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ALTRUISTIC BEHAVIOR, SOCIAL COGNITION AND PERSON ORIENTATION IN PRESCHOOL CHILDREN

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Altruistic behavior in 4 to 6-year-old children was examined in relation to social cognitive ability and level of person orientation. It was hypothesized that both information about social cognitive ability and about person orientation are required for predicting whether children will show altruistic behavior in natural situations. Fifty-eight boys and 59 girls were observed in free play sessions for 50 minutes, during which altruistic behavior and person-oriented behavior were recorded. Social cognitive ability was assessed by a perspective-taking test and an empathy test. The results showed a significant main effect of sex and level of person orientation, and an interaction between social cognition test scores and level of person orientation. There was no main effect of social cognition test scores. As hypothesized, those children who scored high in both social cognitive ability and person orientation showed altruistic behavior most frequently. However, this effect was produced by the results for the girls only.

Key words : altruistic behavior, social cognitive ability, person orientation, sex difference.

Children's social cognitive ability, such as perspective-taking or empathy, has been recognized as providing cognitive and/or motivational bases for altruistic behaviors (Hoffman, 1975, 1978; Mussen & Eisenberg-Berg, 1977). According to Hoffman, it is predicted that altruistic behavior is motivated by empathizing or understanding cues from another person which indicate a need for comfort, sharing or helping. Mussen and Eisenberg-Berg suggested that a large portion of the variability in altruistic behaviors would be predicted by the level of social cognitive ability. However, the empirical data have been somewhat ambiguous. Some researchers have reported that social cognitive ability is significantly related to altruistic behaviors (e. g. , Ahammer & Murray, 1979; Buckley, Siegel & Ness, 1979; Iannotti, 1978), but some researchers have not found any substantial relationship between the two (e. g. , Barrett & Yarrow, 1977; Emler & Rushton, 1974; Rushton & Winer, 1975; Waxler, Yarrow & Smith, 1977). These results suggest that the level of social cognitive ability does not provide sufficient information for predicting altruistic behavior. One of the reasons for these ambiguous results may be that researchers have considered the relationship between social cognitive ability and altruistic behavior too simply. Hoffman (1978) has suggested that a person who empathizes or understands the distress of another person does not necessarily behave altruistically to him/her. Barrett & Yarrow (1977) reported that whether someone will behave altruistically to another person in distress is partly dependent upon personality variables such as self-assertiveness or social toughness. Berndt (1981) pointed out the importance of motivational factors mediating socio-cognitive processes

and altruistic behavior. However, we have very limited knowledge about such variables as these.

In this study, the dimension of person orientation, which has been found to be a salient and stable aspects of individual differences throughout the preschool years (Emmerich, 1964 ; Jennings, 1975 ; Scaefer, 1971), will be considered in relation to social cognitive variables. Person orientation was chosen for study for two reasons : First, in most previous studies, empathy or perspective-taking are equated with social cognitive ability, and are measured by tests carried out independent of real social context. Researchers have believed that the level of social cognitive ability would provide the information about the basic ability needed in order to empathize or understand the feeling of another person in distress. But, whether children would actually empathize would not be determined by the level of social cognitive ability only. For example, if a child prefers to play alone or interact with objects, it would be expected that he/she would not as readily recognize cues from another person indicating a need for some intervention or assistance, even though he/she has a high level of social cognitive ability. A preference for interacting with others or for solitary play has been found to be a salient and stable aspect of individual differences throughout the preschool years (Emmerich, 1964 ; Jennings, 1975 ; Schaefer, 1971). Thus, it could be expected that information about the level of person orientation would be useful in predicting altruistic behaviors. That is, a child who prefers to interact with other children should be able to recognize cues from another in distress if only he/she has a high level of social cognitive ability. A child who prefers to play alone or interact with objects should be less apt to readily recognize such cues even though he/she has a high level of social cognitive ability. On the other hand, children who have low social cognitive ability should not be able to recognize cues of distress regardless of their level of person orientation, since they would have more limited ability understanding these cues.

