child behaviors at home and in the laboratory.

## METHOD

### Subjects :

The sample can be described as follows ; (1) First born infants, born at term without serious pre- or perinatal complications, (2) the mothers were of at least a high school graduation and were not employed full-time, (3) the fathers were engaged in white collar or professional vocations, (4) the mothers were between 22 and 30 years of age, and (5) no other person was living in the home.

The total sample consisted of two sub-groups : "Cohort 1" and "Cohort 2". Both samples have been followed from pregnancy until now. Cohort 1 consisted of 28 children born in 1980 (11 boys and 17 girls) and Cohort 2 consisted of 33 children born in 1982 (20 boys and 13 girls).

### Procedure :

(1) *Ainsworth Strange Situation*

We used the original Ainsworth strange situation procedure at 12 months of age. The details of this procedure were described earlier (Miyake et al., 1983).

(2) *Infant Temperament Questionnaire*

Mothers of children were asked to complete the Japanese translation of Carey &

McDevitt's Infant Temperament Questionnaire (Carey & McDevitt, 1978 ; Shoji, 1982). We administered it at eight and sixteen months of age.

(3) *Early Childhood Personality Inventory*

We also asked the mothers to answer the children's personality inventory, which contained eight sub-scales concerning temperamental qualities and competences. The labels of each sub-scale (plus one sample item) are as follows :

1. Approach-withdraw tendencies in the interpersonal situation — (is ready to approach a visitor at home.)
2. Approach-withdraw in impersonal situations (ie. with objects) — (when he/she saw a completely new toy or toy, he/she was eager to play with it.
3. Adaptability — (difficulty in sleeping at a house other than his/her own.)
4. Non persistence — (when watching a favorite TV program, if mother called only once, he/she sometimes failed to respond.)
5. Resilience in psychological stress/less irritability — (not easily wining or crying even if he/she got into trouble or frustration.)
6. Achievement orientation — (is always doing his/her own best while playing and engaging in any activities.)
7. Cognitive competence/concern — (is always interested in letters, the curved form of the Japanese sound-signs (Hiragana) and Chinese characters).
8. Activity — (likes to run around).

Each sub-scale included eight items thus the total number of items was 64. We administered this inventory at twenty-seven and forty months of age.

## RESULTS

(1) *Attachment classification and infant temperament*

Among the nine scales of Carey and McDevitt's infant temperament questionnaire, only one scale was statistically significant at eight months and this scale was consistently nearly significant at sixteen months of age.

TABLE 1

Means and SDs of Infant Temperament Scale of B and C babies at eight months of age.

| scales | B babies (N=31) | C babies (N=16) |
|---|---|---|
| activity (high) | 4.76 (0.49) | 4.92 (0.65) |
| rhythmicity (arrhythmic) | 2.68 (0.59) | 2.78 (0.35) |
| approach (withdrawal) | 2.81 (0.73) | 2.79 (0.83) |
| adaptability (slow) | 2.70 (0.58) | 2.86 (0.73) |
| intensity (high) | 3.81 (0.64) | 3.83 (0.60) |
| mood (negative) | 3.54 (0.48) | 3.58 (0.50) |
| persistence (non⁻) | 2.96 (0.73) | 2.89 (0.60) |
| distractibility (non⁻) | 2.49 (0.45) | 2.81 (0.55) * |
| threshold (low) | 3.76 (0.68) | 3.59 (0.55) |

* : t value=3.16, $p < .036$

TABLE 2

Means and SDs of Infant Temperament Scale of B and C babies at 16 months of age.

