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EMPATHY AND ALTRUISTIC BEHAVIOR AMONG PRESCHOOLERS AN ATTEMPT TO MEASURE EMPATHY OF CHILDREN BASED ON TEACHER'S REPORT*

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Introduction

In the field of developmental psychology from the 1970s on, empathy has often been offered as a cause of prosocial and altruistic behavior. Assisting others, and other cooperative behavior, are essential for living and working in a social group. However, there are both people who are concerned with others and act kindly towards them, and others who put personal profit first and behave egotistically. Although the judgement of this behavior depends on social and cultural values, when living in a group, cooperation and helping each other is indispensable. What are the factors underlying this altruistic behavior? These factors can be broadly divided into two groups. The first are biological and genetic factors which are inborn. The second are environmental factors born out of experience and learned through social interaction. Looking at altruism from a developmental standpoint, these environmental factors are especially important.

Feshbach & Roe (1969) developed a method for measuring empathy behavior in children using picture-book stories. This method, called FASTE (Feshbach & Roe Affective Situations Test for Empathy), presents a story with a series of scenes depicting the emotional state (happiness, sadness, anger, fear) of a hypothetical story protagonist. The subject is then asked to describe his or her own emotions when seeing these pictures. This is a relatively simple method, and because it can be used for research on a large number of subjects it is often employed in studies of children. However, when this method is used to measure empathy of children, instead of using verbal reports, cards with facial expressions representing different emotions are often used, and children are encouraged to pick up the card that corresponds to his or her own feelings (Hamazaki, 1985; Watanabe & Takiguchi, 1986). While this takes less time and can be carried out more easily, it can be biased towards empathetic responses and sometimes does not sufficiently demonstrate that the emotion of the card is really shared by the subject. In other words, this method might measure an ability totally different from empathy which is seen as a fundamental factor in altruistic behavior. Since empathy, which seems to regulate altruistic behavior, includes not only recogni-

* This paper is based on the present author's Master's thesis, submitted to the Tokyo Gakugei University in 1995.

tion but also the evocation of emotion, research that searches for the relation between empathy and altruistic behavior often leaves something to be desired.

Bryant (1982) emphasized the importance of empathetic reaction and constructed a questionnaire to measure the empathy of children. The questionnaire presented various scenes to test whether or not the subject can share emotion such as happiness and sadness. These questions were answered directly by the children themselves. This method, relying on written questions, might be an especially effective means to measure empathy if I can show that it produces high validity and reliability. However, we must also assume that this self-reported type of measurement is often affected by the social desirability of a response. If the child would reply as he or she truly feels, empathy could be grasped in a more natural form. However, when measurement is carried out through written questions, there is a tendency, especially conspicuous among children, to choose the most socially appropriate reply (Sakurai, 1984). It may also be difficult, if not impossible, to carry out a self-report style questionnaire with preschoolers.

Morishita (1990) reformulated a set of written questions to measure the empathy of preschoolers through the rated responses of mothers. Although the subject is still the child, because the respondent in this case is the mother, it is possible to collect data on preschoolers who cannot yet answer questionnaires on their own. However this method shares another problem with the self-report method. Each child subject will be rated by his or her own mother, therefore all children will be rated based on different standards of judgment. A second problem is that responses tend to be influenced by their social desirability. Mothers who answer questions about their own children may give higher scores for empathy because it is socially valued. On the other hand, it is also possible that some mothers interpret the questions more strictly and give their children lower scores. For this reason, even if the subject is the same child, the larger the number of respondents, the more diversity in the standards for judging a question. This is more likely to lead to results with low reliability.

This study is motivated by a realization of these considerable difficulties in measuring empathy. The subject and ultimate objective of this study are focused on answering the question: Is there a better way to measure children's empathy, which is assumed to be a factor in altruistic behavior? With this goal in mind, this study attempts to alleviate problems with multiple respondents by having preschool teachers respond to written questions measuring empathy of children. Because the preschool teachers are in a position to intimately know many child subjects, by using their as respondents it should be possible to guard against the low reliability which plagues studies with multiple respondents. To test reliability I carried out a test of altruistic behavior, and from the premise that empathy is a fixed factor leading to altruistic behavior, I examined the relation between the two.

