Preschoolers Use Trait-Relevant Information to Evaluate the Appropriateness of an Aggressive Response

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Abstract

The tendency for 3– to 5–year-old children to use trait-relevant information about other people when evaluating aggressive responses to ambiguous behavior was examined across two studies (*N* = 81). Children were more likely to endorse the use of aggression against a "mean" versus a "nice" story character. Additionally, they were more likely to endorse the use of aggression against a story character who feels happy rather than sad when bad things happen to other kids. These findings suggest that, as early as preschool, trait-relevant information about other people can serve as a tool with which children evaluate the appropriateness of aggression in response to ambiguous behavior. Moreover, these findings provide evidence that even before the onset of formal schooling, trait and mental state information can influence social judgments.

Keywords

Violence is a critical public health problem, one with great personal, social and economic costs [Cohen and Swift, 1993; Fontanarosa, 1995; Rosenberg et al., 1992]. It is becoming increasingly clear that violent behavior in adulthood has antecedents that are often evident early in development [see Coie and Dodge, 1998; Huesmann et al., 1984; Olweus, 1979]. There is a critical need to develop programs that successfully prevent violence, so a major goal of research on aggression is to determine the factors that are predictive of, and contribute to, aggressive behavior across development. Sociocognitive approaches to the study of childhood aggression have emphasized the important role that children's patterns of thinking play in supporting and maintaining aggressive behaviors [e.g., Huesmann and Guerra, 1997].

One aspect of children's social cognition that has been of interest to researchers attempting to understand aggression in childhood is the extent to which children *endorse*, or approve of, the use of aggression as a means of responding to the provocations of others [Coie and Dodge, 1998; Giles and Heyman, 2003; Huesmann and Guerra, 1997; Henry et al., 2000; see also Erdley and Asher, 1998]. The tendency to endorse aggression has been linked to several negative behavioral outcomes, including increased levels of aggressiveness [Erdley and Asher, 1998; Huesmann and Guerra, 1997; Guerra and Slaby, 1989; Gouze, 1987], deficits in prosocial behavior [Erdley and Asher, 1998] and peer rejection [Asarnow and Callan,

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1985; Perry et al., 1986]. For example, Erdley and Asher [1998] found that fourth and fifth graders who believed strongly in the legitimacy of aggression as a means of solving problems were more aggressive and less prosocial than their peers.

In addition to this evidence of individual differences, there is evidence that children tend to hold beliefs about aggression that are differentiated based on contextual factors, such as information about social actors [Dodge et al., 1984; Olthof et al., 1989, see also Giles and Heyman, in press]. For example, there is evidence that children's endorsement of aggression is affected by information about mental states that underlie behavior, such as intentions [De Alencar et al., 1984; Dodge et al., 1984; Ferguson and Rule, 1988]. Ferguson and Rule [1988] found that 5– to 10–year-olds are more likely to approve of the use of aggression against a provocateur whose initial transgression was intentional.

Of interest in the present study is whether young children might use trait-relevant information about other people that is more general in nature (i.e., not tied to a specific behavioral instance) to decide whether aggression may be warranted. In this article, trait-relevant information refers either to a direct description of a person's trait (e.g., a person described as mean) or to a description of a person's emotional response that would lead others to infer a trait (e.g., a person described as feeling happy when other people get hurt; this would imply meanness). Despite evidence that children's trait reasoning undergoes substantial development during the elementary school years [see Ruble and Dweck, 1995], there is evidence that even young children are capable of using trait descriptions to make some kinds of social inferences, including inferences about the mental states that underlie behavior [Heyman and Gelman, 1999, 2000; see also Giles and Heyman, 2003].

The present paper is the first to examine the possibility that simply providing young children with trait-relevant information about other people, such as information about a character's aggressive tendencies, might exert a causal influence on children's tendency to endorse an aggressive response. This possibility is reasonable in light of evidence that children are likely to react punitively towards aggressive peers [Coie and Pennington, 1976; Crick and Grotpeter, 1995; Dodge, 1980; Graham and Hoehn, 1995; Fabes et al., 1996; Ladd et al., 1990]. Children's perceptions of peers as aggressive are important to consider because they may create lasting reputational and behavioral effects for the peers being classified [see Hacking, 1995].

