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# The Role of Empathic Accuracy in Adolescents' Peer Relations and Adjustment

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*This study investigated whether children's empathic accuracy is associated with their peer relationships and adjustment. It also examined whether, and how, empathic accuracy moderated the known influence of peer relations on adjustment. Participants were 116 (58 boys) fifth-through eighth-graders. At school, child participants completed measures assessing their peer relationships. In the lab, child participants completed a performance-based measure of empathic accuracy and measures of adjustment. Teachers and parents also provided assessments. Results revealed that children who were less adept at inferring other people's thoughts and feelings were more likely to experience adjustment problems. Empathic accuracy acted as a buffer against adjustment problems when peer relationships were poor: Previously found links between poor peer relationships and poor adjustment were found for adolescents with low empathic accuracy but not for those with high empathic accuracy.*

**Keywords:** *empathic accuracy; adolescence; peer relationships; adjustment*

Many studies have shown that children who have problems developing and maintaining peer relationships are more likely to develop adjustment problems. Adolescent children who have difficulties with peer relations are more likely to than those without such difficulties to withdraw from school, become involved in delinquent activities, and suffer from mental health problems (Kupersmidt, Coie, & Dodge, 1990; Parker & Asher, 1987). Indeed, Hartup (1992) has suggested that the single best predictor of adult adjustment is the proficiency with which children get along with other children.

These findings lead us to believe that empathic accuracy may be a potentially important individual difference variable that is related to peer relationships and adjustment. is the ability to accurately infer the specific

content of another person's thoughts and feelings (Ickes, Stinson, Bissonette, & Garcia, 1990). The ability to accurately decode other people's thoughts and feelings involves noticing, attending to, and correctly interpreting the messages conveyed through their words, tone of voice, facial expressions, and body posture, and to contextualize this interpretation by appropriately assessing the current environmental situation. Research conducted with adults suggests that this ability helps one to avoid or minimize conflicts with others and to more effectively align one's own plans and projects with theirs (Simpson, Ickes, & Oriña, 2001).

The purpose of the present study was to examine the influence of this important social skill on adolescents' peer relationships and adjustment. In the present study, we tested to see whether empathic accuracy is associated with peer acceptance, number of friends, friendship quality, and victimization. We also examined the links between empathic accuracy and childhood adjustment problems. Finally, we sought to move beyond simple "main effects" models by examining how empathic accuracy may influence the known associations between peer relationships and adjustment. It is important to know how the social skills an individual possesses interact with interpersonal relationships to influence adjustment. Thus, we examined whether empathic accuracy moderates the previously established link between poor peer relationships and poor adjustment.

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### *Empathic Accuracy: Background and Comparison With Related Constructs*

The concept of empathic accuracy can be traced back to Carl Rogers, who used the term *accurate empathy* to describe a clinician's ability to accurately infer, from one moment to the next, the patient's specific thoughts and feelings (Rogers, 1957). In the work of William Ickes and his colleagues, the term *empathic accuracy* has essentially the same meaning, referring more generally to the degree to which a perceiver is able to accurately infer the specific content of another person's thoughts and feelings (Ickes, 1993, 2001, 2003). This work uses a video-cued procedure that Ickes and his colleagues have developed to measure empathic accuracy as a performance variable (Ickes, 2001, 2003).

Dozens of empathic accuracy studies with adult participants have been published over the past 18 years, and their results have yielded consistent and strong support for the reliability and validity of the empathic accuracy assessment procedure (Ickes, 2001, 2003). The interrater reliability of the empathic accuracy measure averages .90 (Ickes, 2001), and its cross-target consistency (computed for global empathic accuracy scores) was .86 in a study in which perceivers inferred 30 thoughts and feelings for each of three target persons (Marangoni, Garcia, Ickes, & Teng, 1995).<sup>1</sup>