Measuring empathy from questionnaires administered to teachers

1 *Objective*

Based on the research results by Bryant (1982), Sakurai (1986), and Morishita (1990), a set of scales for measuring children's empathy was created by present author. Preliminary survey was done with four nursery school teachers to examine the scales

Table 1 Results of factor analysis (Varimax rotation)

Item	Factor loading		
	F 1	F 2	F 3
① During free play, he/she is unconcerned even if a schoolmate is in trouble. (R)*	.68		
He/She is unconcerned even if a schoolmate seems to want a toy he/she is using. (R)	.64		
⑫ On seeing a classmate with no friends to play with, he/she does not think 'how sad to be all alone'.	.55		
⑪ Even if a younger child falls down, he/she does not seem to want to help. (R)	.50	.49	
② He/She thinks that kids who are alone and seem sad probably want friends.	.50		
⑨ He/She feels sorry for a child who has been left eating alone.	.47		
⑧ He/She is unconcerned even if another child falls and get hurt. (R)	.47	.44	
⑥ When he/she sees a child who seems sick and not energetic, he/she seems worried.	.45		
③ When he/she seems that a pet at the preschool is hurt, he/she seems sad.	.40		
⑩ Even upon hearing a pitiful story, he/she will not feel sympathy for the character in the story. (R)		.81	
⑬ When a story has a happy ending, he/she shares the happiness as if it were a personal experience.		.71	
⑰ Even upon seeing another child being bullied, he/she does not get angry. (R)		.45	
④ He/She seems to be very happy when listening to and singing a particular song.		.44	
⑬ Upon seeing another child crying, he/she seems to want to console that child.	.41	.42	
⑮ Upon seeing a friend's art project, created with much effort, being destroyed, he/she also becomes angry.		.41	
⑱ Upon seeing another child crying he/she becomes sad himself or herself.			-.58
⑦ When a friend is praised, he/she also become happy.			-.55
⑩ When a friend is laughing, he/she also seems to be having fun.			-.49
⑳ When friends or siblings do not seem to be well, he/she seems worried.			-.40
⑤ He/She does not sympathize with friends or siblings even if they are being scolded for breaking a rule. (R)	.34		
Communality	3.10	2.82	1.69
Contribution (%)	15.52	14.12	8.44
Cumulative contribution (%)	15.52	29.64	38.09

* Questions marked (R) were posed in the negative so an answer of [untrue] was the most empathetic. For all items the most empathetic reply was assigned score of 5, and the least empathetic reply was assigned a score of 1.

extensively and intensively, and further corrections and additions were made, thus resulting in a final revised questionnaire. (The questionnaire items can be seen in Table 1).

In this study, empathy was measured by the set of scales, and factor analysis

explores its factorial substructure. The reliability of the scales was examined by the agreement between two independent raters.

2 Method

1) Respondents

The respondents were two teachers from public preschools in Hokkaido (both in charge of 4 and 5-year-olds), 2 teachers from public preschools in Tokyo (both in charge of 4 and 5-year-olds), and 4 teachers from a private preschool in Tokyo (2 in charge of 4-year-olds, 2 in charge of 5-year-olds). Also, two pairs of preschool teachers from a private preschool participated in this study. Each pair of teachers were in charge of the same class, and they responded to the questionnaire on each child in their class. The present study was basically designed to give an index of reliability by comparing the responses of these two pairs of teachers.

2) Procedures

The respondents were asked to their judgement on each item of the empathy scales along with following 5 ordered categories: [true], [somewhat true], [can't say either way], [somewhat untrue], and [untrue]. 10 out of 21 questions were constructed so as the answer of [true] was the not empathetic. 10 questions in these questions are marked 'R' so as the answer of [untrue] was the most empathetic. Each judgement was assigned a point value starting 5 to the most empathetic, and descending to 1 to the least. The questionnaire was distributed to the above said respondents on September 20, 1994 and collected October 3.

3 Results

The average scores and standard deviations were calculated, and correlation coefficients were obtained between each item of scale and the overall score. As a result, only item 14, "He or she thinks that a child who always cries is strange and not normal," showed a low correlation (.34) and an especially low communality (0.1205) with the overall score. The items were used for conducting factor analysis, so item 14 was not included. Other items had rather high correlation's ranging from .44 to .67 ($p < .001$) with the overall score.

Next, in order to shed light on the structural relation between the different items used as standards for measuring empathy, factor analysis was carried out using the principal factor method. As a result, 3 factors were obtained which could be interpreted with the Varimax rotation method. The result of this analysis was shown in Table 1. In order to interpret and name factors, the items with a factor loading of .40 or greater were selected. Item 5, "He or she doesn't sympathize with friends or siblings even if they are being scolded for breaking a rule," was not included in the final analysis because the highest factor loading was only .34.