We used two techniques to assess the relevance of trait-relevant information about other people for children's endorsement of aggression. First, we used explicit trait labels to describe story characters who engage in ambiguous behavior (i.e., wherein the character's behavior results in a negative consequence for the participant, but the intent of the character is uncertain). We then posed a series of questions assessing children's endorsement of aggression against those characters. The sociomoral trait labels "nice" and "mean" were selected because they are familiar terms to young children, and reflect highly salient themes of prosocial and antisocial behavior.

Second, we presented children with information about trait-relevant *properties* and then assessed their endorsement of aggression. Specifically, children were told about the emotional responses of story characters to the plight of others. This manipulation was designed to determine whether young children have some meaningful understanding of the ways in which dispositions mediate the relationship between events and emotional reactions to those events [see Ruble and Dweck, 1995]. Previous work has shown that by age 5, children have some capacity to associate emotions with trait information [Gnepp and Chilamkurti, 1988; Yuill and Pearson, 1998]. Since children in the present study were asked about emotional reactions they are likely to have experienced, this provides a sensitive test

of children's ability to integrate emotion information into their evaluations of people. An additional reason for including this property manipulation was to include a control for the valence of the description provided. If children were using a very simplistic strategy of mapping negative words onto negative responses, it might suggest that a character's sad response to another's plight would be associated with a negative response (greater endorsement of aggression) than would a happy response to another's plight, because sad has a more negative valence. However, if preschoolers are able to reason about the emotional state information in a more sophisticated way, one might predict the opposite pattern of response.

STUDY 1

METHOD

Participants—Participants were 41 preschoolers (21 boys and 20 girls; M = 4y 6m, range 3y 6m to 5y 0m). Thirteen were African American, eight were Asian American, three were European American, and 17 were Hispanic American. Participants were recruited from two Head Start Centers serving low-income, ethnically diverse families in urban areas of San Diego County.

Procedure—Participants were interviewed individually. They were asked to respond to a series of questions based on scenarios narrated by the experimenter. On all measures, approximately half of the participants heard stories involving female characters, and half heard stories involving male characters.

<u>Scenarios:</u> Participants were each presented with four different scenarios in random order. In each story a different character "spilled your milk." This scenario has been used in other research investigating responses to ambiguous social behavior [e.g., Erdley and Asher, 1988; Giles and Heyman, 2004], and is useful because it is open to a variety of different attributions. This behavior displayed by the character was held constant across all four scenarios. Trait-relevant information about the story characters was varied in a 2 (*information type*: trait label, emotion information) by 2 (*trait*: nice, mean) within-subjects design. Two of the scenarios began with a trait label, and the other two scenarios began with emotion information that implied the traits expressed in the trait labels; this trait-relevant information was followed by a description of the character spilling the participant's milk. The two scenarios that presented trait labels described the character as either "nice" or "mean," as in the following example: "Nicole is a nice kid. Nicole spilled your milk." The two scenarios that presented emotion information described the character as being either "happy" or "sad" when bad things happen to other people, as in the following example: "Sam feels happy when bad things happen to other kids. Sam spilled your milk." This emotion information was designed to correspond to the trait labels, such that "happy when bad things happen to other people" corresponded with "mean," and "sad when bad things happen to other people" corresponded with "nice."

For each participant, names of the characters were randomly selected without replacement from a list of masculine or feminine names, to insure that results would not be systematically influenced by any associations that may exist between particular names and the psychological characteristics under investigation [see Kasof, 1993]. After each scenario was presented, participants were asked to make a series of three inferences about the character, as described below. These measures were designed to help determine whether varying ways of assessing children's endorsement of aggression would yield similar results.

Explicit endorsement of hitting: Participants were asked, "Some kids would hit [the story character]. Would you hit [the story character]?" "No" responses were coded as 0, "maybe" responses were coded as 1, and "yes" responses were coded as 2.

Endorsement of hitting by a third party: It is possible that some children might reject aggression, even though they think it is justified, because of concerns about getting hurt or getting in trouble. For this reason, an additional question was included: "Would you want someone big and strong to hit [the story character] if the teacher wasn't looking?" "No" responses were coded as 0, "maybe" responses were coded as 1, and "yes" responses were coded as 2.