Virtually all of the research on empathic accuracy has focused on adult perceivers. Reviewing the available research findings, Flury and Ickes (2001, 2006) concluded that certain characteristics of adult perceivers are important determinants of their empathic accuracy. Specifically, perceivers who are more attentive, more motivated, and more sympathetic tend to be more accurate when inferring another person's thoughts and feelings. The available research findings also indicate that, as a general rule, empathic accuracy is associated with positive relationship outcomes (e.g., Bissonnette, Rusbult, & Kilpatrick, 1997; Simpson et al., 2001; see Ickes & Simpson, 2001, for a review). There is, however, an important exception to this rule: Empathic accuracy regarding one's partner's relationship-threatening thoughts and feelings has been associated in studies of both dating and married couples with heightened feelings of distress and a temporary reduction in feelings of closeness with the partner (Simpson, Ickes, & Blackstone, 1995; Simpson, Oriña, & Ickes, 2003).

Before we examine the role of empathic accuracy in adolescent peer relationships and adjustment, we must first begin by distinguishing this construct from a number of other related constructs, such as empathy, empathic concern, emotional intelligence, and perspective taking.

*Empathy and empathic concern.* Contemporary researchers distinguish emotional empathy (shared affect)

from cognitive empathy (perceptual accuracy and social knowledge), though their measurement techniques often reflect a combination of both. Eisenberg and colleagues (Eisenberg et al., 1999; Eisenberg, Murphy, & Shepard, 1997) define *empathy* as an emotional response elicited by and congruent with another person's emotional state. More specifically, the emotional or affective component of empathy refers to cases in which one person identifies and "shares" the emotions of another.

The very similar construct of *empathic concern* has been defined as the feeling of concern for another's well-being that is often, but not always, attendant on a person's ability to recognize the needs and the emotional distress of others (Batson, Ahmad, et al., 1999; Batson & Moran, 1999; Davis, 1994; Davis, Conklin, Smith, & Luce, 1996). Empathic concern is different from empathic accuracy because it requires a sympathetic, concerned response to the other that may or may not be predicated on an accurate interpretation of the other's thoughts and feelings.

*Emotional intelligence.* Arguing that empathy-related phenomena can be viewed as one aspect of a more general "emotional intelligence," Mayer and Salovey (1997) have suggested that emotional intelligence may involve four component abilities: (a) the ability to perceive other people's emotions accurately (this is one aspect of empathic accuracy, which concerns accurate inferences about other people's thoughts as well as their feelings), (b) the ability to use emotions to assist thought, (c) the ability to understand emotions and their meanings, and (d) the ability to manage emotions. Research conducted from this perspective suggests that the development of adolescents' emotional intelligence may lead to positive social and emotional outcomes. For example, Ciarrochi and colleagues (Ciarrochi, Chan, & Bajgar, 2001; Ciarrochi, Forgas, & Mayer, 2001) found that adolescents who scored high, rather than low, on a self-report measure of emotional intelligence recognized facial expressions better, reported having better social support, and engaged more in behaviors that maintain good moods. Thus, emotional intelligence (i.e., understanding the emotions of self and others) may play an important role in both peer relations and personal adjustment.

There is some obvious conceptual overlap between empathic accuracy and emotional intelligence. Both involve making accurate inferences about other people's current emotions. However, empathic accuracy is not just concerned with emotions; it also involves making accurate inferences about the content of the specific thoughts that other people have during ongoing interactions. In addition, it is currently not clear to what extent empathic accuracy is involved in using or managing emotions. Potentially, a person could be good at empathic

accuracy without necessarily being good at managing or using his or her emotions (or vice versa). A final important point of difference is that empathic accuracy is typically measured as a performance variable, whereas emotional intelligence, like many related constructs, is typically measured using self-reports. To the extent that people lack insight into their own empathic skills, performance measures may be more valid and objective than self-report measures.