| scales | B babies (N=33) | C babies (N=15) |
|---|---|---|
| activity (high) | 4.63 (0.64) | 4.74 (0.55) |
| rhythmicity (arrhythmic) | 2.79 (0.54) | 2.93 (0.65) |
| approach (withdrawal) | 3.12 (0.85) | 3.22 (0.78) |
| adaptability (slow) | 2.77 (0.59) | 2.83 (0.66) |
| intensity (high) | 3.90 (0.66) | 4.17 (0.58) |
| mood (negative) | 3.52 (0.46) | 3.61 (0.47) |
| persistence (non⁻) | 2.79 (0.74) | 3.11 (0.52) |
| distractibility (non⁻) | 2.67 (0.50) | 2.94 (0.46) * |
| threshold (low) | 3.92 (0.74) | 3.77 (0.51) |

* : t value=1.80, p< .08

From eight to sixteen months, the C babies were coherently seen as less distractible by their mothers than B babies. It could be said that future C babies were not easily distracted by outside stimulation (once they began to fuss and/or cry) at eight months, when compared with future B babies. Or, such future C babies might be relatively less resilient to emotional distress and more resistant to outside control.

It is possible that some infants (classified as C babies because of failing to overcome their distress or utilize their mother as a comfort resource at reunion) were temperamentally non distractible.

Furthermore, we rescored and invented a new variable which was the composite of the following five scales which seemed to be related with a difficult temperament : arrhythmicity, slowness to adapt, high intensity, negative mood, and non distractibility. If a child's score (on each scale) was greater than the mean, we assigned him/her one point. Thus, possible score range for "difficult temperament" was zero to five.

There were not any significant differences among the two groups both at eight and sixteen months of age (eight mons. : 2.61 (1.20), n=31, 2.50 (1.03), n=16, t value=0.32, non sig., : sixteen mons. : 2.42 (1.15), N=33, 2.80 (1.08), N=15, t value=−1.07, non sig., figures show means, standard deviations, and number of subjects of "B" babies and "C" babies respectively).

(2) *Comparisons of two attachment groups (with respect to personality characteristics) at 27 and 40 months*

A t-test of the scores of each of the eight scales from the early childhood personality inventory at 27 months, did not reveal any significant differences ; with the exception of resilience /less irritability (table 3). The "C" babies were tending to become more vulnerable, irritable and less resilient once they became emotionally distressed. Then, when we used t-test on these two groups for the the eight sub-items belonging to the scale of resilience/less irritability, it appeared that the following two items were significant and that one additional item was reaching significance. The earlier "C" babies were more apt to : become upset in reaction to being scolded severely (t=3.67, p<.001, df=53) ; cry or wine if frustrated (t=2.46, p<.017, df=53) ; be difficult to sooth once irritated ; and fuss

and cry more frequently ($t=1.91$, $p<.062$, $df=53$).

However, by forty months of age, not only such differences in resilience but also differences with respect to all characteristics had disappeared completely.

TABLE 3

Means and SDs of personality questionnaire at 27 months of age.

| scales | B baby (N=35) | C baby (N=20) |
|---|---|---|
| approach (person) | 33.00 (7.85) | 31.10 (10.03) |
| approach (object) | 32.71 (6.81) | 32.65 ( 6.48) |
| adaptability | 31.14 (7.88) | 31.00 ( 4.55) |
| non-persistence | 24.17 (5.89) | 26.75 ( 5.18) |
| resilience/ less irritable | 34.54 (6.09) | 30.30 ( 6.28) ** |
| achievement orientation | 33.60 (4.72) | 35.05 ( 3.33) |
| cognitive concern | 37.34 (6.82) | 36.95 ( 5.80) |
| activity | 37.09 (5.95) | 37.25 ( 4.64) |

** : t value=2.46, df=53, p<.017

It could be argued that one cannot suggest any relationship between the attachment classification at age one year and personality variables occurring after the fourth year of life. However, it was very interesting that according to the mothers' checklists (each consisting of 30 child behavior characteristics), the mothers of C babies recognized temper tantrums more frequently in their chlidren than the mothers of B babies ($t=2.25$, $p<.039$, $df=17$).

