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ABSTRACT

This study examined how sociomoral judgments and other evaluations of aggression related to potentially aggressogenic social-cognitive factors and patterns of conduct problem behaviors. Participating were 124 ninth graders in the seventh, eighth, or ninth year of a developmental research project on social competence. Subjects were assessed across social cognitive dimensions after imagining themselves involved in interactions portrayed in six videotaped vignettes. Subjects responded to vignette-based questions representing sociomoral judgments and multiple components of social information processing. The findings indicated that: (1) sociomoral judgments about possible aggressive responses across varied social contexts consistently predicted externalizing problems; and (2) sociomoral judgments about aggression mediated the relation between hostile attributional style and externalizing behavior. The findings suggest that sociomoral judgments about aggression play a crucial role in the tendency to react aggressively. (Contains 77 references.) (Author/KB)

The Mediating Effect of Sociomoral Judgments About Aggression on the Relation Between Hostile Attributional Style and Antisocial Conduct

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Running Head: MEDIATING ROLE OF SOCIOMORAL JUDGMENTS

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Abstract

Ninth-grade adolescents (N = 124) were assessed across social cognitive dimensions after imagining themselves involved in the interactions portrayed in six videotaped vignettes. Participants responded to vignette-based questions representing sociomoral judgments and multiple components of social information processing (SIP). Findings showed: a) sociomoral judgments about possible aggressive responses across varied social contexts consistently predicted externalizing problems; and b) sociomoral judgments about aggression mediated the relation between hostile attributional style and externalizing behavior. These findings suggest that sociomoral judgments about aggression play a crucial role in the tendency to react aggressively.

The Mediating Effect of Sociomoral Judgments About Aggression on the Relation Between Hostile Attributional Style and Antisocial Conduct

Theoretical and empirical trends in social-cognitive (e.g., Erdley & Asher, 1996; Huesmann & Guerra, 1997) and clinical psychology (e.g., Chandler & Moran, 1990; Dodge, 1993; Quiggle, Garber, Panak, & Dodge, 1992) have been increasingly directed toward understanding relations between cognitive mechanisms and antisocial outcomes. However, many researchers have continued to regard empirical attention to child cognitive functioning and antisocial behavior as insufficient. For example, Shantz (1983) has asserted that social and behavioral scientists have been unclear in explaining the role of social-cognitive deficits in deviant behavior. In addition, Huesmann, Guerra, Miller, and Zelli (1992) have described empirical studies on individuals' judgments and beliefs about aggression as "scarce" (p. 140).

Research on relations between moral-cognitive processes and deviant behavior has also been limited. As Blasi (1980) pointed out, although cognitive-developmental theory has continued to consider moral thought as playing a central role in moral action, many empirical questions about this relation have remained unanswered. Citing empirical inconsistencies, Chandler and Moran (1990) have emphasized how far we are "from any clear understanding of the relations between moral reasoning and moral action" (p. 244). Guerra, Nucci, and Huesmann (1994) have argued that research in moral cognition and aggressive behavior have continued on two separate trajectories—neither contributing to, nor learning much from, the other. In response to these concerns, the present study examined how sociomoral judgments (defined as critical evaluations based on social and moral issues) and other evaluations of aggression, relate to

potentially aggressogenic social-cognitive factors, as well as patterns of conduct problem behaviors.

Social Information Processing and Aggressive Behavior

Social information-processing theory. Recently, models of information processing have contributed to an explanation of the role of social cognition in antisocial aggressive behaviors (e.g., Dodge, 1986; Huesmann, 1988). Social information processing theory (see Crick & Dodge, 1994, for a review and reformulation), in particular, has received considerable empirical support with processing components found to account for significant behavioral variance in numerous studies (e.g., Crick & Dodge, 1994, 1996; Dodge & Coie, 1987; Dodge & Price, 1994; Waas, 1988; Waldman, 1996). This model explains child and adolescent behavior (both socially-competent and maladaptive) as the product of ordered mental operations activated in response to social stimuli.