*Perspective taking.* Although there is some conceptual similarity between the constructs of perspective taking and empathic accuracy, there are important differences as well. Piaget (1926), Flavell (1982), and others (Perner & Howes, 1992) have generally assumed that the construct of perspective taking implies a process in which the perceiver either physically or imaginatively adopts the target person's perspective and then regards the thoughts, feelings, and perceptions that are evoked as emotions that the target person may also be experiencing. In contrast, the construct of empathic accuracy conveys no implicit assumptions about the processes that underlie a perceiver's empathic accuracy (Ickes, 1993, 2003). Instead, empathic accuracy researchers use a video-cued procedure to measure empathic accuracy directly. They then link this ability empirically to a range of other process- and outcome-relevant variables to gain inductive insights about the antecedents and consequences of "everyday mind reading" (Ickes, 2003).

As another important point of difference, empathic accuracy concerns the ability to infer the *specific* content of the target person's thoughts and feelings from one moment to the next, whereas perspective taking concerns the ability to physically or imaginatively assume the other person's general perspective. Perspective-taking abilities include "seeing things from the other person's point of view," "looking at everybody's side of a disagreement before making decisions," and "trying to understand others better by imagining how things look from their perspective" (see the Interpersonal Reactivity Index [IRI]; Davis, 1996). Although one might expect that empathic accuracy and perspective taking would be positively correlated, it is possible that a person could be relatively good at seeing another person's point of view while being relatively poor at inferring the specific content of the other person's moment-to-moment thoughts and feelings (or vice versa). In fact, questionnaires designed to measure perspective taking and empathic concern have consistently failed to predict empathic accuracy as a performance measure in adults, though the interpretation of this null result is confounded by the obvious difference in the measurement methods used (for reviews, see Davis & Kraus, 1997; Ickes, 2003, chap. 7).

### *Empathic Accuracy in Adolescents*

The present study focuses on the influence of empathic accuracy influence on relationships and adjustment at a time when these relationships are becoming increasingly important (i.e., late childhood and early adolescence; see Lerner and Steinberg, 2004).<sup>2</sup> Adolescence is a period marked by changes in social, cognitive, and biological processes that enable adolescents to develop their perspective-taking and everyday mind-reading skills. In turn, the quality of adolescents' social experiences may be directly influenced by their ability to accurately infer the thoughts and feelings of others. Previous research has revealed that the ability to decode, understand, and regulate emotions is associated with better social and emotional adaptation (Eisenberg, Fabes, Guthrie, & Reiser, 2000). Similarly, Dodge, McClaskey, and Feldman (1985) have noted that accuracy in interpreting others' emotions is related to how well children interact with others. When children misperceive their peers' signals, they often respond inappropriately, which can lead to lower peer acceptance.

In addition, positive social bonds during adolescence are linked with happiness and subjective well-being, whereas a threat to these intimate relationships is a source of negative affect, including anxiety, depression, and loneliness (Baumeister & Leary, 1995). Thus, the ability to accurately infer peers' thoughts and feelings may be both a cause and a consequence of the development of the intimate relationships that are critical to one's personal and social adjustment during adolescence.

Considerable evidence suggests that children who develop poor peer relationships are more likely to develop subsequent adjustment problems (Rubin, Bukowski, & Parker, 1998). Studies have primarily focused on internalizing (i.e., overcontrolling) and externalizing (i.e., undercontrolling) syndromes as measures of adjustment. Internalizing problems are described as displaying overcontrolling behaviors and experiencing internal distress. Internalizing symptoms include high levels of anxiety, depression, withdrawal, and somatic complaints (Achenbach & Edelbrock, 1978). In contrast, externalizing problems are described as displaying undercontrolling (i.e., impulsive) behaviors, which include aggression, rule-breaking behavior, and conflicts with other people. Children's coping strategies can result in different types of adjustment. For example, children who tend to withdraw or isolate themselves from the peer group are more likely to experience internalizing problems, whereas aggressive behavior has been linked to externalizing problems. Equally important are children's social problems, which involve difficulties in children's relationships with both adults and peers.