Evaluation of hitting as a good idea: Participants were also asked to evaluate how good an idea it would be to hit the story character, on a scale from 0 (a big frown) to 6 (a big smile). This scale was adapted from Heyman et al. [1992], in which children first selected valence (good, bad, or not sure) and then selected the magnitude of good or bad responses.

RESULTS

Initial stepwise regression analyses revealed no significant effects of participant age or of the gender of story characters on any of the measures of endorsement of aggression, so these variables were dropped from subsequent analysis. The proportion of children giving each possible response on each measure is presented in Table I.

Relations Among Dependent Measures—Analyses of the relations among measures suggest that children's responses show some coherence. As is evident from Table II, if a child tended to endorse aggression in one situation, he or she tended to endorse aggression in other situations. For example, when treating the dependent variables continuously, explicitly endorsing hitting the story character was often associated with reports that it was a better idea to hit. These findings are consistent with prior research suggesting that among preschoolers, some children are more likely than others to hold beliefs supporting the use of aggression [e.g., Giles and Heyman, 2003].

Multivariate Effect of Trait and Information Type—Since the three dependent measures were to some degree correlated, a 2 (*trait:* nice, mean) by 2 (*information type:* trait label, emotion information) by 2 (*participant gender*: male, female) MANOVA was conducted to investigate the overall effects of trait-relevant information. In this analysis, trait and information type were within-subjects variables, participant gender was a between-subjects variable, and responses to the three endorsement of aggression measures were the dependent variables. Results revealed an overall multivariate effect of trait, $F(1, 38) = 63.62$, $p<.0001$, with participants more likely to endorse aggression against the mean than the nice characters; and of participant gender, $F(1, 38) = 9.62$, $p<.01$, with boys being generally more likely to endorse aggression than girls. No multivariate effect of information type was evident, suggesting that children did not differentiate between trait labels and emotion information when deciding whether aggression would be appropriate. No significant interactions were found. Subsequent univariate tests also all revealed a significant effect of trait, with participants being more likely to approve of aggression against "mean" characters on all measures. Despite the lack of a multivariate effect of information type, levels of this variable were not collapsed because the use of trait labels and the use of emotion information are thought to be conceptually distinct [see Yuill & Pearson, 1998].

Univariate Effects of Trait and Information Type

Overview of analyses conducted: To best capture the role of trait-relevant information in participants' tendency to endorse aggression, responses to the Explicit Endorsement of

Hitting measure, and the Explicit Endorsement of Hitting by a Third Party measure were subjected to a series of categorical analyses.[1] This categorical treatment allowed a preservation of the conceptual nature of the response options (e.g., one "no" and one "yes" are conceptually different than two "maybes," even though their mean score would be the same). Loglinear analyses were conducted [see Landis and Koch, 1979, for justification of this approach], because of the within-subjects nature of these data. Responses to the Evaluation of Hitting as a Good Idea measure were treated continuously.

Explicit endorsement of hitting: A 2 (*trait:* nice, mean) by 2 (*information type:* trait label, emotion information) loglinear analysis conducted on response to the Explicit Endorsement of Hitting measure revealed a main effect of trait, $G^2(2) = 9.88$, $p<.001$. Further comparisons revealed that children's tendency to say "yes" across scenarios on this measure did not vary as a function of the particular trait presented, $G^2(1) = 2.59$, $p = .11$. However, a comparison of "maybe" responses across scenarios did reveal a significant effect of trait, $G^2(1) = 7.03$, $p<.01$, with participants more likely to say that they would "maybe" hit the mean characters, compared to the nice characters. This finding suggests that trait information with negative sociomoral implications may increase children's tendency to entertain the possibility that they would hit, rather than increase their tendency to say that they would definitely hit.

