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## PROSOCIAL BEHAVIOR AND ITS CORRELATES IN NURSERY SCHOOL CHILDREN

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In recent years, a few reports on prosocial behavior in Japanese children have appeared (e.g., Hirota & Taki, 1979 ; Kawashima, 1980) which are focused on sharing and reward donating behavior. However, up to now, the following questions have been unanswered. With what frequency do prosocial behaviors appear in the daily interactions of Japanese children among their peer group? What kind of children tend to demonstrate prosocial behavior? And what personal characteristics contribute to this behavior?

Numerous studies have been done on prosocial behavior patterns in the United States, and several of these have been helpful in our study (Mussen & Eisenberg-Berg, 1977 ; Staub, 1978, 1979). In this report, we will examine several personality and social cognition variables in relation to prosocial behavior among Japanese children.

In looking back on the recent history of these investigations on prosocial behavior, we find that many workers have studied the relation between prosocial behavior and other facets of peer interactions or personality variables (Barrett & Yarrow, 1977 ; Friedrich & Stein, 1973 ; Murphy, 1937 ; Rutherford & Mussen, 1968 ; Yarrow & Waxler, 1976). In their investigations of the relation between aggression and prosocial behavior, Yarrow and Waxler (1976) found that the relation depended upon the absolute level of aggression: for boys below the mean on aggression, there was a positive and significant correlation ; in contrast, for boys above the mean on aggression, there was a negative correlation. If the aggression were manifested rather infrequently, the subject tended to be more assertive than hostile. It was reported that this type of behavior would most likely be directed toward associates with prosocial behavior. The findings of Friedrich and Stein (1973) also suggested that some amount of courage in interpersonal relationships might facilitate some forms of prosocial behavior. Bryan (1975) asserted that the rendering of aid may require an assertive or expressive disposition. Up to the present, these hypothesis have not been applied to Japanese children ; therefore, it is valuable for us to examine the relation between prosocial behaviors and other facets of behavior in peer interactions.

The social cognitive variables in relation to prosocial behavior have also attracted much interest. Many theorists have conjectured that social cognition such as person perception, ability to understand the perspectives of others or to recognize the intentions, motives and feelings of others have comprised the cognitive basis of altruistic behavior in children (Hartup, 1970 ; Hoffman, 1975 ; Mussen & Eisenberg-Berg, 1977 ; Rothenberg, 1970). However, the empirical data regarding the hypothesized relations between social cognition and prosocial behavior are somewhat equivocal. For example, Buckley, Siegel and Ness (1979), Johnson (1975a,b), Rothenberg (1970), and Rubin and Schneider (1973) have reported that there is a significant and positive relationship between role-taking and prosocial

behavior. Iannotti (1978) found that training in role-taking significantly increased the sharing behavior of 6-year-olds. Levin and Hoffman (1975) found no relation between empathy and cooperation in 4-year-olds. Emler and Rushton (1973), Rushton and Wiener (1975), and Waxler, Yarrow and Smith (1977) also found no relation between role-taking and prosocial behavior. We may question, at this point, how these results should be interpreted. Staub (1979) suggested that understanding the perspective and feeling of others does not necessarily guarantee a prosocial response to the persons in distress. Furthermore, Barrett and Yarrow (1977) reported that social cognitive abilities may play an indirect, mediating role rather than a direct role in prosocial behavior. They found that inferential ability per se did not correlate with prosocial behavior; however, it was the level of inferential ability which determined the extent to which information about a child's interpersonal assertiveness could be useful in predicting his prosocial behavior. That is, there was a significant and positive correlation between prosocial behavior and assertiveness only in high inferential ability children. These findings suggest that although timid, nonassertive children may be sensitive toward and understanding of others' feelings in distress, they may not necessarily be led to prosocial intervention. Therefore, unless we take personality variables such as assertiveness or timidity into consideration, we may not be able to obtain a significant correlation between prosocial behavior and social cognition, or the predictability of social cognition may be limited. In fact, as previously mentioned, several workers have found a negative or no correlation between prosocial behavior and social cognition.