The social experiences of adolescents can be further divided into friendships, peer acceptance and rejection, and victimization. Developmental research examining relationships with peers has observed that friendships and peer acceptance are related but conceptually distinct experiences (Rubin et al., 1998). Friendships provide opportunities to develop two primary skills: (a) those necessary for effective interpersonal interactions (e.g., conflict resolution tactics) and (b) those necessary for future relationships (i.e., intimacy; Newcomb & Bagwell, 1995). Peer acceptance, however, is a measure of social preference that concerns one's reception within a peer group (Rubin et al., 1998).

Victimization, a negative aspect of childhood relationships, can occur at the group level or within friendships (e.g., Crick & Grotpeter, 1995; Crick & Nelson, 2002; Egan & Perry 1998; Ladd, Kochenderfer, & Coleman, 1997). Levels of victimization have been found to be stable over time and have been associated with various negative outcomes, including depression and avoidance of school (Hodges & Perry, 1996).

At present, almost nothing is known about the role that empathic accuracy plays in the social lives of adolescents. Previous research has focused on adolescents' perspective taking, empathic concern, and ability to read general emotional signals but has not addressed their ability to accurately infer the specific thoughts and feelings of others in ongoing conversations. This is unfortunate because empathic accuracy may be one of the most important factors that promote social bonds among peers. If children cannot understand what their peers are thinking and feeling during ongoing interactions, they may have difficulty maintaining these relationships even if they are quite capable of controlling their emotions, reading general emotional cues, showing empathic concern, or taking another's perspective. In addition, empathic accuracy should permit adolescents to interact with each other on a more intimate level and thereby establish the kinds of relationships necessary for positive development. Finally, empathic accuracy may be a social skill that children can use preemptively to protect themselves from being victimized.

#### *General Model Relating Empathic Accuracy to Peer Relations and Personal Adjustment*

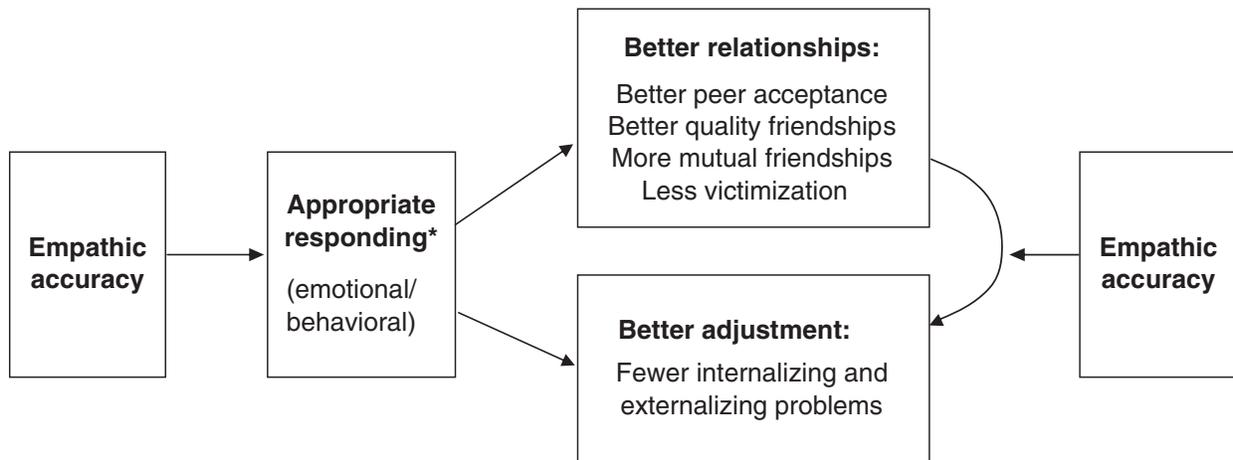
Given how little is known about empathic accuracy in early adolescence, it is impossible to offer a detailed, definitive model of how empathic accuracy affects early adolescents' peer relations and personal adjustment. It is, however, possible to speculate within the framework of a more general model. Consistent with Dodge's social information processing (SIP) model (Dodge & Rabiner, 2004), we propose that the ability to

