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ABSTRACT

Two studies examined the relationship between metacognitive knowledge and performance among Japanese children. It was predicted that highly prosocial children would have more appropriate knowledge of helping than would children who were low in prosocial behavior. The first study involved 109 third graders and 129 fifth graders and examined the relationship between the two groups' daily prosociality and their prosocial knowledge. Person variables studied were age of recipients of help; task variables were control, independence, and contest situations; helping strategies were direct help, indirect help, and nonintervention. The second study added a cooperative helping strategy to the design and included kindergartners (N=85) as well as third graders (N=190) and fifth graders (N=263). Findings indicated: (1) sex and age differences in preference for direct and indirect helping strategies; (2) age differences in choice of positive and negative affective words; and (3) differences in selection of helping strategies by students nominated by peers as either highest or lowest in prosocial behavior. Findings also indicated that cooperative help was the most popular strategy among the children. Children came to understand that the appropriate helping strategy depends on the recipient's situation and that recipients of direct help feel negative emotions. Kindergartners have difficulty considering situational factors and think direct help makes a recipient happy. There was an interaction between situational and strategy variables. (RH)

# Children's Prosociality and Metacognitive Knowledge of Effective Helping

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## Children's Prosociality and Metacognitive Knowledge of Effective Helping

The development of metacognitive knowledge about effective helping was examined by Barnett et al. (1982), who found that older children consider metacognitive factors such as person and situation more than do young children. This result was the same in many studies of metacognition in intellectual domains such as memory, attention, etc. In metacognitive research on the social domain, there has been little research on the relation between metacognitive knowledge and performance. This study examines the relationship between children's metacognitive prosocial knowledge and their daily prosocial behavior. It was predicted that highly prosocial children (as rated by peers) would have more appropriate knowledge of helping than children whose behavior is not rated as highly prosocial.

### Study 1

Study 1 examined the relationship between children's daily prosociality and their prosocial knowledge.

#### Method

Subjects were Japanese 3rd graders (N=109) and 5th graders (N=129). Metacognitive knowledge about effective helping was assessed. This test was based on Barnett et al. (1982), but instead of an interview a paper & pencil method was used. Subjects were presented several stories in which one child (person variable) encountered difficult situations he/she could not solve alone (task variable) Subjects were asked to select an appropriate helping strategy from 3 alternatives (strategy variable).

Person variables consisted of 3 targets of help (recipients): the same age as the subject, one year younger, and one year older than the subject. Task variables also consisted of 3 situation types: control, independence and contest situations. For these variables, 9 stories were developed and presented with the following 3 types of strategies: direct help (helper solved the problem instead of the recipient), indirect help (helper organized the situation for the recipient in order to solve the problem him/herself), and nonintervention (the helper just waited and watched).

Subjects were also asked to select the emotional state of the recipient from positive or negative affective words. Each subject's prosociality was assessed on the basis of peer nomination. Subjects were asked to nominate peers among same-sex classmates on the basis of "kindness".

## Results and Discussion

Best helping strategy. Log-linear analysis was performed on the data. Children selected indirect help as the most appropriate, and they tended not to select direct help, as shown in Table 1. Third graders selected direct help more than 5th graders, and selected indirect help less than 5th graders. In addition, girls selected indirect help more than boys.

Affective state in direct helping. Third graders chose positive affective words (33%) more than did 5th graders (16%), and chose negative affective words (67%) less than did 5th graders.

These data show direct helping (doing the job for the other person) is less common in 5th than 3rd graders. Children understand that direct help is not always good for the recipient child. It also shows that children are more aware that recipients of direct helping feel negative emotions. These results reflect the development of greater interpersonal sensitivity in children during the primary school years.

Relationship between knowledge and prosociality. The ten children nominated as either highest or lowest in prosociality (prosocial behavior) by their peers, were compared on their metacognitive knowledge about effective helping. There was a significant interaction between prosociality level and task type For the contest situations, highly prosocial children selected indirect help more than did the low-prosocial children, and none of the high-prosocial children selected direct help, as shown in Table 2. This result on prosociality indicates that more highly prosocial children (as rated by peers) have more knowledge about helping.

## Study 2

It is well known that Japanese culture promotes interpersonal dependence more than independence. From early childhood Japanese children are socialized to engage in interdependent and cooperative problem solving. So in Study 2 we added a "cooperative helping" strategy, and studied age-related differences form kindergarten through upper primary school children.

### Method

Subjects were Japanese kindergarten children (5 years: N-85), 3rd graders (8 years: N=190) and 5th graders (11 years: N=263). Metacognitive knowledge about effective helping was

assessed. An interview method was used for kindergartners, and a paper & pencil method was used for 3rd and 5th graders.

In this study person variables were not included. Task variables consisted of 3 situation types: control, independence, and contest situations. Following each story 4 types of helping strategies were presented as alternatives: direct, cooperative or indirect help, and non-intervention. In the cooperative helping strategy, the helper cooperates with the recipient solving the problem. The other 3 strategies were the same as in Study 1. Subjects were asked to select the most appropriate helping strategy. Subjects were also asked to select the emotional state of the recipient form positive to negative affective words.

Each subject's prosociality was also assessed on the basis of peer nomination. In Study 2, subjects were asked to nominate both kind and unkind peers from same-sex classmates.