(3) *Stability of the infant temperament scale and early childhood personality inventory*

1) Carey and McDevitt's Infant Temperament Scale

We calculated the correlations of the Carey and McDevitt's infant temperament scale at eight months and sixteen months. The stability of each scale can be seen in table 4. Generally speaking, the correlation coefficients were low to moderate, the highest being for approach/withdraw (.65). All were statistically significant except for the scale of intensity.

TABLE 4

Stability of infant temperament scale: eight to sixteen months.

| scales | activity | rhythmicity | approach | adaptability | intensity | mood | persistence | distractibility | threshold |
|---|---|---|---|---|---|---|---|---|---|
| correlation coefficients | .28 * | .45 ** | .65 ** | .52 ** | ** .25 | .57 ** | .44 ** | .42 ** | .48 ** |

* : p<.05 ; ** : p<.01 ; N=42

2) Early childhood personality inventory

The stabilities of eight scales between 27 and 40 months of age are shown in table 5. In contrast with these of Carey and McDevitt's scale, there were moderate to high

correlations.

TABLE 5

Stability of child's behavioral characteristics: 27 to 40 months of age.

| scales | approach: person | approach: object | adaptability | nonpersistency | resilience/ less irritable | achievement orientation | cognitive activity | activity |
|---|---|---|---|---|---|---|---|---|
| correlation coefficients | .87 * * | .71 * * | .75 * * | .42 * | .55 * * | .66 * * | .54 * * | .84 * * |

* : p<.05 ; * * : p<.01, N=20

The scale of approach/withdraw tendency in interpersonal situations showed that the highest correlations and that of object (ie. impersonal situations involving reaction to an object) was also high. However, the stability of activity increased to the extent of the level of approach/withdraw (person) scale while it was low in Carey and McDevitt's scale (r=.28).

3) Stability of inhibition ;

**From eight to sixteen months**

We divided the subjects using the mean scores of approach/withdraw scale scores from all subjects (means and standard deviations were ; 2.78, 0.76, n=48 ; 3.13, 0.81, n=50, eight and sixteen months respectively. (Higher, shows a greater withdrawing tendency). If a subject's score exceeded the mean, he/she was classified as inhibited. The remaining

TABLE 6

Stability of inhibition from eight to sixteen months of age.

| | | sixteen months | | |
|---|---|---|---|---|
| | | uninhibited | inhibited | total |
| eight months | uninhibited | 16 | 4 | 20 |
| | inhibited | 6 | 16 | 22 |
| | total | 22 | 20 | 42 |

p<.0009 by Fisher's test, chi square is 9.66, p<.001, and phi coefficient is .789.

subjects were classified as uninhibited. As the cross-table of stability shows (seen in table 6), the chi-square was highly significant (chi-square=9.66, p<.001). Most of the children remained in the same class (76.2%). And there were no differences of stability in inhibited and uninhibited children.

**From 27 to 40 months**

Modeling Coll, Kagan & Reznick (1984), we dichotomized the two approach/withdraw scores independently by each mean (means and standard deviations were ; 27 mons ; 32.44, 8.53 for person, and 32.60, 6.60 for object, n=57 ; 40 mons ; 30.86, 8.19 for person, and 31.38, 5.74, n=21). While two scale were not highly correlated with each other (r=.49, p<.001, n=49 for 27 mons. and r=.53, p<.001, n=21 for 40 mons.), we

categorized as uninhibited if both were greater than each mean, or categorized as inhibited if both were smaller than each mean. Then, we made a cross-table of inhibition ; 27 mo. by 40 mo. (table 7). While there were both nine uninhibited and nine inhibited

TABLE 7

Stability of inhibition from 27 to 40 months.

| | | 27 mo. | | | total |
|---|---|---|---|---|---|
| | | uninhibited | inhibited | unclassified | |
| 40 mo. | uninhibited | 8 | 0 | 1 | 9 |
| | inhibited | 0 | 8 | 0 | 8 |
| | unclassified | 1 | 1 | 1 | 3 |
| | total | 9 | 9 | 2 | 20 |

subjects at 27 mo., all children except one from each group remained in the same class after one year. Furthermore, it must be noted that there was no child who changed from inhibited to uninhibited or vice-versa.