With these various findings in mind, we have focused our study on the simultaneous contribution of various social cognitive abilities and personality variables in an effort to test our hypothesis. In this study, we have designated perspective-taking and empathy ability as social cognition.

We have observed a variety of social exchanges in nursery school children including prosocial behavior, aggressive, assertive, and affective neutral interactions, and we have measured social cognition using two perspective-taking tests and one empathy test.

## METHOD

### *Subjects*

The subjects in this study were 30 boys and 30 girls aged 56-78 months. All of the children attended classes at a public nursery school.

### *Observations*

Each child was observed for 50 minutes in 5 10-min samplings of behavior during free play sessions spaced over a period of 4 weeks. Seven persons were involved in the observations. Each observation sampling consisted of 30 20-sec units, each unit of which was divided into 5-sec observing periods and 15-sec recording periods. The observer checked the categories of behavior exhibited by the child during the observing period. The categories of behavior observed included assertiveness, aggression, social acts, and prosocial behavior. These categories are described briefly below.

Assertive behavior consists of two subcategories: directiveness and self-assertion. Directiveness refers to the child's attempts to influence the activities of others, for example, by giving commands, prohibitions, and/or suggestions. Self-assertion is defined as

the attempt to assert oneself and includes self-assertion, avoidance to disturbance, boasting, or underestimating others.

Aggression is thus reflected in the child's intention to injure others, to make them feel bad or to disturb others. The behavior manifests itself in hitting, abuse, teasing, destruction of or taking away another's belongings, or treating others as outsiders.

Social acts are also divided into two subcategories: conversation and group activity. If the children interacted verbally with others, it was coded as conversation. Group activities was coded when the children engaged in positive social interactions with peer, for example, in role playing, games, cooperative activities, or simple play activities.

Prosocial behavior is defined as the attempt to fulfill another person's need for physical or emotional support, and is includes four subcategories: comforting, sharing, helping, and self-sacrificing. Comforting refers to behavior which expresses sympathy in physical or in verbal terms or which tries to make another person feel better when in distress. Sharing is demonstrated by the child's giving away or allowing others the temporary use of materials belonging to or being used by himself. Helping is behavior to assist another person physically or to give information, or help to another in some task. Self-sacrificing is the attempt to control one's wants for the sake of another person or the group.

### *Cognitive Measures*

#### A. General cognitive measures

Diacopy: A picture of a rhombus was presented to the child, and he was instructed to copy it exactly. The child was allowed two trials, and the better drawing was scored according to the following criteria : (1) if the figure was closed ; (2) if it had four vertical angles ; (3) if it had four straight lines ; (4) if it was symmetrical on the right and left sides ; (5) if it was symmetrical on the upper and lower parts. The scores ranged from 0-5.

Picture completion: An incomplete line drawing of doll was presented to the child, and he was asked to complete it. The supplement numbers were used as picture completion scores. However, if the child drew the patterns of dresses, accessories, or distorted body parts, they were not counted.

Word understanding: The task in the WIPPSI test was used. This task was begun at problem 9, and raw scores were taken.

Conservation of number: The materials were seven black and seven white chips. This test consisted of three sessions. In the first session, two colors of seven chips each were placed one above other so that the two rows were of equal length. Then the child was asked if the number of black and white chips was the same or not. A correct answer was given a score of 1 and an incorrect answer was given a 0. Next, the tester extended the intervals of the white chips to 3 cm, and the child was asked the same question and the reason. In the final session, the tester shortened the intervals of the white chips to 0.5 cm, and the child was asked the same question as in the second session. The answers were assigned a score of 2 to correct answer and rational reasoning, 1 to correct answer but no or irrational reasoning, and 0 to incorrect answer. The total scores were used as the conservation score, which ranged from 0-5.

#### B. Social cognition measures

Hide-and-seek game: The hide-and-seek game developed by Light (1979) were used.