Factor 1 (F1) showed high loading in the following 9 items: "1, During free play, he or she is unconcerned even if a schoolmate is in trouble (R: scored in reverse order)," "21, He or she is unconcerned even if a schoolmate seems to want a toy that he or she is using (R)," and "12, On seeing a classmate with no friends to play with he

or she does not think 'how sad to be all alone' (R)," This factor was interpreted as 'Concern for surroundings' which reflects a solicitude for surrounding people and animals that are in a negative emotional state. Factor 2 (F2) showed high loading in the following 9 items: "16, Even upon hearing a pitiful story, he or she will not feel sympathy for the character in the story (R)," "18, When a story has a happy ending, he or she shares the happiness as if it were a personal experience," and "4, He or she seems to be very happy when listening to and singing a particular song." This factor was interpreted as a 'Sensitivity factor' which is not related to any particular emotion, but how the person reacts to various situations. Factor 3 (F3) was high in 4 items that test whether or not a child can feel the same emotions as another person. This was called the 'Shared emotion' factor and is reflected in the following items: "19, Upon seeing another child crying he or she becomes sad herself," and "7, He or she becomes happy when a friend is praised." The items which obtained comparatively higher factor loading than .40 on two factors were placed under the factor which showed higher loading.

Next the reliability of the empathy test was examined by using two methods. First, the degree of agreement between two respondents who rated the same target child was examined. Out of a total of 261 children, 36 four-year olds (approximately 14%) were rated on empathy by two independent respondents. There was a significant correlation of .59 ($p < .001$) between their responses. Next the items of the questionnaire were divided between odd and even numbered items. The correlation coefficient between the scores of these two halves was calculated. A high correlation coefficient of .86 ($p < .001$) was obtained, and the Spearman index was .92, which is also unexpectedly high. These two methods were used to confirm the reliability of this measure of empathy.

Measuring altruistic behavior

1 Objective

Existing empirical research has demonstrated a significant mutual relation between empathy and altruistic behavior (Shutoh, 1985; Watanabe, 1989). In order to test the validity of the empathy measured in this study through teachers' reports, the experimenter will make a measure of altruistic behavior. The goal will be to select some kind of altruistic behavior which shows individual variability and can be measured objectively, and study the relationship between this behavior and empathy.

2 Method

1) Subjects

A total of 71 preschoolers from the private H Preschool in Tokyo participated in the experiment. Among these were 36 boys from the middle age class with an average age of 5 years and 2 months. The other 35 preschoolers were from the older class with an average age of 6 years and 2 months.

The experiment was carried out by the present author. The subjects were broken down into 12 subgroups, classified by 2 (age) \times 2 (sex) \times 3 (degree of empathy), which were used as the basis for the subsequent analysis.

2) Procedures

The experiment was carried out on an individual basis using the reception room of the preschool. The experimenter asked each child individually, "Won't you play a maze game with me?" and then led him or her to the experiment (reception) room. The experimenter then explained that he was interested in how well the child could do on the maze game, and explained the procedures. After giving a demonstration to the child, the experimenter had him or her practice. The experimenter then placed a card (token) in front of the child and explained that he or she would receive a number of cards depending on how many maze puzzles he or she could successfully complete. The experimenter also explained that each card could be exchanged for a prize; if the child collected many cards, these could be exchanged for many prizes. In order to control the desirability of the prize, the experimenter did not tell them what it would be in advance. The child played the game for one minute and each received 5 tokens regardless of his or her performance.

Next each child was shown a picture of people who suffered from the earthquake in Hokkaido, and the children in the picture are called as the subject's "friend." (It is common, when talking to children in Japan, to refer to a third party as a "friend" (*otomodachi*) regardless of the true relationship.) The experimenter then explained that the child could contribute some or all of the cards to these "friends," indicated the box where the cards could be making some donation to the child victims, and given them the following instruction:

You now have 5 cards, right? In this box marked "for me" put as many cards as you want to purchase prizes for yourself. In this other box marked "for my friends" put as many cards as you want to get prizes for those poor "friends" that I just told you about. If you think it would be nice to give some cards to your "friends," I want you to put them into this box. If you put card in this box, when I got to Hokkaido I can bring the cards and prizes and give them away saying, 'These cards and prizes are from your friends in Tokyo!'

After explaining that the child can divide the cards however he or she likes between the two boxes, the experimenter took the child along with the boxes to a corner of the room where a screen was set up. "I'm going to be working over there and won't be looking, so go ahead and put your cards one at a time into either box. When you are all done, tell me, OK?" The experimenter added these instructions, sat down at his chair and waited for the child to finish. After the child finished, experimenter thanked him or her and explained that the teacher would hand out the prizes later. After all the subjects had finished their experiments, the teacher passed out the prizes enclosed in envelopes.