accurately infer the thoughts and feelings of others will influence the ability to make appropriate behavioral responses during ongoing social interactions. However, whereas Dodge's SIP model emphasizes the *determinants* of effective everyday mind reading (e.g., aspects of information processing such as selective attention), our model emphasizes the *effects* of effective mind reading on children's social lives and personal adjustment. This model, presented in Figure 1, does not attempt to specify which mental operations determine empathic accuracy (Flury & Ickes, 2001, 2006; Ickes, 2003); instead, it attempts to specify how empathic accuracy, when viewed as a predictor variable, directly affects the quality of children's peer relationships and moderates the negative effects of poor peer relations on their personal adjustment.

In general, empathically accurate children should be more likely to experience higher quality friendships, greater peer acceptance, more mutual friendships, and lower levels of victimization than less accurate children. Based on previous theoretical models, it is also possible to speculate about how empathic accuracy might affect adolescents' personal adjustment. For example, the "need to belong" theory assumes that people have a persistent drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships (Baumeister & Leary, 1995). If people fail to develop close personal relationships, the evidence indicates they are at a greater risk to experience unhappiness, depression, and other adjustment difficulties (Baumeister & Leary, 1995).

These considerations suggest that empathic accuracy should enable children in the early stages of adolescence to respond more appropriately in their social interactions at a time when relationship formation is critical. Their more appropriate responding should in turn lead to better adjustment outcomes. In addition, we anticipate that empathic accuracy will moderate the link between peer relationships and adjustment (see Figure 1). Finally, although we made no specific predictions in this regard, we also tested for possible moderating influences of sex (i.e., gender) to ensure that our results generalized across boys and girls. In some cases, we statistically controlled for sex because certain peer relationship variables (e.g., victimization, friendship quality) have in previous research been characterized by sex differences.

Including additional measures of empathic abilities (i.e., perspective taking, empathic concern, and emotional intelligence) permitted a particularly stringent test of the hypothesis that empathic accuracy contributes to peer relations and adjustment. Empathic accuracy may be correlated with these other related constructs; thus, any associations of empathic accuracy with peer



**Figure 1** Theoretical model of the influence of empathic accuracy on adolescent peer relationships.  
\*Not directly assessed in the present study.

relations may be due to the correlation of emotional intelligence, empathic concern, or perspective taking with both empathic accuracy and positive peer relations. We should note that questionnaires designed to measure these empathy-related dimensions have consistently failed to predict empathic accuracy as a performance measure in adults (Davis & Kraus, 1997; Ickes, 2003, chap. 7). Nevertheless, controlling for these other constructs should result in an especially conservative test of the focal hypotheses.

Finally, empathic accuracy may be differentially related to the peer relations and personal adjustment outcome measures, or it may differentially buffer against the influence of poor interpersonal relationships on adjustment. For example, different facets of adolescent interpersonal relationships often yield distinct psychosocial adjustment outcomes (e.g., Ladd et al., 1997). As such, four measures of adjustment—namely, internalizing, externalizing, social, and total problems—were included to examine possible differentiated linkages between empathic accuracy and adjustment in adolescence. Internalizing problems involve problems within the self, which include being depressed, anxious, and withdrawn. Conversely, externalizing problems involve being frequently at odds with others and entail behaviors such as being belligerent, headstrong, hyperactive, delinquent, and aggressive (Jensen-Campbell & Malcolm, 2007). Social problems involve difficulties in interpersonal relationships, such as being disliked by peers, overdependent, and immature (Achenbach, 1991; Achenbach, McConaughy, & Howell, 1987). Total problems is a composite of all problem syndromes (i.e., anxious/depressed, withdrawn/depressed, somatic

complaints, rule-breaking behavior, aggressive behavior, social problems, and thought problems; Achenbach, 1991a, 1991b; Achenbach et al., 1987).