Moreover, as we check the more remote stabilities (table 8), it is clear that there were rather high stabilities in behavioral inhibition for the first three and a half years of life.

TABLE 8

The consistencies in classifications of inhibition at various time periods.

| time-intervals | | | |
|---|---|---|---|
| 8 — 27 mo. | chi-square = 7.64, | $p < .005$ | $n = 34$ |
| 8 — 40 mo. | Fisher's test | $p < .04$ | $n = 12$ |
| 16 — 27 mo. | chi-square = 8.25, | $p < .004$ | $n = 33$ |
| 16 — 40 mo. | Fisher's test | $p < .01$ | $n = 17$ |

**Analysis of changed subjects**

According to Kagan (1983), it was suggested that parents in United States tend to punish inhibited reactions more and consistently reward uninhibited behavior. He hypothesized that the probability of an inhibited child becoming less inhibited was greater than vice-versa. It was thought that direction of change would depend on the ego-ideals of parents and the degree of parents' tolerance in cases of discrepancies between parents' ego-ideals and child's inhibition. In Japan, it seems that such value orientation in child inhibition is different, with somewhat more favorability towards inhibition. Thus, we examined the change pattern. As we described earlier, there were not any children who change from inhibited to uninhibited or vice-versa from 27 to 40 mons. but we found some cases of this from eight to sixteen and from sixteen to twenty-seven months (See : table 9).

TABLE 9

Number and percentage of children who changed from inhibited to uninhibited and vice-versa.

| intervals | uninh — inh | inh — uninh |
|---|---|---|
| 8 — 16 mo. | 4 (3Ms&1F) /20<br>20% | 6 (4Ms&2Fs) /22<br>27.3% |
| 16 — 27 mo. | 4 (3Ms&1F) /20<br>20% | 3 (1M&2Fs) /13<br>23% |

Note ; a number of children who changed, a total number of children within the same category at an earlier period, and a percentage of the changed children.

It was difficult to find a clear pattern of change from either direction, although boys appear to change more readily than girls and slightly more children change to be uninhibited.

(4)*Behavioral correlates of inhibition*

We tried to examine the behavioral consistency between inhibition based on the two approach/withdraw scales at 27 months. and actual behaviors at home and in the lab..

1) Behaviors at home at 27 months.

Two females (one tester and one observer) visited the home and asked a child to play with various toys (brought by the visitors) for ten minutes in the presence of his/her mother. This was for Chohort 1. The mother was told in advance not to initiate activities with her child. They coded the following behaviors : time until the child initially interacted with at least one of the two visitors (eg.., speak, show something, etc.) ; time spent in physical contact with mother ; and the amount of time spent within a hand's reach of mother.

Although only seven out of fifteen children tried to interact with at least one of the visitors, five children (out of a total of 8) were uninhibited and the other two children (28.6% out of seven inhibited children) were inhibited. Concerning physical contact with mother, the children who didn't make contact at all were mainly uninhibited children (five out of a total or seven. uninhibited and one out of a total or six inhibited ).

Similarly, concerning the time spent within a hand's reach of mother, only 28.6% of uninhibited children were classified as lesser time group while 83.3% of inhibited children were classified as a more time group (we split the groups in two, using the median as a dividing line). Thus, it is clear that the inhibited children show a greater proximity seeking tendency towards their mothers.

2) Behaviors in the laboratory at 32 months : active/passive pictures.