The tester's instructions were the following. "This is a game of hide-and seek. There are two dolls, one is mine and the other is yours. First, my doll is going to stand over here (position 1 in figure 1) so that she cannot see your doll. Now, you find your doll a good hiding place." The numbers in figure 1 indicate in which order and positions the seeker doll was placed. The errors were considered major and minor, and they were defined according to Light (1979, p. 51) as follows. Minor errors included careless placement (e.g., leaving an arm or foot protruding), placement behind a car or tree, and blind placement. Blind placements referred to the situation where the hidden doll

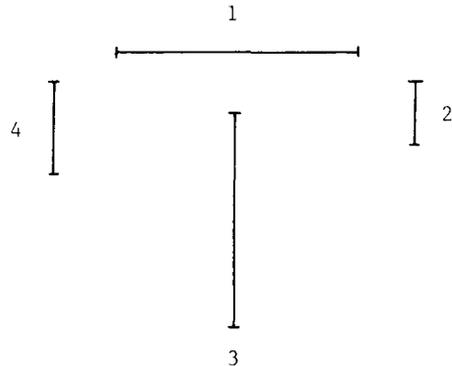


FIGURE 1 Positions of seeker doll and obstacles in the hide-and-seek game.

was not visible to the seeker doll from her initial position only because it was masked by some objects approximately equidistant between the two. As soon as the seeker doll began to move the blind placements came into full view. We rated a minor error as 1. A major error meant that the hidden doll became immediately visible to the seeker doll when she was turned around, and we rated it as 0. Finally the rational hidden placement as 2. The scores ranged from 0-8.

Perspective-taking test: This task was similar to that used by Kurdek (1980). The child was given a revolving tray on which three different dolls were glued; the tester had an identical tray. While seated opposite the child, the tester successingly rotated his tray to each of four positions (0,90,270, and 180 degrees from the starting position). After each turn, the child was instructed to turn his tray so that he could see the doll the same way as the tester could. Correct responses were scored as 1, and the total scores ranged from 0-4.

Empathy test: The child was given two sets of 4 pictures each. Each picture showed animals at work and expressing an emotion. The tester asked the child to explain what the animal in each picture was doing. The first picture in each set was for practice; the explanation for the remaining six pictures were scored. When the child expressed in terms of the animal's feeling or inner state, we regarded it as an empathetic response. Children who did not give empathetic responses were asked the probe 1 question; "What is he feeling?" Probe 2 question was asked when the probe 1 question did not yield the desired response: "Is he angry?" "Is he happy?" and so on. We adopted two scoring systems, one for spontaneous explanations (empathy A system) and the other for responses to the spontaneous explanations and the two probe questions (empathy B system). Empathetic responses were given 1 point in the empathy A system. The total scores of empathy A system ranged from 0-6. In empathy B system, we gave 3 points to spontaneous empathetic responses, 2 points to empathetic responses to probe 1 question, 1 point to correct responses to probe 2 question, and 0 to no or incorrect responses to any questions. The total scores of empathy B system ranged from 0-18.

TABLE 1  
Observational Categories: Means and Median

| Category                 | Mean  | SD    | Median | Range |
|--------------------------|-------|-------|--------|-------|
| Comforting               | 0.47  | 0.98  | 0.17   | 0-5   |
| Sharing                  | 0.25  | 0.31  | 0.06   | 0-6   |
| Helping                  | 1.82  | 3.08  | 0.80   | 0-19  |
| Self-sacrificing         | 0.07  | 0.31  | 0.03   | 0-2   |
| Total prosocial behavior | 2.57  | 4.05  | 1.39   | 0-26  |
| Aggression               | 2.72  | 3.27  | 1.80   | 0-15  |
| Conversation             | 21.72 | 11.98 | 19.70  | 1-58  |
| Group activity           | 42.38 | 23.65 | 40.50  | 1-116 |
| Directiveness            | 2.98  | 3.24  | 1.94   | 0-12  |
| Self-assertion           | 2.75  | 3.35  | 1.83   | 0-18  |
| Total assertion          | 5.73  | 5.29  | 4.21   | 0-27  |