According to Crick and Dodge (1994), children's social behavior in a specific situation operates via a cognitive processing sequence of six steps. In response to a social stimulus, an individual: (i) attends to selected stimulus cues and organizes incoming information (step 1: encoding of cues); (ii) makes social inferences and attributes characteristics (such as intent and causation) to the social stimulus and situation (step 2: attribution and interpretation); (iii) realizes and specifies personal objectives (step 3: clarification of goals); (iv) generates alternative responses to the stimulus (step 4: response access or construction); (v) makes evaluative and expectancy judgments about alternative response methods (called response evaluation) and selects the preferred response (called response selection) for behavioral performance (step 5: response decision); and (vi) carries out the selected behavioral response (step 6: behavioral enactment).

Crucial to our understanding of the relation between sociomoral cognition and antisocial behavior are how aggressive responses are evaluated and why some youth tend to endorse aggressive decision making, relative to their peers. For example, undercontrolled, antisocial youth may decide to respond aggressively in social interactions because they tend to evaluate aggression as socially and morally acceptable (a type of sociomoral judgment) and believe aggressive actions lead to desired results (a type of outcome expectancy). As discussed, recent research has provided evidence that aggressive children tend to endorse aggressive behaviors across various domains, relative to nonaggressive children (Asarnow & Callan, 1985; Boldizar, Perry, & Perry, 1989; Huesmann & Guerra, 1997), and expect aggressive actions to help them attain social goals (e.g., Deluty 1983; Perry, Perry, & Rasmussen, 1986).

The mediating effect of sociomoral judgments on the relation between hostile attributional style and externalizing behavior. As discussed, aggressive youth often maintain hostile attributional biases (e.g., Crick & Dodge, 1988; Dodge, 1980), perceive themselves as social victims, and thus justify their aggressive responses as warranted by the perceived provocation (Dodge, 1980, 1986). It may be the case that attributional biases are distally related to antisocial outcomes, relative to more immediate social-cognitive mechanisms such as sociomoral judgments. If so, it is likely that prebehavioral judgments about different forms of social conduct take place during the response evaluation step. It is at this point in the cognitive processing sequence that one may make social and moral evaluations (or judgments) about various forms of social responsivity. It was hypothesized that these social and moral judgments would have a mediating effect on the relation between attributing malintent to others and engaging in externalizing behavior. The hypothesis is that attributional tendencies do not have a direct effect on behavioral

responses, but rather indirectly affect behavior by leading to specific judgments that aggressive retaliation may be morally justified due to another's hostile provocation. Thus, according to this model, attributions of malintent lead to favorable social and moral judgments about aggressive responsivity, which in turn lead to antisocial behavior.

Method

Participants

All children from first, second, and third grades of a public elementary school in the mid-south were solicited to participate in 1986 in a developmental research project focusing on social competence. Approximately 80% of all students agreed to participate (258 total: 48% female; 52% male; 40% African American; 60% Caucasian). Due to busing practices, socioeconomic status varied across participants. Present analyses will be based on ninth grade assessments of those participants remaining in area school systems, in the seventh (cohort 3), eighth (cohort 2), and ninth (cohort 1) years of the SDP, from whom individual interviews were completed (N = 124, 48% of the year 1 sample: 52% female; 48% male; 32% African American; 67% Caucasian; 1% other). Analysis of year 1 variables revealed few differences between the participating group and the attrited group, suggesting that the participating group is representative of the original sample of boys and girls in these schools.

Social Information-Processing Assessments

Participants watched a series of video vignettes in which adolescent performers with formal drama training acted out six different social interactions. Prior to each vignette, participants were asked to imagine themselves as the protagonist in the interaction. In each vignette, the protagonist suffers a negative outcome as the result of an ambiguous provocation by

a peer or an adult. Vignette 2 serves as an example:

> Students and teacher are appropriately seated in a classroom. Students are busy doing schoolwork while the teacher is writing quietly at his desk. A student (the protagonist) gets up from his seat to sharpen his pencil and starts to walk across the classroom toward the pencil sharpener. The teacher asks the student what he is doing out of his seat.

