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Author(s)	USUI, Hiroshi; 臼井, 博; TAJIMA, Nobumoto et al.
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AN ECOLOGICAL STUDY OF FAMILY
RELATIONSHIPS AND CHILD DEVELOPMENT IN
A RURAL COMMUNITY : A PRELIMINARY REPORT
OF ONGOING STUDIES.

Hiroshi Usui

Hokkaido University of Education, Sapporo.

Nobumoto Tajima, Yasuji Kojima, and Shigeru Nakano

Hokkaido University.

INTRODUCTION

The problem how human beings develop in various social and natural environments has been one of the long-standing questions in the social sciences. In Japan the differences in urban *vs.* rural life styles rather than social classes, seem to exert more influence on child development and variables relating to child socialization.

In less densely populated area of Hokkaido, the northern part of Japan, where this study was conducted, we were eager to learn what kind of differences existed in child development between urban and rural subjects.

About twenty years ago, Fujino et al.(1955, 1957, 1958) made an extensive survey of the personality characteristics of children living in extremely isolated fishing communities along the south-western coast of Hokkaido. Three modal personality traits were found : (1) "concreteness-bounded intellect", as an intellectual and personality trait, (2) "naive stability", as an emotional trait, and (3) "social immaturity or passive stability", as the social-behavioral trait.

To answer the question posed as to how socialization processes in rural societies have changed with the incredible advancement in mass communications and living standard, Miyamoto et al. (1973, 1974, 1975) conducted a three-year-follow-up study of preschool age to early school age children. Their study focussed on the cognitive development of the children living in a farming community in mid-southern Hokkaido. Some findings which attracted our attention were : (1) On the whole, children in their sample were relatively retarded in language skills compared with the matched counterparts in Sapporo, the capital city of Hokkaido with population of 1,300,000 people. But, (2) there were no differences in non-verbal intelligence (Performance IQ of WISC and WPPSI) and the conservation of numbers and, (3) the correlations between the variables related to the learning environments in the home and the intensity of the cognitive activity of mothers, and the intellectual abilities of children were statistically non-significant in the rural sample, whereas a significantly positive contrast was observed in the urban subjects. It could be postulated that the maternal influences in the cognitive socialization processes of the children in the rural community might be more diffused by the presence of other family members than in the urban family. For, to compare urban families which are almost all nuclear in structure with rural families where the grand-parents are usually present, the maternal influences on the children in the rural families might be buffered by the grand-parents, many of whom still hold dominant financial power in their home.

We then may be able to postulate two different hypotheses about the early language retardation in rural children. The first one parallels the findings concerning the retardation of language skills in the lower class children of America and England. That is the point of view which states that the cognitive use of language is the essential necessity for cognitive development (Bereiter and Engelmann, 1966). It is also akin to the argument that the quality and quantity of communication between parents and children, or in other words, their "communication style" affects the socio-cognitive development of the children (Bernstein 1961; Hess and Shipman 1965).

Recently, in a cross-national study titled "Cross-cultural study of the influences of mothers and teachers on the intellectual functions, communication styles and educability of children" (Azuma and Hess 1977), Tajima and Miyake (1976) tried to compare the modes of mother-child interaction in the rural farming families of mid-southern Hokkaido, with urban families living in Tokyo and Sapporo. They found the quality of mother-child verbal communication in the rural sample to be very limited, in contrast with that of the urban samples where children and mother often engaged in unstructured games of up to 10 minutes duration. According to the mother's behavioral characteristics as measured by observer ratings, rural mothers tended to press their children relatively little for 'high performance' and also showed less consideration for the inner psychological state of their children.

The second hypothesis is intimately connected with the viewpoint that emphasizes the child's initiative in activities directed to the outer world. It also may relate to the concept of "resilience in development" (Kagan and Klein 1973; Kagan 1976).

Hollos and Cowan (1973) studied socio-cognitive abilities of children in the three social settings in rural Norway, differentiating among those in the degree of social isolation or the quantity of verbal and social interaction between adults and children. The children, living in the most isolated rural villages performed more poorly in the role taking task than the rest of two samples, but they did equally well in the logical operation tasks.

It seems to us that these findings are in opposition to the hypothesis by Bruner, et al. (1966) that it is the environment of spoken and written language which stimulates and provides the necessary tools for conceptual growth beyond the preoperational level. In conclusion, Hollos and Cowan asserted that language stimulation does not seem to play a major role in the development of logical operations. Rather it is the child's own self-initiative behavior (play) that is more effective.

This seems to be in agreement with the fact that in rural areas there have been a relatively greater number of language retarded children in the early age range, but not as many language retarded in middle childhood or early adolescence. One possibility may be that the rural group catches up with its urban counterparts through more self-initiating behaviors.

While we were examining these various research findings, we encountered the following questions.