## RESULTS

### *Observational Data*

The mean scores for the various observational categories are summarized in table 1. In the 50 minutes periode of behavior observation, prosocial behaviors were expressed by 63 % of the children ( helping-55 %, sharing-10 %, comforting-25 %, self-sacrificing-5 % ). Acts of helping occurred on the average 1.82 times. Since acts of sharing, comforting and self-sacrificing occurred relatively infrequently (sharing-0.25 times, comforting-0.47 times and self-sacrificing-0.07 times), they were combined into a single category with helping. Prosocial behavior occurred a total of 2.57 times. Age did not appear to affectable data in the 4-6 year old groups; that is, neither helping nor the total amount of prosocial behavior was correlated with age (  $r = +.14$  and  $r = +.17$  respectively ). However, there were significant differences according to sex. Helping behavior was demonstrated by the girls an average of 2.70 times, by the boys, 0.93,  $t(30) = 2.30$   $p < 0.03$ . The total prosocial behavior shown by the girls was 3.77, by the boys 1.37,  $t(30) = 2.39$   $p < 0.03$ .

Seventy percent of the children interacted aggressively; aggressive behavior occurred an average of 2.72 times. Although there was no difference according to age ( $r = +.21$ ), there was a difference according to sex. The average occurrence of aggressive behavior by the boys was 3.93 and by the girls 1.50,  $t(30) = 3.08$   $p < 0.005$ .

Group activity and conversation increased with age ( $r = +.28$ ,  $r = +.26$  respectively). The boys interacted verbally more than the girls did: the boys, 24.20, the girls, 18.20,  $t(30) = 1.99$   $p < 0.06$ . Also the average occurrence of group activity by the boys was 46.40 and by the girls, 38.37,  $t(30) = 1.32$   $p < 0.10$ .

Moreover, self-assertion, directiveness, and the total scores of assertive behavior did not correlate with age ( $r = -.05$ ,  $r = +.18$ , and  $r = +.08$  respectively). The boys expressed directive behavior more than the girls did: the boys, 3.77, the girls, 2.20,  $t(30) = 1.92$   $p < 0.06$ ; however, there was no difference in self-assertion between the sexes. The total scores of assertive behavior were: the boys, 2.60, the girls, 2.90,  $t(30) = 0.34$  in self-assertion, and

the boys, 6.37, the girls, 5.10,  $t(30)=0.93$  in the total scores of assertive behavior.

### *Social Cognition Measures*

The mean scores for the cognitive measures are shown in table 2. All of the general cognitive measures correlated with age: age with diacopy ( $r=+.46$ ), picture completion ( $r=+.31$ ), word understanding ( $r=+.44$ ), and conservation of number ( $r=+.41$ ). On the

TABLE 2

Mean Score of Cognitive Measures

| Category               | Mean  | SD   |
|------------------------|-------|------|
| Diacopy                | 2.72  | 1.26 |
| Picture completion     | 5.80  | 2.43 |
| Word understanding     | 4.60  | 2.40 |
| Conservation of number | 1.33  | 1.12 |
| Hide and seek game     | 4.67  | 1.82 |
| Perspective taking     | 1.97  | 1.58 |
| Empathy A              | 2.48  | 1.48 |
| Empathy B              | 13.57 | 2.35 |

other hand, there was no significant correlation between age and social cognitive measures except in the empathy B ( $r=+.31$ ). There were no sex differences except in the hide-and-seek game test; the mean score for boys in this test was 5.17 and for the girls 4.33,  $t(30)=1.82$   $p<0.08$ .

### *Correlations between Prosocial Behavior and Other Facets of Behaviors*

The correlation between prosocial behavior and other facets of behavior in peer interactions are shown in table 3. Directive behavior correlated significantly to the total prosocial behavior recorded for the total subjects ( $r=+.27$ ). Group activity correlated with helping ( $r=+.26$ ) and the total prosocial behavior ( $r=+.25$ ). However, aggressive behavior did not correlate with prosocial behavior. The correlational patterns differed according to sex. Although there was no correlation for the boys, there was a significant correlation for the girls; directiveness-helping ( $r=+.51$ ), total prosocial behavior ( $r=+.56$ ); total assertions-helping ( $r=+.31$ ), total prosocial behavior ( $r=+.34$ ); group activity-helping ( $r=+.62$ ), total prosocial behavior ( $r=+.63$ ). Aggression did not correlate well with prosocial behavior in either sex. In one test, we divided the subjects at the median of frequency of exhibited aggression, and computed the correlations between aggression and prosocial actions for each subsample. Nevertheless, we were unable to find any significant correlation between the two.

