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ABSTRACT

Two classrooms of first graders (n-40) were administered Damon's moral judgment measure, Spivack and Shure's social problems solving measure and Stanford-Binet vocabulary. Concurrently, two observers recorded in the children's school environment incidences of successful resolutions of interactions, amount of derogation, and the number of times a child was approached by peers. A positive relationship was predicted between moral development and frequency of success, proportion of success, and number of times the child was approached by others. Negative relationships were predicted between morality and frequency of unsuccessful responses, proportion of such responses, and derogation. The same predictions were made for social problem solving and the behavioral variables. Vocabulary was the disciminant cognitive variable; thus, no relationship to behavior was predicted. Results confirmed the positive relationship of the moral variable with proportion of successes and numbers of times subjects were approached by peers. Further, the predicted negative relationship between the moral variable and proportion of unsuccessful outcomes held. When vocabulary was partialed out, these relationships did not hold for social problem solving reasoning. As expected, vocabulary did not relate to competent social behavior. The results support moral judgment as an ecologically valid social cognitive construct. (Author/SS)

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An Ecological Validation of Social Cognitive Development

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Abstract

Two classrooms of first graders (n-40) were administered Damon's moral judgment measure, Spivack and Shure's social problem solving measure and Stanford-Binet vocabulary. Concurrently, two observers recorded in the children's school environment incidences of successful resolutions of interactions, amount of derogation, and the number of times a child was approached by peers. A positive relationship was predicted between moral development and frequency of success, proportion of success, and amount of times the child was approached by others. Negative relationships were predicted between morality and frequency of unsuccessful responses, proportion of such responses, and derogation. The same predictions were made for social problems solving and the behavioral variables. Vocabulary was the discriminant cognitive variable, thus no relationship to behavior was predicted. Results confirmed the positive relationship of the moral variable with proportion of successes and amount of time S was approached by peers. Further, the predicted negative relationship between the moral variable and proportion of unsuccessful outcomes held. When vocabulary was partialed out, these relationships did not hold for social problem solving reasoning. As expected, vocabulary did not relate to competent social behavior. The results support moral judgment as an ecologically valid social cognitive construct.

An Ecological Validation of

Social Cognitive Development

There has been a growing body of literature recently detailing social cognitive domains such as morality (Damon, 1975; Kohlberg, 1969), role-taking (Rubin, 1973), and social problem solving (Spivack & Shure, 1974). Investigator's primary validation focus has been the age-stage relationship. A relatively ignored area is the relationship between social cognition and social behavior. While some have studied the relationship experimentally (Iannotti, 1978; Olejnik, Note 1), no study to date has examined the relationship between social thought and social behavior as the latter is observed in the "everyday" environment. If social cognition has any relevance for the person's life, then one would expect a relationship between how one thinks about the social world and how one behaves in it. While Kohlberg (1969), Selman (1976), and Shantz (1975) have all expressed a need for such research, Rest (1974) reminds us that this may be the single most ignored area in social cognition today.

The present study examines the ecological validity of two social cognitive domains in a first grade sample. One social cognitive domain chosen was moral judgment (Damon, 1975, 1977). Moral judgment was chosen since there is, at present, some evidence linking moral thought to moral action. Those existing relationships, however, do not take into account "everyday" behavior but rather such extremes of behavior as emotional disturbance (Jurkovic & Prentice, 1977; Selman, 1976) and delinquency (Fodor, 1972; McColgan, Note 2). The second social cognitive construct chosen was Spivack and Shure's (1974) social problem solving domain which is concerned with the number of different alternatives one can conceptualize in working

through a social difficulty. This construct was chosen because it, too, has been empirically linked to social behavior. Like the moral construct, social problem solving has been related to deviant behavior in particular (Platt & Spivack, 1972; Spivack & Shure, 1974).