- 1) What are the underlying characteristics of Japanese rural child's retardation in verbal development?
- 2) What are the factors that cause such differences?
- 3) Comparing this retardation with the underdevelopment of verbal skills of deprived and lower SES (socio-economic-status) children in Western cultures, what are the differences in the process of development of verbal skills between two groups?

- 4) Is this retardation remediable? Are these children able to catch up with their urban counterparts? If possible, we wonder what the remedial processes are?
- 5) Are there any differences in the behavioral characteristics of interaction processes among the various types of parents?
- 6) What are the behaviors or communication styles of the parents which promote the child's cognitive and educational development?
- 7) How are disciplinary techniques, rearing practices, and expectations differentiated in term of birth order and/or sex?
- 8) How does multiple mothering (the sharing by the grandparents, especially the grandmother, in the mother's role in early childhood) affect the personality development of rural children?

We started our project in order to clarify these intriguing questions. Therefore the goal of this project was to make clear the process of socio-cognitive skills and educational development of children in rural farming areas on one hand, and the nature of parent(or grand-parent)-child interaction (which is supposed to be one of the most powerful determinants of such abilities), on the other hand.

This is a preliminary report of the case studies of two boys (TH, WM) during two years (4 to 5 years of age). The two boys were suspected to have retarded in verbal development accompanied by underdevelopment of social skills during the first three years of life. In doing so, we hope to find hints to answer the above questions and to explore the meaningful variables in these studies.

METHODOLOGY

(I) Subjects

This project sample was taken from one rural farm village, with about 1,800 inhabitants, located in the mid-southern Hokkaido. All of the sample children were attending the same day care center. Almost all of these families were engaged in rice farming and their incomes appeared to be somewhat higher than lower and lower-middle class families in the urban areas.

40 extended families with grand-parents and the same number of nuclear families were studied. Both types of families had children in the 3 to 4 year old age range. The prerequisites for inclusion as the subjects in the study were as follows. Details of the recruitment plan are shown in Table 1.

		With grand-parents	Nuclear families
First-borns	boys	10 (3)	10 (1)
	girls	10 (7)	10 (0)
Non-first-borns	boys	10 (8)	10 (1)
	girls	10 (3)	10 (1)

Table 1. Sample Details

1. All samples had to be the intact intact families.

2. Half of them had to include grand-parents and the rest half to be pure nuclear families.
3. Half of the children had to be first borns and the rest non-first borns.
4. At the starting point, half of the children had to be 3 years of age and the rest 4 years of age.
5. Half had to be boys and the rest girls.
- 6.* The families' occupations had to related to agriculture.
7. About half of the subjects in each cell had to compose a sample for a follow-up study.

(* Although we have been recruiting largely from farming families, we are planing to make a comparative study of both rural-farming and rural non-farming families in the future.)

Listed above in each cell of Table 1 is the number of subjects who should ideally be enrolled in this study. The figures in the parentheses, however, express the amount of data available to us now (10 families in 1976 and 14 families in 1977 were enrolled). Conceivably, therefore, 80 families might participate in our project in the future.

In addition, we should add that 6 out of 10 families in the 1976 sample were subjected to a follow-up study in the succeeding year.

(II) Materials and Procedures

1. Child-caretaker interaction

The following three pairs of interaction (mother-child, father-child, grandmother-child) took place in an unstructured situation with one type of toy available. We took video-tape records of each of these 10 minutes spontaneous interaction processes (playing with toys) in a room at the day care center. The kind of toys used were as follows :

- (a) Mother-child interaction : Dusyma, the German-made toy, which has 63 colored pegs that can be put into holes in a board, was chosen for the mother-child pair. Two sets of the toy were used, one for mother and one for the child. If they wished, they could make several patterns of array with the pegs on the board.
- (b) Father-child interaction : Lego Land, a toy composed of many small plastic Lego blocks, which can be used to build things, e.g., house, car, animals and so on. The father and child were given a set of this toy with a picture illustrating some samples.
- (c) Grandmother-child interaction : Two sets of various forms of wooden blocks were given to them. Again, if they wanted to, they could make many things, e.g. towers, houses, cars, and so on.

We think this kind of setting allows for comparability among these sessions. In 1976, we recorded 10 mother-child interactions (8 boys and 2 girls) and 7 grandmother-child interactions (boys only) by VTR. The following year we taped 22 mother-child interactions (11boys and 11girls), 21 father-child interactions (11 boys and 10 girls) and 15 grandmother-child interactions (6 boys and 9 girls) by VTR.

2. Interviews*

- (a) Mother interviews : We had open-ended interviews with each mother. This included information of the family's daily life, with emphasis on the child, the quantity

and quality of parent-child communications, child's life history, intellectual stimulation, cognitive materials such as newspapers, magazines, children's books and records, and the mother's expectations for child's school achievement, etc.. This took about an hour for each case. Immediately after this, we administered the "Developmental Questionnaire" (Tsumri & Inaghe 1961) and the DEQ (Developmental Expectation Questionnaire). We also asked the day care center teacher to complete the Developmental Questionnaire.