## Results and Discussion

Best helping strategy. Log-linear analysis was again performed. Half of the children selected cooperative help as best, and one-third selected the indirect strategy. Direct help and non-intervention were rarely selected.

Age differences. Kindergartners selected the direct strategy relatively more (23%) and the cooperative (48%) and indirect (25%) strategy relatively less than the older children. These results indicated an increasing preference for indirect over direct helping, with age, as shown in Table 3.

Condition differences. Choices also varied according to the condition. For the control condition, children selected cooperative help (79%) most, but this strategy was chosen less often under the other conditions (independence, and contest), as indicated in Table 4. Children apparently considered the situation in their selection of appropriate helping strategies.

Affective state of direct helping. Kindergartners chose positive affective words (78%) more than did 3rd graders (33%) or 5th graders (17%). Kindergartners also chose negative affective words (20%) less than 3rd graders (66%) or 5th graders (82%).

Study 2 showed that cooperative help is the most popular among Japanese children form kindergarten through 5th grade. However, children come to understand that the appropriate helping strategy depends on the recipient's situation. They also come to know with age that recipients of direct help feel negative emotions, as was also found in Study 1. Kindergartners have difficulty considering situational factors, and they think direct help makes a recipient happy.

Relationship between knowledge and prosociality. Children nominated in either the highest 10 or the lowest 10 for prosocial behavior (by their peers) at each grade level were compared on their metacognitive knowledge of effective helping. All three grades showed main effects for peer-rated prosocial behavior. Low-prosocial children selected the indirect strategy (51%) more than did the high-prosocial children (31%)

An interaction was also found, between situational and strategy variables. Under the control condition, high-prosocial children selected cooperative helping (67%) more than the low prosocial children (17%), while low-prosocial children selected indirect help (69%) more than did the high-prosocial children (20%). Under the independent condition, high prosocial children chose cooperative help less (53%) and indirect helping more (37%) than control condition. But low-prosocial children chose indirect helping (31%) less and cooperative helping more (48%) than control condition, as detailed in Table 5.

Among kindergartners, log-linear analysis showed no significant main effect or interaction of situational variables. In other words, younger children could not differentiate situational factors to select an appropriate strategy. Older children apparently had more knowledge about strategy choice appropriate for the recipient's situation.

In sum, the results on prosociality reveal that more prosocial children have more mature knowledge, which guides their helping behavior appropriate to different situations. We have also observed a clear positive relationship between prosocial metacognition and (peer-rated) prosocial behavior.

## References

Barnett, K., Darcie, G., Holland, C., & Kobasigawa, A. (1982). Children's cognition about effective helping. Developmental Psychology, 18, 267-277.

Table 1 The best helping strategy (%)

| | 3rd | 5th | Boys | Girls |
|---|---|---|---|---|
| Direct | 6.4++ | 2.1-- | 5.7 | 2.6 |
| Indirect | 65.4- | 69.4+ | 60.4-- | 73.9++ |
| Nonintervention | 28.1- | 28.6+ | 33.9 | 23.5 |

+, - means more or less than expected value.
+ -:p<.05,++ --:p<.01.

TABLE 2 Prosociality level and the chosen best strategy in contest situation(%)

| prosociality | High | Low |
|---|---|---|
| Direct | 0.0(-) | 5.8(+) |
| Indirect | 77.1+ | 62.8- |
| Nonintervention | 22.9 | 31.4 |

+,- means more or less than expected value.
(+):p<.10,+ -:p<.05.

TABLE 3 The best strategy differences (%) with grades

| | Kindergartner | 3 grader | 5 grader |
|---|---|---|---|
| Direct | 22.8++ | 4.7 | 2.1-- |
| cooperative | 47.8-- | 58.2+ | 54.2(+) |
| Indirect | 25.1-- | 32.3+ | 35.4+ |
| Nonintervention | 4.3 | 4.8 | 8.3+ |

+, - means more or less than expected value.
(+):p<.10,+ -:p<.05,++ --:p<.01.

TABLE 4 The best helping strategy (%)

| | Cont. | Indep. | Contest |
|---|---|---|---|
| Direct | 5.1 | 6.8 | 7.0 |
| Cooperative | 78.7++ | 44.6-- | 40.5-- |
| Indirect | 15.1 | 39.4 | 43.5 |
| Nonintervention | 1.1-- | 9.2+ | 9.0++ |

+,-means more or less than expected value.

TABLE 5 Prosociality level and the chosen best strategy (%)

| prosociality | high | | | | low | | | | total |
|---|---|---|---|---|---|---|---|---|---|
| condition | contrl. | independ. | cont. | total | contrl. | indepen. | cont. | total | |
| direct | 10.0 | 6.7 | 16.7 | 11.1 | 13.8 | 17.2 | 10.3 | 13.8 | 12.4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| cooperative | 66.7 | 53.3 | 43.3 | 54.4 | 17.2 | 48.3 | 37.9 | 34.5 | 44.6++ |
| indirect | 20.0(-) | 36.7+ | 36.7 | 31.1(-) | 69.0(+) | 31.0- | 51.7 | 50.6(+) | 40.7++ |
| noninterv. | 3.3 | 3.3 | 3.3 | 3.3 | 0.0 | 3.4 | 0.0 | 1.1 | 2.3-- |

+,- means more or less than expected value.

(+):p<.10,+-:p<.05,++ --:p<.01.