TABLE 3

Correlations between Prosocial and Other Social Behavior

|                 | Helping         |                 |                | Total prosocial behavior |        |      |
|-----------------|-----------------|-----------------|----------------|--------------------------|--------|------|
|                 | Total<br>(n=60) | Girls<br>(n=30) | Boys<br>(n=30) | Total                    | Girls  | Boys |
| Aggression      | -.14            | -.03            | -.05           | -.05                     | -.08   | .10  |
| Directiveness   | .21             | .51**           | .07            | .27*                     | .56**  | .10  |
| Self-assertion  | .07             | .10             | -.05           | .06                      | .14    | -.17 |
| Total assertion | .17             | .31°            | .04            | .20                      | .34°   | .01  |
| Conversation    | -.06            | -.06            | .17            | -.04                     | -.01   | .18  |
| Group activity  | .26°            | .62***          | -.10           | .25°                     | .63*** | -.22 |

° .05 < p < .10, \*p < .05, \*\* p < .01, \*\*\* p < .001 (two tailed test)

TABLE 4  
Correlations between Prosocial Behavior and Cognitive Measures

|                       | Helping         |                 |                | Total prosocial behavior |       |       |
|-----------------------|-----------------|-----------------|----------------|--------------------------|-------|-------|
|                       | Total<br>(n=60) | Girls<br>(n=30) | Boys<br>(n=30) | Total                    | Girls | Boys  |
| Diacopy               | -.10            | -.08            | -.12           | -.08                     | -.03  | -.19  |
| Picture completion    | .17             | .26             | -.04           | .22*                     | .27   | .09   |
| Word understanding    | .03             | -.20            | .49**          | .10                      | -.07  | .51** |
| Consevation of number | -.15            | -.07            | -.15           | -.16                     | -.11  | -.13  |
| Hide and seek game    | -.18            | -.25            | .00            | -.18                     | -.16  | -.09  |
| Prespective taking    | -.00            | -.07            | -.06           | .06                      | -.05  | .10   |
| Empathy A             | .11             | .12             | -.00           | .14                      | .15   | .02   |
| Empathy B             | .10             | .09             | .04            | .11                      | .11   | .03   |

\* .05 < p < .10, \*\* p < .01 (two tailed test)

#### *Correlations between Prosocial Behavior and Cognitive Measures*

Table 4 shows the correlation between prosocial behavior and cognitive measures. It is clear the table that there was no significant correlation observed between them except in the picture completion test for all subjects and the word understanding for the boys. The social cognition measures did not correlate with the prosocial behavior at all.

#### *Interactions between Assertiveness and Social Cognition*

To test for the interaction between assertiveness and cognition, the correlations between assertiveness and prosocial behavior were determined separately for the groups high and low in each social cognition measures. And the correlations between social cognition and prosocial behavior were computed separately for the groups high and low in the assertiveness, too. The results of this analysis are shown in tables 5 and 6.

In the high ability group in the hide-and-seek game test, assertiveness did not correlate with prosocial behavior at all, but it correlated with prosocial behavior in the low ability group: total prosocial behavior with directiveness ( $r = +.35$ ) and with total assertions ( $r = +.36$ ) for all subjects; helping with directiveness ( $r = +.76$ ) and total assertions ( $r = +.71$ ) and total prosocial behavior with directiveness ( $r = +.82$ ), with self-assertion ( $r = +.44$ ) and with total assertions ( $r = +.80$ ). Although this result was contrary to our expectations, the results in the perspective-taking test and the empathy test were according to our hypothesis. In the perspective-taking test, the high ability group showed the following : directiveness correlated with total prosocial behavior for the total-samples ( $r = +.33$ ) and helping and total prosocial behavior for the girls ( $r = +.57$ ,  $r = +.62$  respectively). There was no correlation in the low ability group. In the empathy A system, the high ability group showed the following ; directiveness correlated with total prosocial behavior for the total samples ( $r = +.34$ ) and with helping and total prosocial behavior for the girls ( $r = +.61$ ,  $r = +.59$  respectively). In contrast, the low ability group showed a negative correlation between self-assertion and helping for the total samples ( $r = -.34$ ) and for the girls ( $r = -.46$ ). In the empathy B system, the high ability group showed a correlation between directiveness and total assertion and helping for the total samples ( $r = +.30$ ,  $r = +.32$  respectively) and for the girls ( $r = +.63$ ,  $r = +.43$ ), and they also correlated with