The competent social behavior construct as operationalized here, used Charlesworth's (1976; Charlesworth, Kjergaard, Fausch, Daniels, Binger, & Spiker, Note 3) ethological theory as a guide since it is one of the few theories that focuses on behavior occurring in the natural environment. It is also one of the few theories that attempts to draw a conceptual link between behavior and cognitive abilities. Given Charlesworth's speculations on the kinds of behavior that should relate to cognitive abilities, competent social behavior was defined in this study as any one of the following: a) having a high number of successful outcomes in one's interactions relative to the other children. Successful as used here is defined as the child attaining an implied goal in that the behavior is directed toward some end. Examples of behaviors indicating a goal are: taking an object, seeking information, or commanding; b) a low number of unsuccessful outcomes; c) a high percentage of successful outcomes relative to others. The percentage of success is defined as the total number of successes divided by the added composite of successes and unsuccesses; d) a low percentage of time the child is unsuccessful; e) a high percentage of time the child is approached by others. This is defined as the number of times the child is approached by others divided by the added composite of initiations and approaches by others. This was chosen because the more socially competent children should be sought out by others trying to solve social problems; and f) a low number of times a child derogates another. Since derogation shows a lack of concern for others, a socially competent child would be

expected to show little of this behavior.

Given the social cognitive and social behavioral variables as defined above and given the theoretical relationship between social thought and action, the following were expected:

1) There will be a positive relationship between moral judgment and number of successes, the percentage of successes, and the amount of time the child is approached by other children.
2) A positive relationship will occur between social problem solving and the behaviors described in hypothesis 1 above;
3) There will be a negative relationship between moral judgment and number of unsuccessful outcomes, the percentage of unsuccessful outcomes and derogation.
4) A negative relationship will occur between social problem solving and the behaviors described in hypothesis 3 above;
5) There will be no relationship between proficiency in vocabulary and any of the six behavioral variables. Vocabulary, then, will serve as a discriminant variable because of its non-social status.

Method

Subjects

Forty first graders, 18 males and 22 females, encompassing two classrooms in the same Midwestern school participated. Parental permission was sought before the cognitive testing.

Measures

Damon's (1975) moral judgment measure is similar to Kohlberg's (1969) measure with the differences being that Damon's is appropriate for much

younger children. Three moral dilemmas are presented orally to the child. This is followed by a set of standardized and follow-up questions. Stages assessed are as follows:

On stage 0-A the child's moral choices derive from the child's wish that an act take place. In other words, if a child wants something, then he/she finds it morally acceptable that he/she have it.

On stage 0-B the child bases moral choices on external characteristics. For example, those who are tallest or oldest should be treated in a fairer way than others.

On stage 1-A the child is aware of strict equality among people. For example, everyone should be treated the same despite some trying harder, working longer, or being more skilled than others.

On stage 1-B the child bases moral choices on reciprocity in actions. That is, people should be paid back in kind for their good or bad acts.

On stage 2-A the child bases moral choices on moral, rather than behavioral, reciprocity. The child bases moral decisions, not on reciprocal acts, but on internal needs. For example, the child may reason that if someone is hungry and poor, he/she should get more to eat despite the fact that others may have done more work.

On stage 2-B the child coordinates perspectives so that he/she takes into account moral and behavioral reciprocity and the various claims of the people in the moral dilemma.

The total score for each subject represented the mean of scorable responses. Level 0-A responses were given a score of 0.0, level 0-B were given 0.5, level 1-A responses were given a 1.0, and so forth. Inter-rater reliability encompassing 10 randomly selected protocols scored blind was

.91.

Spivack and Shure's (1974) social problem solving measure is administered to the child by presenting drawings of two children and a toy. The examiner's questioning is similiar to the following: "Child A has been playing with X all morning. Child B would like to use it. What can B do in order to use X?" If a child does not think of an alternative, the examiner gives up to three probes similar to "What else can you think of?" Each time an alternative is generated, the examiner goes on to two new drawings of children and a new toy. The test is stopped after seven presentations if the child fails to generate seven alternatives within those presentations. If seven different alternatives are generated, the examiner continues presenting drawings of two new children and a new toy until the child fails to generate an alternative that was not previously given. In this study, the score was derived by taking the number of alternatives and dividing by the number of alternatives plus probes used by the examiner. This ratio score represents the extent to which alternatives are readily available to the child without adult prodding. The rationale for using such a score is that the more readily available are various alternatives to a child the more likely it is that the child may be able to solve his or her problems without adult intervention. Also, this score in the present study was far more reliable or error-free than was the quantity of alternatives when used as a final score. In this study, inter-rater reliability for 10 randomly selected protocols scored blind was .91.