These interviews took place in another room of the day care center while we were administering other tests to the child.

- (b) Father interviews: The father's interview took place during the mother-child and grandmother-child interaction sessions. Fathers were asked about the quantity of communication with their children, the kind of intellectual stimulation, how they perceive their family's mother-child relationship, and philosophical views regarding children, etc.. It lasted about 25 minutes and all 21 fathers, except for one, enjoyed the interview.

(* The interviewers were the three authors and one graduate student assistant.)

3. Measurement of child competence: In order to get information about general intelligence, we administered the Takemasa-Binet Intelligence Test (one of the Japanese versions of Stanford Binet Test). For assessing linguistic abilities, we adopted the PPVT (Japanese version of the Peabody Picture Vocabulary Test, Tajima & Nagano 1974), tests of reading and writing skills, and three subtests from the ITPA (verbal expression, manual expression and grammatical closure). In addition, we administered the MFF (Matching Familiar Figures) test for preschoolers (portions of Kagan's MFF combined with portions of Wright's KRISP (The Kansas Reflection-Impulsivity Scale for Preschoolers)), and the TVM (Tactual Visual Matching) test of "Reflection-Impulsivity". Furthermore, tests of numerical ability, non-verbal intellectual ability (conservation of number and block design from the WISC), role taking and communication accuracy, and aspiration level were also administered.

From the mother we then obtain the child's DQ (Developmental Quotient), which concerns motor skills, exploratory behavior, social skills, everyday life customs, and language skills, after the interview with its mother.

(III) Method of Analysis of Caretaker-Child Interaction Process

The video-tapes of the three pairs of caretaker-child interaction process were the data which were analyzed here. We felt that for the analysis of these interactions in Japan it was probably insufficient to measure only the frequency of respective behaviors. We felt it was necessary to look at the nature of these interactions semantically and contextually, as well as sequentially, also taking care to examine the non-verbal code (Tajima & Miyake 1976). In order to do this, we used the following methods of analysis. First, we conducted a sequential analysis of the interaction process including both verbal and non-verbal behavior. This was done not from linguistic, but from semantic and functional points of view.

Secondly, with the intention of taking into account the dynamics of the interactions in their total form, we constructed behavioral ratings for both persons.

1. Interaction process analysis

The analysis of the sequential interaction process was carried out by dividing the verbatim transcriptions made from the VTR into two types of units. The first, called the Communication Unit(CU), expresses one meaningful unit among one's utterances or non-verbal behaviors. The second, the Interaction Unit (IU), can be calculated according to the ongoing context of the interaction. This IU originates at the point where a CU has evoked a response and terminates at the point where the topic (same context) either changes or ends.

One IU naturally contains one or more CUs and if the context of the utterances or actions have new or different meanings they are then treated as different CUs and IUs. All CUs are classified into nine categories :

- I . S (Statement)***SR (Report), SW (Will), TB (Teaching Behavior), AP (Applause), CR (Criticism), SM (Muttering to oneself)
- II . Q (Question)***WHQ (WH-Question), YNQ (Yes-NO Question), CNQ (Confirmative Question)
- III . D (Direction)
- IV . P (Proposal)
- V . R (Response)
- VI . E (Explanation)
- VII . A (Acceptance)***AR (Acceptive Response), AT (Tentative Acceptance)
- VIII . N (Negation)***NG (Negation), NR (Rejection)
- IX . U (Uncodable)

2. Behavioral ratings

Immediately after scrutinizing the video-tape records, two judges (the first author and a staff psychologist) independently rated the caretaker's behaviors on a 12-item scale and the child's behaviors on a 8-item scale. Both ratings were made on seven point scales. The following is the list of the items used.

(a) Caretaker's behaviors

1) Pressure for better performance, 2) Helpfulness, 3) Praisefulness, 4) Encouragement, 5) Ego-involvement, 6) Intrusiveness, 7) Nurturance, 8) Sensitivity to child's psychological states, 9) Constraint, 10) Collaboration, 11) Initiativeness, 12) Kind of stimulatory behaviors.

(b) Child's behaviors

1) Reflectiveness, 2) Persistency, 3) Independence, 4) Relaxation, 5) Originality, 6) Curiosity, 7) Responsivity to other's actions, 8) Resourcefulness.

RESULT

The two boys mentioned earlier and their parents and grandparents were the subjects of this study. Their ages were 4 : 4 (TH) and 4 : 0 (WM) at the beginning of the study. IQ and PPVT scores were 110 and 48 respectively for TH, compared with 83 and 26 (below the mean score of 36.4 on the PPVT for the larger Japanese samples of the same age) for WM. As far as this is concerned, the level of TH's mental development is apparently above the average, whereas that of WM is below the average. However, the DQ of the Developmental Questionnaire completed by a teacher indicated that there were no differences between the two (Table 2). Consequently, we could assume that the boys' behavioral development would

not be significantly different at the day care center.

	motor	explor- ative	social	life- habits	language
TH	131	98	76	87	76
WM	124	72	72	83	72

Table. 2 DQ as Estimated by the Teacher

Family structure for each child is summarized in Table-3. In regard to the education of the parents, TH's father dropped out of a university without taking a degree and the mother was a high school graduate. In contrast, both of WM's parents were junior high school graduates. However, WM's family members, especially the grand-parents, were younger than TH's. Furthermore, TH was third born and WM was first born.