Endorsement of hitting by a third party: Loglinear analyses of children's responses to the Endorsement of Hitting by a Third Party measure also revealed a significant main effect of trait, $G^2(2) = 19.83$, $p<.0001$. Interestingly, in contrast to the pattern of results obtained from the Explicit Endorsement of Hitting measure, the frequency of "yes" responses did vary as a function of the characteristic presented. Participants were significantly more likely to say that "yes" they would want someone else to hit a mean character than to hit a nice character, $G^2(1) = 14.99$, $p<.0001$. This finding suggests that when children are given the opportunity to endorse aggression when the personal stakes are low, it may increase the chances that they will agree with the use of aggression against antisocial actors.

Evaluation of hitting as a good idea: A 2 (*trait:* nice, mean) by 2 (*information type:* trait label, emotion information) within-subjects ANOVA on children's responses to the Evaluation of Hitting as a Good Idea measure revealed a significant effect of trait, with children reporting it would be a better idea to hit the antisocial characters (mean, happy) than the prosocial characters (nice, sad), $M = 3.52$ versus 1.32, $F(1, 40) = 62.62$, $p<.0001$.

DISCUSSION

The results of Study 1 suggest that preschool children make use of information about the traits of others, both when such information is presented in the form of trait words and when it is presented in the form of emotional reactions to the plight of others, when determining whether aggression might be appropriate. Specifically, participants were more likely to approve of aggression against characters who are mean or interpersonally callous than against characters who are nice or empathic. The lack of observed effects of type of trait-relevant information supports the conclusion that preschool children can use information about emotional states of story characters in much the same way that they use trait information that is more explicitly presented, and that they are not simply using a valence-matching strategy. These findings extend previous work demonstrating that young children can use trait information to resolve uncertainty [Heyman and Gelman, 2000], by providing

[1]Parallel sets of analyses in which participants' responses to the *Explicit Endorsement of Hitting and Endorsement of Hitting by a Third Party* measures were treated continuously yielded similar patterns of results, but tended to obscure patterns in the distribution of particular response options.

the first evidence that preschool-aged children can take dispositional information into account when evaluating the appropriateness of aggressive behavioral responses.

STUDY 2

Study 2 was conducted to determine whether the pattern of results found in Study 1 would generalize to other instances of ambiguous behavior. To that end, two new ambiguous situations were included. A second goal of Study 2 was to investigate whether the observed effect of trait-relevant information in Study 1 would still be obtained if yet another assessment of approval of aggression were used. To that end, children in Study 2 were simply asked if it would be "okay" to hit the story character, a methodology that has been used frequently in studies of children's endorsement of aggression [Henry et al., 2000; Huesmann and Guerra, 1997; Giles and Heyman, 2003].

METHOD

Participants—Forty children participated (21 boys and 19 girls; M = 4y 10m, range 3y 10m to 5y 3m) in the study. Eight were African American, 7 were Asian American, 1 was European American, and 24 were Hispanic American. None had participated in Study 1.

Procedure—Participants were interviewed in the same manner as in Study 1. Gender of story characters was assigned as in Study 1.

Scenarios: Participants were presented with eight scenarios in random order, four in which a story character "messed up your puzzle," and four in which a story character "tore your picture." These scenarios were adapted from a set of ambiguous situations used by Dodge and colleagues in studies of attributional biases in older children (e.g., Dodge, 1980; Dodge and Frame, 1982). Trait labels were manipulated as in Study 1. Emotion information was presented as in Study 1, except that children were told that the character felt either happy or sad "when other kids get hurt." Character names were selected in the same manner as in Study 1.

Approval of hitting: After each story was presented, participants were asked whether it is okay to hit the story character [following the methodology of Huesmann and Guerra, 1997, and Giles and Heyman, 2003]. They were asked, "Some kids would hit [the story character]. Is it okay to hit [the story character]?" "No" responses were coded as 0, "maybe" responses were coded as 1, and "yes" responses were coded as 2.

RESULTS

Initial stepwise regression analyses revealed no significant effects of age, gender of participant, gender of story character, or story type, so these variables were dropped from subsequent analysis. The proportion of children giving each possible response on the Approval of Hitting measure is presented in Table III.