#### *Specific Hypotheses Tested in the Present Study*

*Hypothesis 1.* Our first goal was to examine the relation of empathic accuracy to specific aspects of peer relations. Based on our theoretical model, we predicted that children with higher empathic accuracy scores would experience greater acceptance by peers, more mutual friendships, better quality friendships, and less victimization.

*Hypothesis 2.* Our second goal was to examine the relation of empathic accuracy to specific aspects of children's personal adjustment. As noted previously, people are motivated by a need to belong, and failure to meet one's belongingness needs may result in both emotional and behavioral problems. From this perspective, we would expect that adolescents who fail to accurately infer the thoughts and feelings of others would be more likely to respond inappropriately in social interactions. Inappropriate responding should impede the adolescent's ability to have mutually satisfying interactions, thereby frustrating the adolescent's need to belonging and leading to greater adjustment problems. Although this presumed causal sequence could not be tested with our correlational data, our model clearly does predict that children with higher empathic accuracy scores would exhibit fewer adjustment problems than children with lower empathic accuracy scores.

*Hypotheses 3.* Our third goal was to examine the model's prediction that empathic accuracy would moderate the effect of poor peer relations on adjustment problems. If it does, a high level of empathic accuracy should help to "buffer" adolescents from the negative effects that poor peer relations have been shown to have on personal adjustment. In other words, poor peer relations should be associated with personal adjustment problems for adolescents whose empathic accuracy is low but not for those whose empathic accuracy is high.

## METHOD

### *Participants*

A subsample (53%) of the 219 adolescents who were participating in a larger classroom-based study examining peer relations and victimization in childhood were recruited to participate in the present study. Parents who gave their signed permission for their child to participate in the larger study were contacted and asked to bring their child to our laboratory for additional testing. The resulting subsample was composed of 116 fifth- (31.0%), sixth- (48.3%), seventh- (17.2%), and eighth- (3.4%) grade children (58 boys and 58 girls). The mean age of the child participants was 12.18 years old (range = 10-14 years). The ethnic composition was 77.6% White, 16.4% Hispanic, 4.3% African American, and 1.7% Asian American.

### *Measures Assessed in the Children's Classrooms*

*Peer acceptance.* Peer acceptance was measured by asking each participant to rate the other participants in his or her grade on two questions, "I like this person" and "I would like this person for a close friend," using a scale ranging from 0 (*not at all*) to 7 (*very much*). Because these two items were highly correlated at the Time 1 ( $r = .96, p < .001$ ) and Time 2 ( $r = .96, p < .001$ ) assessments, and across both periods ( $r = .88, p < .001$ ), they were averaged for each respondent and then averaged again across respondents to create a measure of peer acceptance ( $\alpha = .95$ ).<sup>3</sup>

*Number of friends.* Friendship was operationalized as a reciprocal nomination. The children were asked to list up to six same-sex, same-grade best friends who were in their school. Thus, the friendship scores could range from 0 to 6 friends; actual scores did indeed range from 0 to 6. Reciprocal nomination eliminates the use of a unilateral friendship index, which has not been positively related to social adaptation (Buhrmester, 1990).

To control for the possibility that participants had mutual friendships outside of the children who were

included in the study sample, we examined the ratio of mutual friendships within the study by taking the number of reciprocal friends within the study and dividing it by the total number of nominated friends within the study. For example, if a student nominated four friends, but only three were in the study (and they were reciprocal nominations), he or she would receive a score of 1.00. Both the total number of mutual friendships (uncorrected) and the ratio of mutual friendships within the study produced virtually identical results.