TH	age	WM	age
father	37	father	34
mother	34	mother	27
sister	11	WM	4
brother	8	brother	2
TH	4	grandfather	61
grandfather	73	grandmother	59
grandmother	71		

Table 3. Members of Each Family

(I) Behavioral Ratings

The summarized figures of the behavioral ratings for both the children and caretakers are illustrated below (Fig. 1, 2, 3).

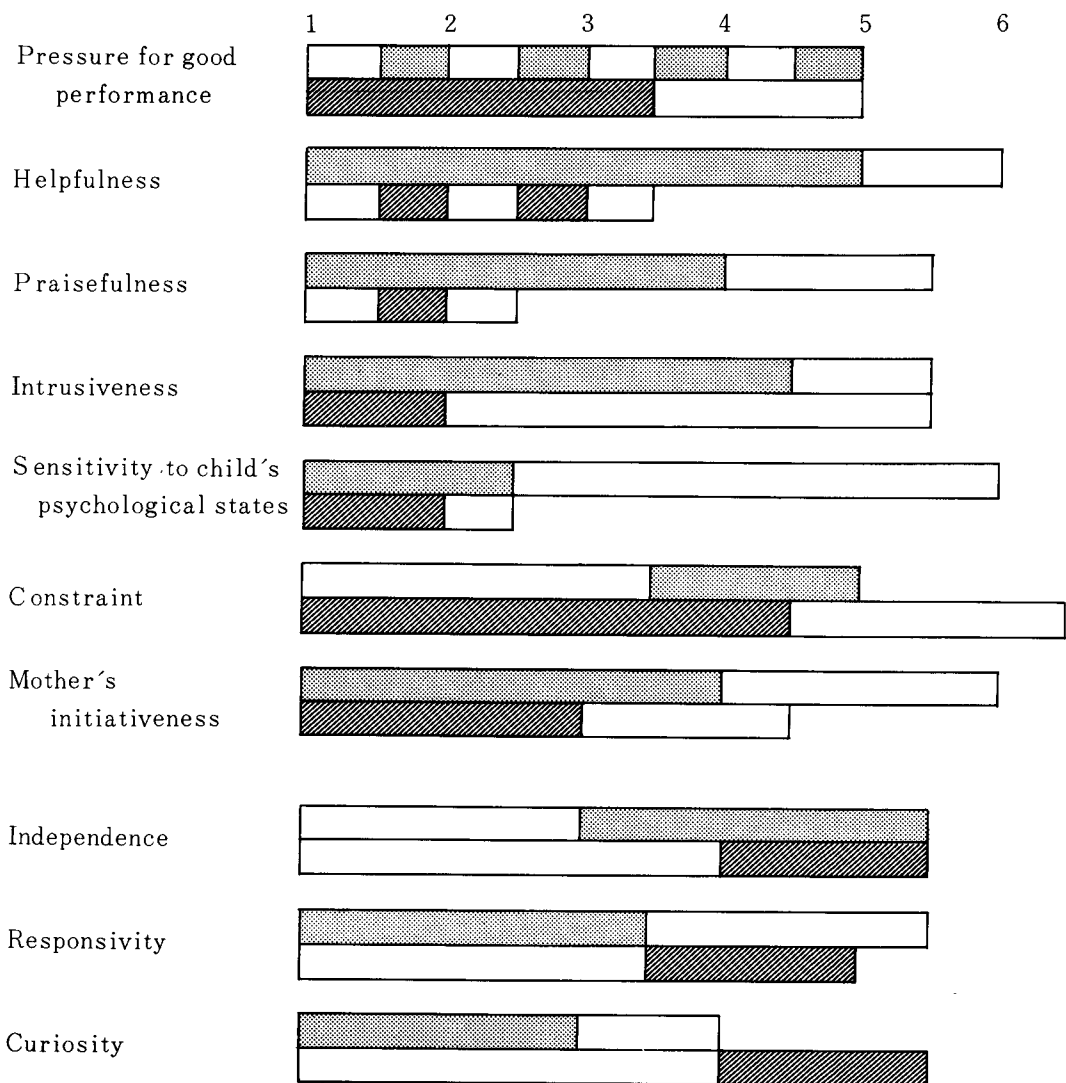


Fig.1. Mother-Child Behavior Ratings
 Upper bar represents TH.
 Lower bar represents WM.
 White bar represents 4yrs. and
 black 5yrs.