TABLE 5  
Correlations between Assertiveness and Prosocial Behavior for  
Children at Two Levels of Social Cognitive Ability<sup>a)</sup>

|                                | Helping |        |      | Total prosocial behavior |        |      |
|--------------------------------|---------|--------|------|--------------------------|--------|------|
|                                | Total   | Girls  | Boys | Total                    | Girls  | Boys |
| High hide and seek game (n=27) | (n=12)  | (n=15) |      |                          |        |      |
| Directiveness                  | .21     | .38    | .14  | .16                      | .39    | .07  |
| Self-assertion                 | .06     | .03    | .06  | -.00                     | -.11   | -.02 |
| Total assertion                | .15     | .17    | .15  | .08                      | .09    | .04  |
| Low hide and seek game (n=33)  | (n=18)  | (n=15) |      |                          |        |      |
| Directiveness                  | .23     | .76*** | -.19 | .35**                    | .82*** | .13  |
| Self-assertion                 | .13     | .35    | -.28 | .18                      | .44°   | -.40 |
| Total assertion                | .25     | .71*** | -.33 | .36*                     | .80*** | .12  |
| High perspective taking (n=34) | (n=20)  | (n=14) |      |                          |        |      |
| Directiveness                  | .26     | .57**  | -.21 | .33°                     | .62**  | .02  |
| Self-assertion                 | .09     | .10    | -.12 | .08                      | .10    | -.29 |
| Total assertion                | .21     | .33    | .13  | .25                      | .35    | -.14 |
| Low perspective taking (n=26)  | (n=10)  | (n=16) |      |                          |        |      |
| Directiveness                  | .13     | .08    | .28  | .05                      | .08    | .19  |
| Self-assertion                 | .01     | .20    | -.03 | .01                      | .29    | -.10 |
| Total assertion                | .08     | .26    | .13  | .04                      | .35    | .03  |
| High empathy A (n=30)          | (n=15)  | (n=15) |      |                          |        |      |
| Directiveness                  | .29     | .61**  | .00  | .34°                     | .59*   | .20  |
| Self-assertion                 | .16     | .18    | .03  | .12                      | .15    | -.09 |
| Total assertion                | .29     | .42    | .02  | .29                      | .39    | .11  |
| Low empathy A (n=30)           | (n=15)  | (n=15) |      |                          |        |      |
| Directiveness                  | -.12    | -.16   | .03  | -.02                     | .24    | -.05 |
| Self-assertion                 | -.34°   | -.46°  | -.24 | -.23                     | -.20   | -.32 |
| Total assertion                | -.30    | -.38   | -.10 | -.15                     | -.03   | -.20 |
| High empathy B (n=33)          | (n=18)  | (n=15) |      |                          |        |      |
| Directiveness                  | .30°    | .63**  | -.04 | .36*                     | .63**  | .13  |
| Self-assertion                 | .19     | .18    | .07  | .15                      | .14    | -.04 |
| Total assertion                | .32°    | .43°   | .00  | .32°                     | .40°   | .10  |
| Low empathy B (n=27)           | (n=12)  | (n=15) |      |                          |        |      |
| Directiveness                  | -.15    | -.08   | -.08 | -.07                     | .24    | -.22 |
| Self-assertion                 | -.41*   | -.41   | -.30 | -.29                     | -.14   | -.39 |
| Total assertion                | -.33°   | -.30   | -.24 | -.22                     | .01    | -.38 |

° .05 < p < .10, \*p < .05, \*\*p < .01, \*\*\*p < .001 (two tailed test)

a) The median scores used to divide children into low and high social cognition groups.

total prosocial behavior for the total samples ( $r = +.36$ ,  $r = +.32$ ) and for the girls ( $r = +.63$ ,  $r = +.40$ ). For the low ability group, there were negative correlations between helping and self-assertion and total assertion for the total samples ( $r = -.41$ ,  $r = -.33$  respectively).