3) Results

The average number of shared cards tended to be low, from 1.39–1.80. Because the number of subjects was small, the results did not show a clear normal distribution. However, there was a small bell curve at lower values, suggesting a more self-centered trend in the division of cards.

Because children have yet to gain a lot of social experience and learn about altruism, the results may differ from those of adults.

There may also be a difference in the sharing patterns between 4 and 5-year-olds. Although the difference in the average sharing values was not significant, 5-year-olds did give away more cards, suggesting that in this one year period there are some forces acting to reinforce altruistic behavior.

Looking at the results from 4 and 5-year-olds as a whole, there was a trend of giving away two cards. This result is consistent with previous experiments on children's sharing behavior which have demonstrated a "1/2 rule." In the present experiment preschoolers often gave away 2 cards while keeping 3 for him- or herself. In this experiment the child is placed in a difficult position when he or she receives 5 cards; this number cannot be divided evenly, so perhaps this explains why the child typically takes only one card more than those given away. In the case of 4-year-olds there were more cases of 0 cards being shared (non-sharing) than 2 cards being shared. Compared to 4-year-olds, 5-year-olds were less likely to share 0 cards. It seems likely that a selfish motive affects the behavior of 4-year-olds; since they are strongly attracted to the cards and the imagined prize, they would rather keep the prize than give it away. However, with 5-year-olds it is more common to share 2 or 3 cards. These results suggest that as children move from the developmental level of 4 to 5-year-olds, their altruistic motives also develop and they become more likely to share with others.

Discussion

The questions in this questionnaire for measuring empathy often present emotionally negative situations that focus on sadness, distress, and anger. Among these, Factor 1 corresponds to "Indifferent" as described by Morishita (1990). However in contrast to that, in this study Factor 1 was named as "Concern for surroundings" so a higher factor score reflects a greater concern for others. Many of the statements in the questionnaire used in this study carry negative connotation, so it would also be possible to name Factor 1 as "Concern for others in distress." If we include in the questionnaire some statements which refer to emotional states which are experienced in playing with good friends, helping classmates in trouble, and in joint achievement with peers, then we may obtain another factor of empathy and altruistic behavior.

It is impossible to judge based on the results of this survey, whether the concentration of "distress" items in Factor 1 is coincidental, or Factor 1 takes its shape because of the inclusion of this element. To clarify this problem it would be necessary to restructure the questionnaire with various kinds of emotional situations included. Factor 1 also reflects the degree to which a child can understand another person's emotional condition.

Factor 2, "Sensitivity," also includes cases where the object is not a real person, such as in picture books, paper doll plays, and songs. This is often seen among adults too, as when they are emotionally moved by a movie or TV program. Here empathy includes both cases where the 'other' is a real person and cases where it is not. The emergence of this factor suggests that the ability to feel empathy for objects is a basic

element in overall empathy.

The items most closely related to Factor 3 tested whether a child him/herself could feel the emotions of another person. The emotions involved in this factor included both happiness and sadness; it could be said that this factor is more closely related to the sharing of emotion in general rather than a particular emotion. The items related to Factor 3 focus on whether a child actually comes to share the emotion which he/she perceives in another person. This is in contrast to Factor 1 which questions whether this perception of emotion takes place at all, and whether this leads to a desire to act on the emotion.

Next the correlation between the results of the altruistic behavior experiment and those of the empathy questionnaire was examined. The hypothesis was that there would be a close correlation between empathy as scored by teachers and altruistic behavior as judged by the experiment. Altruistic behavior for each individual was scored according to the number of cards he/she put in the box for 'friends'. From the results of the empathy questionnaire, subjects were divided into 3 groups: (L) low empathy, (M) medium empathy, and (H) high empathy. The author then compared the average number of cards given away by each of the 3 groups and tested for statistical significance. A meaningful difference was found between the low empathy and medium empathy groups ($t(68)=1.87, .05 < p < .10$), but no meaningful difference between L and H or M and H groups.

Next, The author redivided the subjects according to the results of the altruism experiment. Those who shared at least one card formed one group and those who shared none formed a second group. The author then carried out a χ^2 test across the previous 3 empathy groups. As a result, it was found that many subjects in the low empathy category did not give any cards away. In contrast, many of the subjects from the medium and high empathy groups gave away at least some cards. This trend was found to be meaningful ($\chi^2(2)=5.01, .05 < p < .10$). This result partially supports the conclusion by Watanabe (1989) that empathy is a factor contributing to sharing behavior. However, the results as a whole did not present a clear relationship between empathy and altruistic behavior.

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