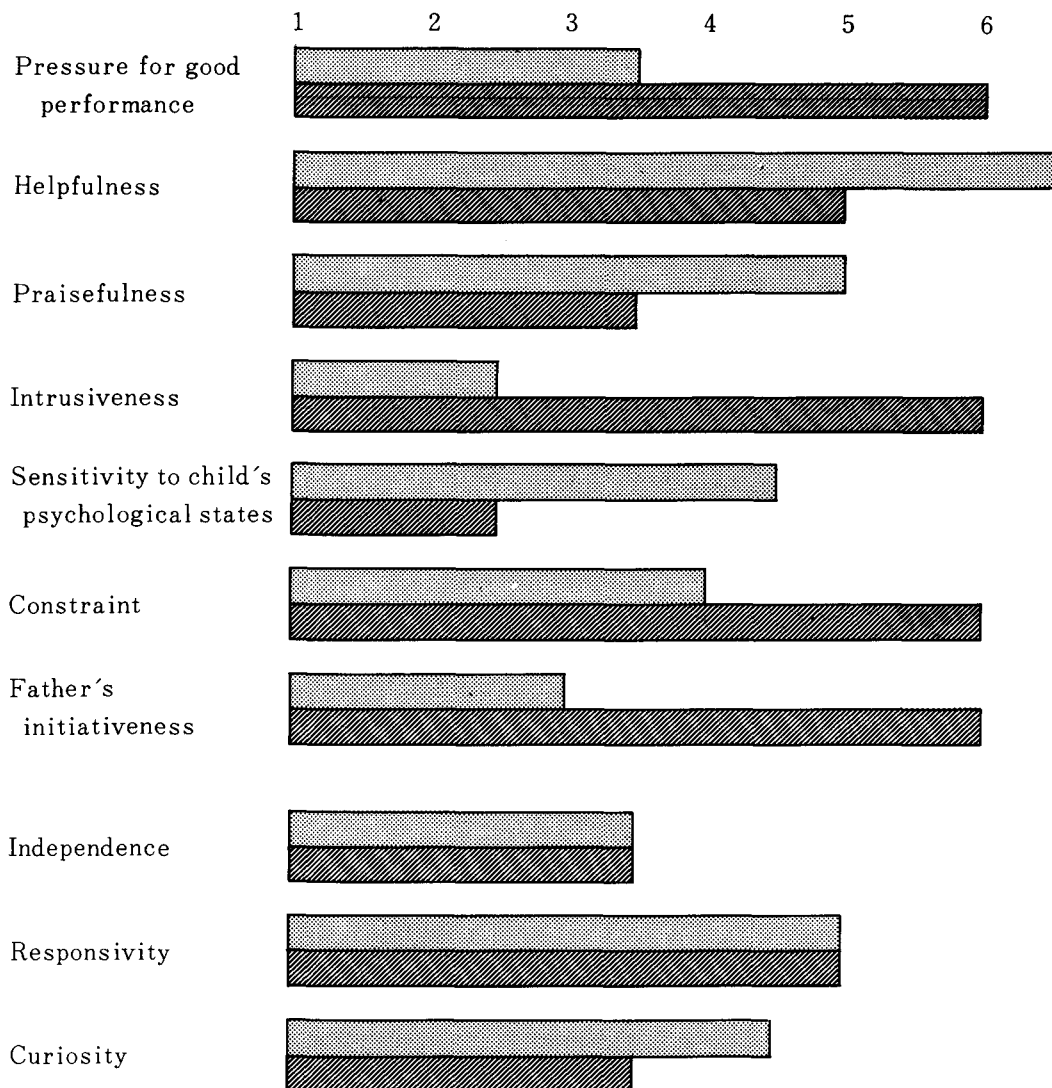


Fig.2. Father-Child Behavior Ratings

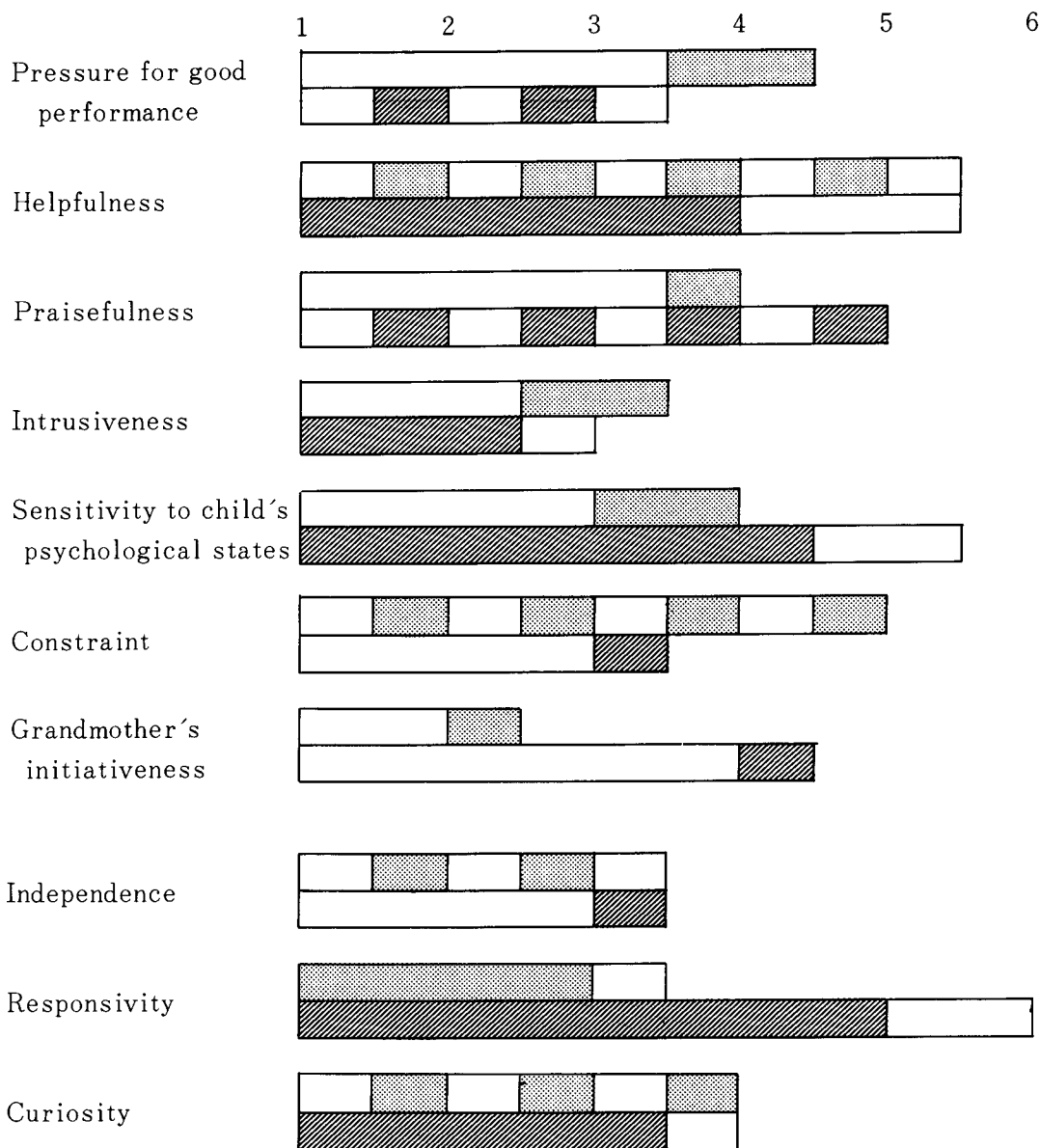


Fig.3. Grandmother-Child Behavior Ratings

The followings are the description of the parents' and the grandmother's behavioral characteristics as found in both cases.

1. TH *Mother-child* : The mother, toward her child of four, characteristically intervened in her four-year-old child's activities and was sensitive to child's internal or psychological state, especially his motivation and interest. The child appeared to be relatively dependent and responsive to mother's action.

However, toward her five-year-old child, the total profile of the mother's behavior seemed to be moderately stable with the exception that the score in "sensitivity" declines. This may be due to the child's shift toward more independence.

Father-child : Data concerning the father-child interaction was obtained only when the child was five years old. The father was inclined to let his child engage in activities freely (not to intrude into the child's activities), be highly helpful, and praise more frequently. Interaction seemed to proceed at the child's pace and the child appeared to be moderately responsive to the father.

Grandmother-child : Though there were a few changes in grandmother's behavior during the two years, we can probably conclude that she was less flexible and less in tune with her grandson's development. She was, however, consistently helpful, non-intrusive and again the interaction seemed to proceed at child's pace. But despite her efforts, the child seemed less responsive to her.

2. WM *Mother-child* : Toward her four-year-old child, the mother tended to be intrusive and rather strongly demanding for better performance. However, she seemed to be less helpful, praiseful and sensitive. It was observed that since her son was not particularly responsive to her, her action was less effective in guiding his behavior. The following year, though she was still rated relatively lower in terms of "sensitivity", "helpfulness" and "praisefulness", she became less intrusive and permitted the child to set his own pace. Accordingly, the child then became more responsive. The mother's behavioral change might be related to her son's development of independence and curiosity (see Fig. 3).

Father-child : The father was highly intrusive and placed a great deal of pressure on his son to assume his (the father's) pace. Although very helpful, he was not sensitive to his son. The father's actions gave rise to a response, but did not arouse his son's curiosity.

Grandmother-child : The grandmother's tendency to be praiseful and nonintrusive was relatively stable over the two years. When her grandson was four years old, she was more sensitive and helpful to him, compared with the mother.