Second, level of person orientation would also be related to the level of motivation for behaving altruistically. A child who is not person-oriented may be less motivated by another's distress since other persons are not salient to him/her as they are for a person-oriented child. Thus, it would be expected that social cognitive ability alone would not produce accurate predictions of altruistic behavior, and that both information about level of social cognitive ability and level of person orientation would be required for predicting whether children will actually show altruistic behavior in natural situations.

METHOD

Subjects

The subjects were 58 boys and 59 girls, ranging in age from 4 years 7 months to 6 years 10 months. They were all attending a public nursery school.

Procedure

The children were first tested using two social cognition tests : a perspective-taking test and an empathy test. These tests were administered to the subjects individually and required about 30 minutes with each child. The children then were

observed during their nursery school free hours both in the morning (9-10:30 a.m.) and in the afternoon (4-5 p.m.). Each child was observed for 5 ten-minute samples, 3 in the morning and 2 in the afternoon. Each observation sample consisted of 30 continuous 20-second units. The categories of behaviors observed including helping, comforting, sharing and group activity (cooperative and associative activity, as defined by Parten (1932)).

The reliability of observation was assessed by simultaneous 10-minute observations on 10 children by two independent observers. The reliability coefficients were 1.00 for altruistic behaviors, and .98 for group activities.

Measures

Altruistic behaviors. Altruistic behavior was defined as attempts to fulfill another's need for physical or emotional support. Those behaviors which occurred as a part of cooperative play and involved completion of a mutual goal were excluded. Three types of altruistic behaviors were recorded : helping behavior, comforting behavior, and sharing behavior. Helping behaviors were those in which the child assisted another person either physically or by giving some information, or helped another in some task. Comforting behaviors were those in which the child expressed sympathy in physically or in vocal terms or tried to make another feel better when in distress. Sharing behaviors were those in which the child either gave away, or allowed the temporary use of material belonging to, or being used by, themselves.

Person orientation. The amount of participation in group activities (i. e. associative and cooperative activities) was used as an index of person orientation. While other studies (Barnes, 1971 ; Parten, 1932) have considered such group activities as an index of social development, recent studies have shown that involvment/non-involvment in these activities does not necessarily indicate level of social development (Moore, Everton & Brophy, 1974 ; Rubin, Maioni & Hornung, 1976 ; Smith, 1978). Rather, these studies suggest that whether a child interacts with peer or not may be instead a reflection of a preference for group vs solitary play. Thus participation in these activities was used here as a measure of person orientation.

Social cognition tests. A perspective-taking test and an empathy test were administered. The perspective-taking test 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 one. While seated opposite the child, the tester successively rotated his tray to each of four positions in the following order : 0, 90, 270, and 180 degrees from starting position. After each turn, the child was instructed to turn his/her tray so that he/she could see doll the same way as the tester could. Correct responses were scored as 1, and the total scores ranged from 0 to 4.

The empathy test was developed by Ujiie and Furuta (1981). The child was given two sets of four pictures each. Each picture showed animals at work and expressed 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's response was expressed in terms of the animal's feeling or inner state, it was regarded as an empathetic response. Children who did not give empathetic response spontaneously were asked the probe 1

question : "What is he feeling?" The probe 2 question was asked when the probe 1 question did not yield the desired responses : "Is he happy?" or "Is he angry?" and so on. Only spontaneous empathetic responses were used in this analysis. They were scored as 1, and the total scores ranged from 0 to 6.

The combined scores of the perspective-taking and empathy tests were used as the measure of social cognitive ability.

RESULTS

Observational data

The mean frequencies of altruistic behaviors are summarized in table 1. The most frequent altruistic behavior was helping behavior, which was observed in 52% of the children (mean=1.71). Comforting was observed in 23% of the children and sharing was observed in 17% of the children (mean=. 39, .30, respectively). Since sharing and comforting behaviors were relatively infrequent, sharing and comforting were combined into a single category with helping behaviors ; these three behaviors comprised the altruistic behaviors in the study. Altruistic behaviors were observed in 67% of the children, and the mean occurrence was 2.39.