In this case, the negative outcome for the protagonist is twofold, i.e., he is both embarrassed due to being questioned by the teacher in front of his classmates, as well as obstructed (at least temporarily) from acting in accordance with his desired goal. Following each vignette, participants were asked a series of questions about the event, representing the encoding, attributional style (or interpretation), response selection, and response evaluation steps of SIP. Encoding responses did not vary (i.e., all participants encoded cues adequately) and thus could not be analyzed.

After each vignette, participants watched another segment of video in which the protagonist displayed an aggressive response to the provocateur. For example, in the aggressive video segment of vignette two, participants imagined themselves angrily responding: "If I don't sharpen my pencil, I can't take notes in your stupid class!" Participants then evaluated the aggressive response by answering questions intended to represent domains of response evaluation. Lastly, participants viewed inept and prosocial responses to the provocateur. Because these response styles were not directly related to present interests and hypotheses, they were not further considered for analysis or discussion.

Social Information-Processing Variables

Descriptions of derived SIP variables follow below. The alpha computed for each

processing measure was based on the average score of an item across six heterogenous vignettes. Average scores were calculated to represent overall social-cognitive tendencies in order to relate such tendencies to antisocial behavioral patterns. Because it is likely that some social-cognitive differences underlie individual responses in distinct situations, relatively moderate alpha values were expected.

Hostile attributional style. Four attribution questions were asked following each vignette: (i) Who, if anybody, is to blame for what happened?; (ii) Do you think that the other person was trying to be mean, not trying to be mean, or kind of in-between?; (iii) If you saw the other person in another different situation, do you think the other person would have treated you the same way?; and (iv) If this exact same thing happened to you on another day, do you think the other person would treat you the same way? Three answer choices were provided, each of which corresponded to a score of positive (1), neutral (2), or negative (3). For cohorts 1 and 2, participants' responses to all four questions were scored and standardized within cohort. Means of these four standardized scores were then calculated across vignettes. Only the second question (ii) was administered to cohort 3 (cohort 3 consisted of the oldest children; the additional questions were added in subsequent SDP years 8 and 9). In order to ascertain an overall variable of attributional style including all participants, the second question (ii) was standardized within cohort and matched to the averaged standardized scores computed for cohorts 1 and 2 (alpha = .46).

Response evaluation. After an aggressive response was presented, participants answered six questions intended to represent individual domains of response evaluation. Continuing with our example of vignette two, the six questions and domains were: (i) Would acting like this help

keep your teacher from getting angry with you if you break the rules again? (instrumental outcome; alpha = .49); (ii) How much would your teacher like you if you acted like this? (interpersonal outcome; alpha = .49); (iii) How easy would it be for you to act like this? (efficacy and moral agency; alpha = .93); (iv) How would acting like this make you feel about myself? (self-approval; alpha = .85); (v) How much will others like you if they see you acting like this? (social acceptability; alpha = .80); and (vi) Is this a good or bad thing to be doing or saying? (sociomoral appropriateness; alpha = .76). Each question was accompanied by five answer choices, each corresponding to a scaled, quantified score from one to five (very negative, negative, neutral, positive, and very positive, respectively). Mean scores were calculated across vignettes for each domain and the interrelatedness of the six domains was examined.

Correlations among the six aggressive-response evaluation domains indicated two distinct groupings (see Table 1). Particularly strong relations were observed between domains 1 and 2 ($r = .46$, $p < .001$) and among domains 3, 4, 5, and 6 (rs ranged from .40 to .75, each $p < .001$). In addition, correlations between the first two domains and the last four domains were lower (rs ranged from .19 to .39, each $p < .05$). These findings suggested the existence of two discernible components of response evaluation.