To summarize, TH's parents were more sensitive, helpful and seemed to treat child with greater warmth. Although the grandmother did accept her grandson, she was less sensitive, helpful and warm.

In contrast, among WM's three family figures, the grandmother appeared to be most influential on the child. The mother seemed to be embarrassed to some extent in how to act with him. This was because she was not sensitive enough. We think both of the parents were rather strained in their relationships with their child and might not have been accustomed to playing with him.

(II) Interaction Process Analysis

1. Number of CUs and IUs.

As we glance over Table 4, we can soon observe that TH has apparently more CUs and IUs than WM, with the exception of the case of GM-C at 4 years old. We can postulate that TH may have experienced more transactions or information exchanges with his parents than WM.

	4-yrs.		5-yrs.	
	TH	WM	TH	WM
M-C	213 (79)*	89 (40)	210 (79)	135 (48)
F-C	—	—	274 (112)	145 (51)
GM-C	115 (62)	269 (106)	131 (70)	90 (28)

Table 4. Number of CUs and IUs

*Number of IUs

2. Length of the interaction chain :

In order to study the extent of an interaction sequence, which is supposed to be one kind of index of maintenance or progression in the interaction, we created these three interaction levels (After Hatano, et al. 1960).

LEVEL A (One's action does not evoke another dyad's response in each IU) :

A (Adult)→, C (Child)→

LEVEL B (One's action succeeded in evoking another's response, but that response does not draw out any response within the same IU) : A→C→, C→A→

LEVEL C (One's action is followed by another's response, and another's response accompanies the other's response, or a more continuous interchange occurs between the two) : A→C→A→, C→A→C→

Fig.4 indicates the percentage of A and C level interaction for TH and WM at the age of four. Fig.5 indicates the same kind of percentage of interaction at the age of five.

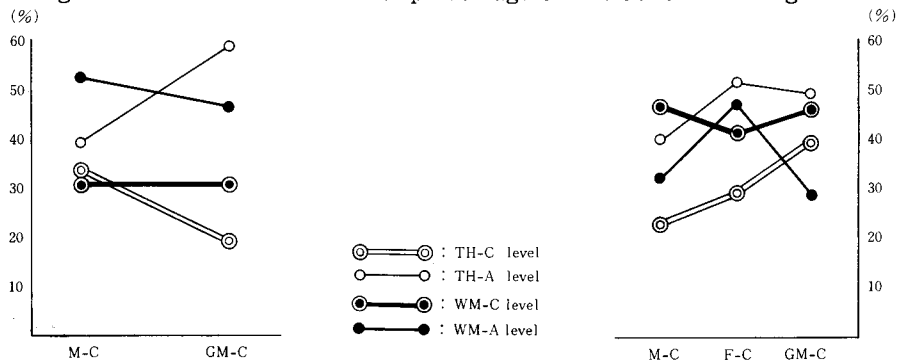


Fig.4. Percentage of A and C Level Interaction at 4 Years of Age. Fig.5. Percentage of A and C Level Interaction at 5 Years of Age.

Judged from the small number of CUs for WM's mother, it may be said that she succeeded in getting her son's responses only about 50 percent of the time when the child was 4 years of age. However, this picture was reversed at age five. That is to say, WM's mother was more successful in inviting her son's reaction than TH's mother. And it might be the case as well as for both fathers.

Furthermore, the largest differences between the two cases were in the GM-C interactions. We found it interesting that WM's grandmother was most skillful in inducing and maintaining interaction with the child among the three family figures, while, on the contrary, TH's grandmother was the worst.

However, we have not examined the qualitative nature of interaction sequences at this point. Therefore, we tried to observe the content of initial actions and partner's reactions within each IU, as well as the inductive power of the people involved.

3. Analysis of initial actions :

As initial actions tend to have a function of providing and changing topics, we think that the proportion of initial actions may be one of the indexes of initiativeness in the interaction process.