We also examined the relation between assertiveness and social cognition from the point of view of differences in the degree of assertiveness (table 6). As table 6 shows, the highly assertive children showed no correlation between social cognition and prosocial behavior. Whereas the low assertive children showed negative correlations between them.

TABLE 6  
Correlations between Social Cognition and Prosocial Behavior  
for Children at Two Levels of Assertiveness<sup>a)</sup>

|                               | Helping |        |      | Total prosocial behavior |         |       |
|-------------------------------|---------|--------|------|--------------------------|---------|-------|
|                               | Total   | Girls  | Boys | Total                    | Girls   | Boys  |
| High directiveness (n=34)     | (n=13)  | (n=21) |      |                          |         |       |
| Hide and seek game            | -.13    | -.21   | .02  | -.17                     | -.19    | -.11  |
| Perspective taking            | .11     | .19    | -.08 | .24                      | .25     | .18   |
| Empathy A                     | .10     | .12    | -.05 | -.13                     | .12     | .00   |
| Empathy B                     | .15     | .20    | .03  | -.18                     | .20     | .12   |
| Low directiveness (n=26)      | (n=17)  | (n= 9) |      |                          |         |       |
| Hide and seek game            | -.41*   | -.34   | -.09 | -.28                     | -.26    | .14   |
| Perspective taking            | -.43*   | -.78** | -.13 | -.53**                   | -.81*** | -.44  |
| Empathy A                     | .08     | -.05   | .36  | -.06                     | .02     | -.08  |
| Empathy B                     | -.01    | -.21   | .03  | -.09                     | -.15    | -.43  |
| High self-assertion (n=33)    | (n=15)  | (n=18) |      |                          |         |       |
| Hide and seek game            | -.10    | -.17   | .18  | -.15                     | -.22    | .19   |
| Perspective taking            | .03     | .16    | -.27 | .07                      | .15     | -.21  |
| Empathy A                     | .18     | .12    | .12  | .21                      | .14     | .17   |
| Empathy B                     | .17     | .10    | .14  | .17                      | .09     | .17   |
| Low self-assertiveness (n=27) | (n=15)  | (n=12) |      |                          |         |       |
| Hide and seeking game         | -.45*   | .43    | -.39 | -.29                     | -.00    | -.53° |
| Perspective taking            | -.09    | -.69** | .46  | .05                      | -.63*   | .63°  |
| Empathy A                     | -.09    | .13    | -.36 | -.05                     | .24     | -.34  |
| Empathy B                     | -.09    | -.05   | -.16 | -.05                     | .11     | .18   |
| High total assertion (n=28)   | (n= 9)  | (n=19) |      |                          |         |       |
| Hide and seek game            | -.16    | -.32   | .02  | -.23                     | -.38    | -.09  |
| Perspective taking            | .13     | .19    | .09  | .22                      | .16     | .15   |
| Empathy A                     | .09     | .18    | -.07 | .13                      | .07     | -.04  |
| Empathy B                     | .20     | .18    | .02  | .23                      | .13     | .11   |
| Low total assertion (n=32)    | (n=21)  | (n=11) |      |                          |         |       |
| Hide and seek game            | -.33°   | -.24   | .02  | -.12                     | .06     | .00   |
| Perspective taking            | -.34°   | -.62** | -.20 | -.31°                    | -.59**  | -.14  |
| Empathy A                     | .06     | -.07   | .24  | .08                      | -.02    | .07   |
| Empathy B                     | -.11    | -.29   | -.09 | -.14                     | -.23    | -.36  |

° .05 < p < .10, \*p < .05, \*\*p < .001, \*\*\* < p .001 (two tailed test)

a) The median scores used to divide children into low and high assertive groups.