Effect of Trait and Information Type—To examine differences in the frequencies of particular responses across conditions, a 2 (*trait*: mean, nice) by 2 (*information type*: trait label, emotion information) by 2 (*story type*: puzzle, picture) loglinear analysis was conducted on children's responses to the Approval of Hitting questions[2]. An examination of the frequency of "yes" responses across scenarios revealed a significant main effect of trait, G^2 (1) = 6.68, p<.0001, such that participants were more likely to say "yes" regarding mean

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[2]Parallel sets of analyses in which participants' responses to the Approval of Hitting measure were treated continuously yielded similar patterns of results, but tended to obscure patterns in the distribution of particular response options.

actors; and of information type, G^2 (1) = 10.80, p<.001, such that participants were more likely to say "yes" in the trait label conditions. There was no effect of story type, and no significant interactions emerged.

To examine the effect of information type, a series of simple comparisons were conducted. In the trait label condition, children were more likely to say "yes" concerning the mean character than the nice character, G^2 (1) = 7.94, *p*<.01. In contrast, they did not differentiate between characters in their tendency to say "yes" in the emotion information condition, G^2 (1) = 1.34, *p*>.20. However, within the emotion information condition, children did differentiate between mean and nice characters in their tendency to say "maybe": children were more likely to say that it was "maybe" okay to hit the character who feels happy than the character who feels sad, G^2 (1) = 17.95, *p*<.0001. This finding suggests that children are attuned to emotional state information, but that this information might be less likely than explicit trait labels to guide them towards a definite decision to aggress.

DISCUSSION

As in Study 1, children were more likely to approve of the use of aggression in response to ambiguous provocation when the actor was described as mean, as opposed to nice. They were also more likely to entertain the possibility of using aggression when the actor was described as happy, rather than sad, when other kids get hurt. These results provide further evidence that children take into account general characteristics associated with antisocial tendencies, when making judgments about the appropriateness of aggression.

GENERAL DISCUSSION

Two main conclusions can be drawn from the present research. First, preschool-age children are sensitive to explicit trait labels when evaluating the appropriateness of the use of aggression in response to ambiguous transgressions: across a variety of measures, participants were more likely to approve of aggression against a mean child than against a nice child. Second, preschool-age children are also sensitive to trait-relevant information when it is presented in terms of emotional reactions to the plight of other people: participants were more likely to entertain the possibility of using aggression against a child who feels happy rather than sad when bad things happen to other kids.

These findings suggest that even before the onset of formal schooling, young children use trait-relevant information about other people to help them decide whether aggression is appropriate, even when such information is presented in terms of a more complex link between the suffering of third-parties and people's emotional reactions to that suffering. These results contribute to a growing body of evidence suggesting that, despite the fact that trait understanding undergoes substantial development over the elementary school years (see Ruble and Dweck, 1995), children show some aspects of systematic reasoning about traits even before they reach school age [Cain et al., 1997; Heyman and Gelman, 1999, 2000].

The present results also suggest that preschool-aged children are able to use trait information in more than just a simple valence-based way. Participants' endorsement of aggression was not only influenced by the presentation of the overtly evaluative terms "nice" and "mean," but also by descriptions of how story characters tend feel in response to the pain of others. If children were operating solely on the basis of a simple valence-matching strategy (e.g., linking a negative word with a negative response), one might expect them to be less likely to endorse aggression against a child who is happy when someone gets hurt, as compared to a child who is sad when someone gets hurt because "sad" is an emotion word of positive valence. The present evidence points to the possibility that preschoolers have some capacity to interpret behavior in light of information about people's mental and emotional lives.

These results build on recent findings highlighting the sophistication young children show in reasoning about emotion [Lagattuta and Wellman, 2001].

More broadly, the present results build upon prior research demonstrating that children's interpretation of social behavior is driven by salient cognitive constructs, such as person schemas [Carpenter, 1988; Catrambone and Markus, 1987; Dodge and Tomlin, 1987; Markus, 1983; Piaget, 1954; Zelli et al., 1996] that serve to regulate and influence social action. By invoking a generalized notion of the salient characteristics of the individual engaging in a behavior, an observer can make a broad range of inferences and generate action plans [Dodge, 1986; Jones and McGillis, 1976, Shaver, 1985].