		INITIAL ACTIONS				
		Number		Content		Categories of first responses.
		Number of initial actions.	Number of initial actions which induced the partner's responses.	Categories of initial actions.		
Case of TH	Four yrs.	M	46(58.2*)	25(54.3*)	SR·AR>CNQ>R	AR>CNQ>R
		C	33(41.8)	22(66.7)	SR>YNQ>WHQ	AR>SW·E>CNQ
	Five yrs.	M	40(50.6)	19(47.5)	TB·WHQ>SR	WHQ·AR>TB>R>NG
		C	39(49.4)	21(53.9)	SR>SM>YNQ	E>SR>CNQ·R>AR
	Four yrs.	GM	37(59.7)	12(32.4)	SR>YNQ>WHQ	CNQ>AR>WHQ
		C	25(40.3)	13(52.0)	SR>D>YNQ>CR	NR·R>E
	Five yrs.	GM	36(51.4)	25(69.4)	WHQ>YNQ>SR>CR	AR>CNQ>TB·WHQ
		C	34(48.6)	17(50.0)	D>SR>SW	NR>NG·R>E
	Five yrs.	F	57(50.9)	17(29.8)	SR·SM>YNQ·P	CNQ·AR>R·E
		C	55(49.1)	35(63.6)	SR>WHQ>SW>YNQ	AR>SR
Case of WH	Four yrs.	M	14(35.0)	8(57.1)	WHQ>D	AR>E
		C	26(65.0)	11(42.3)	SR>SW·SM>WHQ>D	E>CNQ
	Five yrs.	M	12(25.0)	9(75.0)	SR·WHQ>TB	AR>WHQ>CNQ
		C	36(75.0)	25(69.4)	SW>SR>SM>WHQ>YNQ	YNQ·CNQ>WHQ
	Four yrs.	GM	45(42.5)	21(46.7)	SR>SW·WHQ>YNQ	AR>R>YNQ·E
		C	61(57.5)	36(59.0)	SR>SM>YNQ>WHQ	CNQ>YNQ·R>E·AR
	Five yrs.	GM	16(57.1)	9(56.3)	SM·WHQ>P	AR>CNQ
		C	12(42.9)	10(83.3)	SR>SM	R·E>AR
	Five yrs.	F	44(86.2)	21(47.7)	D>YNQ>SR·CR	NR
		C	7(13.8)	6(85.7)	SM·WHQ>YNQ	CNQ>AR>SR>YNQ

Table 5 Number and Content of Initial Actions.

*, **: Each percentage

***: Frequencies of Each Category.

The figures in the second row in Table 5 represent the number of initial actions which induce the partner's responses, and may express inductive power or effectiveness upon partner. In addition, we think, the categories of initial actions and first responses may express certain qualitative aspects of the interaction styles of each pair.

If we look at Table 5, in TH's case we will find that the caretakers took the initiative in interactions when the child was four years old but the proportion of initial actions became almost 50-50 at the age of five. In WM's case, it is interesting that the proportion of initial actions shared by the mother was very low, while those shared by the father were extraordinarily high. His grandmother's proportion of initial actions fall between that of mother and father.

Looking at the second column, the percentages of the child's initial actions which invited the others' response were generally higher for the case of TH than those of the three caretakers with the exception of the GM-C pair at five years of age. We take this as indicating that the three caretakers were generally responsive or reactive to their son, despite his lack of responsiveness.

In contrast to this, WM's inductive power was generally higher than that of TH's. This may be partly the result of differences in the number of IUs. It is probably safe to say that each action gradually meshed into the partner's actions.

DISCUSSION

First, let us summarize the interaction style of the two cases. In general, TH experienced a larger number of interactions with family figures. His family members were more reactive to him than he was to them. When TH was five, his mother tended to begin the interaction with SR (Report), Question (CNQ,WHQ) and TB (Teaching Behavior). At four years of age he had used more questions, but in the following year the questions decreased and SM (Muttering to oneself) suddenly appeared. This change is probably reflected in the behavioral ratings of "independence". TH's father was characterized by using more SRs. Though he also used SMs frequently, this might be interpreted to indicate that he was absorbed in the play for his own satisfaction.

The interactional style of TH's grandmother, we feel, was different from parents, with the grandmother relying heavily on questions. However, at the age of five, a more noteworthy fact, in accordance with a decrease in the "responsivity" score of ratings, is that her grandson tended to respond with NR (Rejection) or NG (Negation). He was resistant and tended to direct his grandmother, while at the same time she was ineffective in influencing her grandson.

In regard to the amount of interaction, WM's family figures provided considerably less except the grandmother toward her grandson at 4 years of age. The mother generally began interactions with questions and directions during the first year of our research. Though her actions were at first limited, she later became more responsive to her son's actions. In contrast, the boy's father was very directive and took the initiative in interaction. This is quite in accord with the picture provided by the ratings. The grandmother might have triggered active interaction by a process of non-directive acceptance.

These differences in parental interactional style are similar to the open-ended interview data. The estimated amount of time or number of opportunities for daily contact by the

parents with their son were greater in the case of TH than WM. Also both parents of TH were eager to stimulate their son to talk and provide with story books and school related toys or materials.

In contrast, WH's father said that he rarely spoke to or played with his son and had never read any books to him. The differences in contact between the two families might be reflected in the high degree of constraint in WM's parents. And the differences between the two grandmothers can probably be explained in the same way. WH's grandmother, compared with TH's, was more active and flexible. This may have been due to the age difference (59 vs. 71) between them.

Lastly, the differences in interactional style between the two cases of parents may be related to the child's birth order and the kind of expectations held by parents. That is to say, as TH was the third born, he did not represent an heir to his family. His parents expect him to be a college graduate and a white collar worker.

WM's parents, on the other hand, expect him to become the head of the family since he is the first born son. They feel farming does not require a highly academic career. The birth order, then, and the kind of expectations regarding the child held by parents apparently influence the interactional style.

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