For the low directive children, helping correlated with the hide-and-seek game test and the perspective-taking test for the total samples ( $r = -.41$ ,  $r = -.43$  respectively), and with the perspective-taking test for the girls ( $r = -.78$ ). Total prosocial behavior correlated with perspective-taking test for the total samples ( $r = -.53$ ) and for the girls ( $r = -.81$ ). For the low self-assertive children, the hide-and-seek game test correlated with helping for the total samples ( $r = -.45$ ) and with total prosocial behavior for the boys ( $r = -.53$ ). The perspective-taking test correlated with helping for the girls ( $r = -.69$ ) and with total prosocial behavior for the girls ( $r = -.63$ ) and the boys ( $r = -.63$ ).

## DISCUSSION

The primary purpose of this research was to examine with what frequency prosocial behavior appears in the daily interactions of Japanese children among their peer group. Our results revealed that prosocial behavior occurred relatively infrequently. Helping, which was the category of prosocial behavior observed most frequently, occurred an average of only 1.82 times in 150 observation sessions. Sixty-three percent of the children expressed prosocial behavior on at least one occasion. Eisenberg-Berg and Hand (1979) reported that prosocial behavior occurred an average of 0.089 times during 2-min sampling of behavior; Yarrow and Waxler (1976) found that either sharing or comforting behavior occurred an average of 2.1 times and that helping behavior occurred 6.2 times during 40-min samplings of behavior. Since these two investigations employed different methods, it is difficult to compare the results directly. It appears that prosocial behavior occurs with low frequency in daily peer interactions among Japanese children. One reason for the low frequency may be that nursery school does not provide opportunities to perform prosocial acts, as noted by Yarrow and Waxler (1976).

Our investigation revealed differences in behavior according to sex. For example, the girls appeared to be more prosocial than the boys. The issue of sex differences in prosocial behavior is a complex one. For example, Maccoby and Jacklin (1975) reviewed the studies on sex differences and concluded that there were no sex differences in prosocial behavior. However, as their study was focused primarily on generosity, this observation is open to discussion. Our data on helping supports the existence of sex differences. In their cross-cultural study, Whiting and Pope (1973) found that the girls expressed helping and supporting acts more than the boys in six cultures including that of Japanese society. There is a possibility that Japanese girls are encouraged to offer helping and care to other children, especially younger children, whereas this behavior is not expected of boys. It is also possible that the environment in which we observed our subjects was conducive to encouraging helping among the girls, since our school accommodated children from ages 2-7. The girls may have felt responsibility to help the younger children.

The number of peer interactions and the amount of directiveness positively correlated with prosocial behavior; however, aggression did not correlate with prosocial behavior even when it was divided at the median, as in the tests by Yarrow and Waxler (1976). This difference may be partially due to difference in the meaning of aggression between the two cultures. Moreover, it may be caused by the fact that the boys expressed aggressive behavior more than twice as many times as did the girls, and that the boys did not behave prosocially on many occasions.

Social cognition measures also failed to correlate with prosocial behavior, although the social cognition seemed to play an important role in predicting prosocial behavior. This may be true because the level of the social cognition abilities is known to determine the extent to which information about a child's assertiveness is useful in predicting his prosocial behavior. Assertiveness was positively correlated with prosocial behavior only in the high perspective-taking and empathy ability group. The low assertive group, on the other hand, demonstrated negative correlations between prosocial behavior and perspective-taking ability. These results suggest that the sensitive comprehension of others' perspectives or feelings may have an inhibiting effect on low assertive children. At the

same time, if the level of cognition ability is low, assertive children may not behave prosocially.

Our findings in the perspective-taking and empathy tests also supported the hypothesis of Barrett and Yarrow (1977). We concluded that personality and social cognition variables must be taken into consideration simultaneously in order to predict prosocial behavior.

Several problems were not solved in our study. For example, although we used three tests as social cognition measures, we were unable to measure their validity. Also our division of the subjects at the median may have been too arbitrary and artificial. The questions, what differences exist between the upper and lower group and how does the upper group differ from the lower group, remain unanswered. Therefore, more research concerning the simultaneous contributions of various social cognitive skills and personality variables to predict the precise individual differences in prosocial behavior is in order.

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