Each child saw five different pictures which were selections from Kagan's original pictures but redrawn to be suitable for Japanese children (Kagan, 1983 ; Coll, Kagan & Reznick, 1984). Each picture showed two contrasting figures. For example, one picture was of a mother feeding a baby and a bear chasing a boy, etc.. It was hypothesized that inhibited children have a greater tendency to empathize or identify with the passive member of the dyad (Kagan, 1983). As the pilot study for this measure, we checked the duration of time spent in looking at either figure and calculated these times as ratios of

total looking time. Although the absolute measures of duration and time looking at either figure failed to reach significance because of large variations within each group, the ratios of time with frequency of studying the active member of the dyad were significantly larger for uninhibited children than for inhibited children (each mean was 54.55 and 47.71 and t-value was 2.87, $p<.05$, $df=16$). This result seems to be partially consistent with Kagan's conceptualization.

3) Global behavioral characteristics at 40 mons..

Mothers were asked to check thirty items describing children's global behavioral characteristics with adjectives from a five point scale ranging from "very likely" to "least likely". We found significant differences in one third of items between the two inhibition groups. As the sample was small, we must be cautious in interpreting data, but the pattern of the results appears to be highly consistent with our expectation.

TABLE 10

Means and standard deviations of the children's behavior check lists.

| (in Japanese) labels of items | Uninhibited (N=7) | Inhibited (N=7) | T-test |
|---|---|---|---|
| energetic (genki ga yoi) | 4.86 (0.38) | 4.29 (0.49) | p<.03 |
| active (katsudouteki) | 4.57 (0.54) | 3.71 (0.76) | p<.03 |
| cheerful (hogaraka) | 4.50 (0.50) | 3.71 (0.49) | p<.02 |
| apt to fret (guzuriyasui) | 2.14 (1.22) | 3.57 (0.79) | p<.02 |
| sulky (suguni fukureru) | 1.71 (0.76) | 3.71 (0.49) | p<.001 |
| resistant (hankouteki) | 2.71 (0.76) | 3.71 (0.76) | p<.03 |
| quiet/gentle (otonashii) | 1.29 (0.49) | 3.00 (0.82) | p<.001 |
| bold (mono oji shinai) | 3.71 (1.25) | 2.34 (0.54) | p<.03 |
| adventurous (bouken zuki) | 4.00 (0.82) | 2.57 (0.54) | p<.001 |
| naughty (yancha) | 4.29 (0.76) | 3.29 (0.95) | p<.05 |

To summarize the results : uninhibited children were more active, energetic, cheerful, bold, sensation seeking, positive in mood, less irritable, and less sulky than inhibited children. However, the only exception was that inhibited children were seen as more resistent than uninhibited counterparts, by their mothers. It could be interpreted that the inhibited children were more apt to be a little bit stubborn, or be so vulnerable to criticisms and punishments from mothers as to lead to emotional distress.

## GENERAL DISCUSSIONS

(1) *The effect of temperament on the measurement of attachment*

Although there were not salient differences in overall early temperamental qualities, later insecurely attached infants ("C" infants) had been seen as more non-distractible by their mothers than securely attached counterparts ; at about four months before the assessment of attachment. It would seem highly plausible that some infants' true attachment quality was disguised by their relative lack of soothability and/or more vulnerability in reaction to interpersonal stress.

(2) *Stability and consistency in temperament and inhibition*

Comparing the stability of two scales ; that of Infant Temperament Scale was relatively less than that of Early Childhood Personality Inventory, though test-retest interval was shorter for ITS (eight to sixteen) than for ECPI (27 to 40 months). We cannot explain this differential stability, though this may result from differences in psychometric reliability and/or the fact that mothers' conceptions of their child's behavior characteristics were more easily changed during the first to second year after birth.

Behavioral inhibition remained highly stable for the first three and a half years from birth. However, we are limited as regards this data because it is based upon mothers' reports. Mothers' reports should be mediated, modulated and filtered for preoccupations, ego-ideals, personality characteristics and social class background, etc.. Though more objective, concrete behavioral data was necessary, the behaviors observed at home (27 mons.) and the preferences for active/passive pictures were very suggestive.

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