Binet vocabulary served as the estimate of verbal skills. Vocabulary words are presented one at a time to the child until he or she misses six in a row. Inter-rater reliability for 10 randomly selected protocols scored blind here was .95.

Altmann's (1974) Sequence Sampling method was used as the observation technique. The observer scans in a left-to-right manner and whenever any child interrupts any other child, the observer begins watching that interaction. With Sequence Sampling, all interactions under study are recorded in their order of occurrance. A problem can arise if two different interruptions occur simultaneous. Yet, because child-child interruptions occurred on the average only about 10 times per hour, incidences of simultaneous interruption occurred very infrequently. The observation of the given interaction continues until the interaction sequence terminates or is interrupted at which time the observer records and continues left-to-right scanning of the room or playground. The next sample occurs with the onset of another interruption. Another problem with this method occurs when observers cannot agree on what constitutes the beginning and end of an interaction. In this study, there was 95 % agreement between two raters on interaction onset based on 50 child-child interruptions. There was an 89 % agreement between the raters on the interaction's termination based on the same 50 interactions.

The observers recorded on a standardized sheet the appropriate information noting initiator, recipient, incidences of derogation, and whether either child was successful in the interaction. Before the study, inter-rater agreement for marking these categories was 93 % for 50 protocols. Discrepancies were defined as either observer disagreeing on the appropriate category of an observation or one observer including a unit which the other did not (e.g., one observer recording a derogation and the other not recording it). After the study the observers were checked for divergence of observations. Inter-rater agreements here were 95 %.

The advantages of Sequence Sampling include: a) the possibility of obtaining large samples of social sequences; b) a lack of bias with regard to focusing on one individual which frequently occurs during time sampling techniques; c) an estimate of behavioral frequencies; d) a lack of bias toward focusing on certain graphic behaviors or long sequences since the observer chooses the next occurring sequence.

Procedure

Three university students trained in the use of the social cognitive procedures administered the three cognitive tests on an individual basis to each child. The examiners were completely blind to the activities of the observers.

For the naturalistic observation procedure, two observers, both university students, were completely blind to the cognitive scores of the children throughout the study. The two observers were trained for 20 hours in observational skills using the behavioral units devised for the study. Both observers independently rated the same behavioral situations during training, and then observations were compared. After the training period, each observer recorded child behaviors for three hours per day for five days in one of the two classes. The observers then switched classes and continued for five more days. Approximately 30 hours of observations per class were taken during the study. The proportion of academic to free play activities was kept as similar as possible across the two classes.

Results

Reliability information for each social cognitive and behavioral

variable was adequate as seen in Table 1. Table 2 shows the Pearson correlation analyses of the hypotheses. The correlations seem to suggest that the percentages of successful and unsuccessful outcomes are related to both social cognitive variables. Further, the socially bright child appears to be approached more often in social encounters. In looking at the relationship of verbal ability and social behavior we see consistently low and non-significant relationships. As expected, verbal ability in contrast to social cognitive ability does not seem to relate to competent social behavior.

The correlations, however, which need further exploration before conclusions are drawn are between the three cognitive variables. Because of the moderate relationships between both social cognitive domains and verbal ability, it may be the case that verbal ability is mediating the social thought and social behavior relationships. To answer this question, Table 3 was constructed. This shows the social cognitive and behavioral relationships with verbal ability partialed out. As can be seen, the moral judgment and social behavior conclusions remain intact whereas the social problem solving and social behavior conclusions, except in one instance, fall out. Apparently, social problem solving by itself is no more predictive of competent social behavior than is verbal ability except in the area of predicting unsuccessful outcomes. Moral judgment, on the other hand, does seem to relate to social behavior even when verbal ability is controlled.

Discussion

In general, the correlational patterns support the expectations for moral judgment. Moral judgment did relate to frequency of unsuccessful outcomes, to the proportion of successes and unsuccessed, as well as to

being approached by others in social contexts. In other words, not only are the morally bright proportionately more successful, but also others seem to rely on them by approaching them in social situations.