Insert Table 1 about here

Factor analysis with varimax rotation revealed two unique underlying factors. Results confirmed our initial conclusion which identified two distinguishable groups of domain-variables. Table 2 presents factor loadings for the six response-evaluation domains.

Insert Table 2 about here

Factor scores were computed based on item averages and conceptualized as sociomoral judgments (alpha = .92) and outcome expectancies (alpha = .64), respectively (correlated at r = .37, $p < .001$), representing a bidimensional model of response evaluation. Sociomoral judgments embody evaluative questions common to social and moral issues which are potentially considered prior to reacting in social situations (e.g., issues of moral agency, self-acceptance, social appropriateness, and moral judgment). Outcome expectancies include evaluative areas associated with social goals and instrumental outcomes. These factors are not intended to represent exhaustive, comprehensive measures of sociomoral judgment or outcome expectancy.

Behavioral Outcome Measures

Three report measures were administered to assess adolescents' externalizing behavior: the Youth Self-Report (YSR; Achenbach, 1991a, d) was completed by 123 participants; and the Child Behavior Checklist (CBCL; Achenbach, 1991a, b) was completed by 75 mothers. Externalizing raw scores were calculated based on the combination of Aggression (bullies, fights, threatens, etc.) and Delinquency (lies, steals, vandalizes, etc.) scales. These behavioral measures have been repeatedly established as having excellent reliability and validity.

Results

Relations among social information-processing factors. Sociomoral-judgments and outcome-expectancies dimensions of response evaluation were related to other aspects of social information processing (i.e., attributional style and response selection). Means, standard deviations, and zero-order correlations for all social information-processing and outcome

variables are presented in Table 3.

Insert Table 3 about here

Significant correlations were observed between sociomoral judgments and each of the three other aspects of processing: attributional style, response selection, and outcome expectancies.

Sociomoral judgments as a mediator of the relation between attributional style and externalizing problems. It was hypothesized that sociomoral judgments mediate the relation between attributional style and externalizing behaviors. Baron and Kenny (1986) set forth three criteria for mediation in this case. First, attributional style (independent variable) must be significantly related to sociomoral judgments (mediator variable). Second, attributional style also needs to be significantly related to externalizing problems (dependent variable). These first two requirements were confirmed by correlational results with both YSR and CBCL externalizing scores (refer to Table 3). Third, when controlling for sociomoral judgments, the relation between attributional style and externalizing activity must be nonsignificant. The mediating effect of sociomoral judgments was supported for both YSR and CBCL externalizing scores. Upon regressing externalizing outcomes on attributional style and sociomoral judgments simultaneously, the effect of attributional style was no longer significant for either dependent variable ($\beta = .13$, YSR; $\beta = .15$, CBCL). Full mediation was upheld upon controlling for main effects of gender and race.

Discussion

This study found that sociomoral judgments of aggressive behavior represent a domain of response evaluation that is empirically distinct from evaluations of the probable outcomes of aggressing, and that significantly predicts chronic externalizing behavior problems in adolescence. Furthermore, sociomoral judgments that aggressive retaliation is acceptable mediate the effect of hostile attributional biases on externalizing behavior.

The Mediating Role of Sociomoral Judgments in the Relation between Attributional Style and Externalizing Behavior

An important objective of this study was to test the hypothesis that sociomoral judgments would mediate the effect of earlier operations in the social information-processing sequence on externalizing behavior. Upon predicting to both YSR and CBCL measures, results revealed full mediation, supporting the hypothesis that attributions of malintent affect externalizing behavior indirectly via the intermediary (and more proximal) influence of sociomoral judgments. Although causal relations could not be examined, social information-processing theory posits that attributions of culpability lead to aggressive-deviant outcomes. Results supported the inference that attributing fault to others affects behavioral tendencies indirectly via adolescents' sociomoral judgments about aggression. The idea is that one's tendency to interpret another's actions as provocative, hostile, or wrongful, and perceive oneself as a social victim, leads one to judge aggressive methods of responding as sociomorally justifiable. Positive judgments about aggression, in turn, lead to reactive anger and aggressive behaviors. Over time, aggressogenic social-cognitive paths leading to aggressive responsivity may become habitual and automatically activated upon reacting to peers who are perceived as provocative or hostile (see Hart et al.,

1990).