TABLE 1

Mean frequency of each category of altruistic behavior and proportion of altruistically behaved children

Category	Mean	SD	Range	Proportion
Helping	1.71	3.44	0—27	61 (52%)
Comforting	0.39	0.84	0— 5	27 (23%)
Sharing	0.30	0.30	0— 6	20 (17%)
Altruistic behaviors	2.39	3.98	0—27	78 (67%)

ANOVA

To test the hypothesis, a three-way analysis of variance was performed : social cognition test scores x person orientation x sex. For the analysis, subjects were divided into high and low categories, using the medians of the social cognition test scores and person orientation scores. The means of this analysis are shown in table 2, and the results of the ANOVA are summarized in table 3.

The ANOVA yielded main effects of sex and person orientation. Girls behaved more altruistically than boys, $F(1,109) = 8.79$, $p < .01$; high person-oriented children behaved more altruistically than low person-oriented children, $F(1,109) = 4.81$, $p < .05$. There was no effect of social cognition test scores.

A significant interaction between sex and level of person-orientation was found, $F(1,109) = 10.50$, $p < .01$. Only for girls, highly person-oriented children behaved more altruistically than low person-oriented children ($p < .05$, Ryan's test), and there were no differences among the other three groups of children. For boys, altruistic behaviors were equally low over all four conditions ; that is, for boys, neither social cognition

test scores nor person orientation scores produced any effects.

TABLE 2

Mean frequency of altruistic behavior

Level of social cognitive ability	Girls		Boys	
	Level of person orientation[a]		Level of person orientation[a]	
	High	Low	High	Low
Low	3.54 (3.10) N=13	1.55 (2.33) N=20	1.87 (2.33) N=15	1.91 (1.81) N=11
High	7.42 (9.28) N=12	2.07 (1.54) N=14	0.55 (0.89) N=20	2.08 (3.09) N=12

a) Numbers in parenthese indicate SD.

TABLE 3

Summary of ANOVA for altruistic behavior

Variables		MS	df	F
Sex	A	114.29	1	8.75**
Person orientation	B	62.84	1	4.81*
Social cognitive ability	C	27.84	1	2.13
A X B		137.21	1	10.50**
A X C		9.37	1	0.71
B X C		61.38	1	4.71*
A X B X C		14.78	1	1.13
Error		13.07	109	

* $p < .05$
** $p < .01$

DISCUSSION

The present findings support the hypothesis that only children with both high social cognitive ability and high person orientation would behave altruistically ; but the hypothesis is confirmed only for girls. While the ANOVA yielded a main effect of person orientation, it also yielded an interaction between social cognition test scores and person orientation. The children who had high social cognitive ability did not show much altruistic behaviors, unless they also tended to orient toward other persons. Thus, it is possible to say that both information about social cognitive ability and about person orientation are needed in order to predict altruistic behavior.

A significant sex difference was found in this study in which girls were found to behave more altruistically than boys. The issue of sex differences in altruism is a complex one. For example, Mussen and Eisenberg-Berg (1977) reviewed and com-

mented that there were many findings that indicated no sex differences. However, there have been other studies that report sex differences. In their cross-cultural study, Whiting and Pope (1973) found that girls produced helping and supporting acts more than boys in six cultures including Japanese society. There is a possibility that Japanese girls are encouraged to offer helping or caring to other children, especially younger children, whereas these behaviors are not expected for boys. Although all the effects in this study were found to be true only for girls, the lack of effect for the boys may have been due to the fact that their scores were overall too low for any variations to be significant. There is a need for further research on sex differences in altruistic behavior.

In the previous studies which examined social cognitive ability as a predictor of altruistic behavior, researchers have overlooked information about opportunities to act altruistically, and motivation to interact prosocially with other persons. As indicated in the present results, social cognitive ability alone cannot completely predict altruistic behavior. Rather, social cognitive ability operates in interaction with the level of person orientaion, and these two variables together predict altruistic behavior. Therefore, it is not surprising that the results of previous research have been ambiguous, since levels of person orientation were not considered. In this study, however, an overall frequency of altruistic behavior was used. Further research might investigate in more detail the effect of social cognitive ability and person orientation in predicting actual responses to individual opportunities for altruistic behavior.

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