The expectations that did not hold are between moral judgment and frequency of success as well as between moral judgment and derogation. It could be that total frequency of success did not relate because some highly competent children probably do not interact a great deal, but when they do they are successful. In other words, measuring a relationship between social cognition and frequency of success does not take into account the fact that one child may have only interacted five times and was successful each time while another may have interacted 35 times and was successful only 10 times. The percentage of success/unsuccess, then, controls for individual differences in quantity of interaction while measuring the proportionate incidences of success.

Why derogation did not relate to moral judgment is not clear. As a speculation, it could be that derogating a peer can, in some instances, lead to success. When a morally bright child realizes this behavioral effect, he or she is likely to continue derogating in similar, future situations. Or it could be the case that those who adhere to moral reciprocity derogate when they are derogated, thus not lowering their degree of derogation relative to others. An analysis of the number of times high moral vs. low moral subjects derogate in response to derogation did not reach statistical significance but was in the positive direction. Because such a pattern occurred infrequently this could have reduced statistical power for this comparison while at the same time still contributing to the

nonsignificant moral and derogation relationship.

While moral judgment showed a relationship to competent social behavior, verbal ability and social problem solving did not. While verbal skills can probably help in social communication, it would seem that social understanding is a more basic component. As a possibility as to why social problem solving did not relate except in one instance to behavior, the former does not measure components of cognitive complexity or sensitivity. In other words, a high score could be gotten by a child who suggests many asocial alternatives such as hitting, threatening, frightening, or manipulating another child. Such behaviors, if actually carried out, would not seem to lead to others approaching the child, or even to behavioral success over an extended time period, since the behaviors may lead to challenge or resistance from others. Even though the social problem solving and percentage of unsuccessful outcomes was significant this one correlation by itself is not enough to conclude that social problem solving is related to competent social behavior.

In contrast to social problem solving, moral judgment development describes an increasing complexity of understanding others. The child's focus progresses from exclusive self-focus to behavioral reciprocity and eventually to moral reciprocity, which takes into account others' needs. The development of this reciprocity, then, with its implied social sensitivity to others, may be a more important component to competent social behavior than is either verbal ability or the ability to think of alternatives to social problems. Such social sensitivity, if carried out behaviorally, would explain why others approach the person in solving behavioral problems. Reciprocity would also help explain the more successful and fewer

unsuccessful outcomes since compromise is likely to result.

The moral and social behavior relationships have implications for both social cognition and human ethology as described by Charlesworth. From the social cognitive viewpoint, moral judgment in young children does appear to be ecologically valid in that it is related to normal social behavior in the children's natural environment. From the human ethology viewpoint, the study offers initial support for Charlesworth's assumption that everyday behavior and behavioral outcomes are manifestations of underlying cognitive competencies. Future explorations of the social thought and behavior relationship may prove worthwhile not only for the above theoretical domains, but also for education. If we can define those cognitive components such as reciprocity which relate to social behavior, then remedial or preventative social education programs which focus on these cognitive components may help to promote social competence both cognitively and behaviorally in children.

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Table 1

Reliability Information for Social Cognitive and Behavioral Variables

Instrument	Internal Consistency
Moral judgment	.81[a]
Social problem solving	.79[b]
Successful	.70[c]
Unsuccessful	.73
Derogation	.70
Approached by others	.67

[a]Each of three stories was treated as an item and Cronbach's alpha was performed.

[b]The Sperman-Brown formula was applied to the correlation between two parallel forms.

[c]The Sperman-Brown formula was applied to the correlation between Observer A's scores during one weel and Observer B's scores during the other week for each behavioral variable.

Table 2

Pearson Correlations of the Social Cognitive and Behavioral Variables

	Moral	Social problem solving	Verbal	Successful	Unsuccessful	% successful	% unsuccessful	Derogation	Approached by others
Moral		.22	.30*	.20	-.31*	.31*	-.36*	-.04	36*
Social problem solving	.22		.41*	.06	-.07	.27*	-.32*	-.17	.27*
Verbal	.30*	.41*		-.11	-.19	.18	.02	.08	.22

* $p < .05$

Table 3

Partial Correlations of the Social Cognitive and Behavioral Variables Controlling for Verbal Ability

	Successful	Unsuccessful	% successful	% unsuccessful	Derogation	Approached by others
Moral	.06	-.27*	.27*	-.39*	-.05	.31*
Social problem solving	.12	.01	.21	-.37*	-.06	.20

* $p < .05$