Because causal paths cannot be conclusively drawn, there exist alternative interpretations as to how these factors are related. It may be the case that attributions of others' wrongdoing lead to hostile, acting-out behaviors, which, in turn, lead to positive sociomoral judgments about aggressiveness. In other words, it is possible that displaying externalizing behavior mediates the effect of hostile attributional style on sociomoral judgments about aggression. Most likely, styles of thinking which endorse aggressive behavior and the aggressive behaviors themselves act transactionally as reinforcing influences on each other. Research designs are needed which allow for testing possible causal relations among processing variables, as well as between processing factors and behaviors.

Conclusions

The current study demonstrated convincing evidence of the crucial role played by sociomoral judgments in adolescents' social information processing and conduct problem behaviors. Participants' sociomoral judgments of their own aggressive responses consistently predicted externalizing problems and mediated the relation between hostile attributional style and antisocial conduct. These findings may be particularly useful in developing intervention programs which focus on cognitive-behavioral strategies to preventing aggressive and delinquent behaviors in youth. This study suggests that such programs might focus on adolescents' sociomoral judgments of the justifiability of aggressive behaviors. Furthermore, this research has contributed to our knowledge of social information processing and behavioral competence in adolescence—a developmental stage which has received relatively little attention in this area compared to childhood or adulthood.

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Table 1

Correlations Among Domains of Aggressive-Response Evaluation

Domain (Alpha)	2	3	4	5	6
1. Instrumental outcome (.49)	.46***	.27**	.19*	.19*	.24**
2. Interpersonal outcome (.49)	--	.27**	.26**	.39***	.31***
3. Efficacy and moral agency (.93)		--	.65***	.40***	.51***
4. Self-approval (.85)			--	.62***	.75***
5. Social acceptability(.80)				--	.55***
6. Sociomoral appropriateness (.76)					--

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 2

Factor Analysis of Domains of Aggressive-Response Evaluation

	Factor Loadings	
Factor (alpha) and domain	I	II
Sociomoral judgments (.92)		
Efficacy and moral agency	.74	.19
Self-approval	.93	.07
Social acceptability	.73	.22
Sociomoral appropriateness	.85	.15
Outcome expectancies (.64)		
Instrumental outcome	.10	.86
Interpersonal outcome	.23	.81

Table 3

Social Information Processing and Externalizing Behavior: Descriptives and Correlations

	M	SD	2	3	4	5	6
Processing variables (n = 124)							
1. Hostile attributional style[a]	-.01	.32	.05	.09	.30**	.26**	.26*
2. Response selection[b]	2.08	.13	--	.10	.29**	.31***	.23*
3. Outcome expectancies[c]	4.41	.27	--	--	.37**	.17	.16
4. Sociomoral judgments[d]	4.04	.55	--	--	--	.47***	.50***
Behavioral outcome variables							
5. YSR externalizing (n = 123)[e]	13.00	7.49	--	--	--	--	.41***
6. CBCL externalizing (n = 75)[f]	8.60	8.24	--	--	--	--	--

*p < .05. **p < .01. ***p < .001.

[a] Represents mean z score across trials; Range = -.89 to .86.

[b] Scale = 1.00 to 2.00; Range = 1.00 to 1.83.

[c] Based on evaluations of aggressive responses; Range = 3.58 to 4.83.

[d] Based on evaluations of aggressive responses; Range = 2.67 to 5.00.

[e] Based on raw scores; Range = 0.00 to 32.00 (YSR).

[f] Based on raw scores; Range = 0.00 to 40.00 (CBCL).

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