Why might young children use information about the dispositions of others to decide whether aggression is warranted? One possibility is that they might pick up on societal cues that it is more acceptable to aggress against certain people. Preschool children are likely to be exposed to complex and often contradictory messages about whether aggression against "bad guys" is okay. For example, although day care centers and preschools tend to have explicit rules under which aggression is categorically unacceptable, there is evidence that adults do support children's use of aggression in certain circumstances. For example, Wiley et al. [1998] have demonstrated that some parents may speak with approval about children standing up for themselves aggressively. In addition, a prevalent message in television and film is that it is justifiable, and even desirable, to be aggressive towards "bad guys." Children face the difficult task of fitting these messages together with the anti-violence messages they might also hear.

CONCLUSION

The present research provides evidence that young children can use information relevant to the traits of other people to guide their responses to ambiguous social behavior. Across two studies, preschoolers were especially likely to approve of the use of aggression against children described as having aggressive tendencies. The present results contribute to a growing body of evidence suggesting that children are likely to react punitively towards children who they perceive to be aggressive (e.g., Graham and Hoehn, 1995). Prevention efforts might thus benefit from a continued examination of the role of person perception in the tendency to endorse punitive solutions to social conflicts [see Hymel, 1986].

Acknowledgments

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TABLE I

Proportion of Children in Study 1 Giving Each Type of Response for all Measures, as a Function of Trait-Relevant Information Given

	Trait label		Emotion information	
	Nice	Mean	Sad	Happy
EXPLICIT ENDORSEMENT OF HITTING				
No	.854	.561	.878	.732
Maybe	.098	.317	.049	.122
Yes	.049	.122	.073	.146
ENDORSEMENT OF HITTING BY A THIRD PARTY				
No	.829	.537	.902	.634
Maybe	.122	.220	.073	.146
Yes	.049	.244	.024	.220
EVALUATION OF HITTING AS A GOOD IDEA				
Total bad idea	.732	.293	.829	.317
Big frown	.415	.073	.439	.073
Medium frown	.195	.073	.146	.098
Little frown	.122	.146	.244	.146
Neutral face/not sure	.146	.122	.122	.146
Total good idea	.122	.585	.049	.537
Little smile	.073	.220	.049	.146
Medium smile	.024	.220	.000	.293
Big smile	.024	.146	.000	.098

TABLE II

Correlations Between Responses to the 12 Dependent Measures in Study 1

Information		Mean			Nice			Happy			Sad		
		EH	TP	GI	EH	TP	GI	EH	TP	GI	EH	TP	GI
Mean	EH	1.00											
	TP	0.56*	1.00										
	GI	0.57*	0.48*	1.00									
Nice	EH	0.66*	0.44*	0.25	1.00								
	TP	0.45*	0.33*	0.59*	0.44*	1.00							
	GI	0.53*	0.26*	0.60*	0.40*	0.67*	1.00						
Happy	EH	0.74**	0.56*	0.48*	0.57*	0.43*	0.40*	1.00					
	TP	0.30*	0.58*	0.21	0.41*	0.08	0.13	0.51*	1.00				
	GI	0.57*	0.46*	0.57*	0.49*	0.43*	0.50*	0.69*	0.45*	1.00			
Sad	EH	0.48*	0.28*	0.34*	0.65*	0.40*	0.19	0.40*	0.13	0.39*	1.00		
	TP	0.26*	0.15*	0.50*	0.25	0.43*	0.27*	0.23	0.11	0.38*	0.47*	1.00	
	GI	0.46*	0.28*	0.48*	0.25	0.49*	0.82*	0.33*	0.09	0.45*	0.11	0.15	1.00

EH = *Explicit Endorsement of Hitting* measure.

TP = *Endorsement of Hitting by a Third Party* measure.

GI = *Approval of Hitting as a Good Idea* measure.

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P<.05.

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P<.01.

TABLE III

Proportion of Children in Study 2 Giving Each Type of Response on the Approval of Hitting Measure (Averaged over Story Type), as a Function of Trait-Relevant Information Given

	Trait label		Emotion information	
	Nice	**Mean**	**Sad**	**Happy**
No	.638	.275	.713	.375
Maybe	.175	.338	.188	.463
Yes	.188	.388	.100	.163