*Friendship quality.* Friendship quality was assessed by asking each student to respond to four items for each of the friends they nominated: (a) "I spend fun time with this person"; (b) "I share secrets and private feelings with this person"; (c) "I depend on this person for help, advice, and support"; and (d) "This person sticks up for me." Items a-c were selected from Furman and Buhrmester's (1985) Network of Relationship Inventory, whereas Item d was created for use in the present study. The self-reported and peer-reported measures of friendship quality were correlated .42 at Time 1 and .33 at Time 2. A composite measure of total friendship quality was formed by averaging across self-reported and friend-reported quality at both periods ( $\alpha = .86$ ). Because only mutual friendships would be included in these quality analyses, 8 participants were dropped from these analyses that involved friendship quality due to their lack of mutual friendships.

*Victimization.* A modified version of the Peer Nomination Inventory (PNI) was used to assess victimization (Wiggins & Winder, 1961). Within the PNI, the relational victimization items were adapted from the Children's Social Experiences Questionnaire (Crick & Grotpeter, 1995). Both relational victimization (e.g., "S/he is ignored by other classmates when someone is mad at him/her";  $\alpha = .92$ ) and overt victimization (e.g., "Kids make fun of him/her";  $\alpha = .62$ ) were examined in this study. The children were asked to nominate each classmate who exhibited the behavior identified in each item. Following the procedures of Egan and Perry (1998), we computed victimization scores on the PNI as the percentage of classmates who nominated the adolescent participant on a single item. We then summed the percentages for each item. Thus, each four-item measure of victimization ranged from 0 to 400.

*Psychological adjustment.* The PNI also assessed externalizing problems (e.g., "S/he is just plain mean";  $\alpha = .87$ ) and internalizing problems (e.g., "On the playground, she/he just stands around";  $\alpha = .84$ ). In addition, students were asked to complete the Youth Self-Report (YSR) measure (Achenbach, 1991b) to assess self-reported

internalizing, externalizing, social, and total problems. The parents and teachers also completed their respective versions of Achenbach's measure to assess these problems (i.e., Child Behavior Checklist [CBCL], Teacher Report Form [TRF]). There is extensive documentation supporting the validity and reliability of these scales (for reviews, see Achenbach, 1991a, 1991b).

*Emotional intelligence.* An age-appropriate version of Schutte's emotional intelligence measure was completed by the adolescents (Schutte et al., 1998;  $\alpha = .87$ ). The adolescents and their parents also completed the International Personality Item Pool (IPIP) Emotional Intelligence measure (Barchard, 2001; Goldberg et al., 2006;  $\alpha$ s = .80, .78). Finally, the adolescents completed the IRI (Davis, 1983) by rating how well each statement described them on a scale from 1 (*does not describe me well*) to 5 (*describes me very well*). In this study, we focused solely on perspective taking ( $\alpha = .71$ ) and empathic concern ( $\alpha = .66$ ).

#### *Development of the Empathic Accuracy Stimulus Tapes*

During the planning stage of the research, we recruited several fifth- to seventh-grade students and teachers to come to our lab and help us create a standard set of empathic accuracy stimulus videotapes (for precedents, Gesn & Ickes, 1999; see Marangoni et al., 1995). Standard stimulus tapes were needed so that we could assess the empathic accuracy of the adolescent participants in our planned study in a way that would allow the resulting empathic accuracy scores to be compared across participants and interpreted as a measure of individual differences in empathic ability.

The standard videotapes consisted of several excerpts taken from the semistructured, videotaped interactions of the different teachers and students we had recruited to serve as the "target persons" (i.e., each of the tapes depicted a unique interaction between a particular teacher and a particular student). The students who participated in these videotaped interactions were currently in the fifth- to seventh-grade levels, thus corresponding to the ages of the child participants in the current study. The teachers and students were not actors and were not given scripted conversations; all conversations were the actual, unrehearsed interactions that took place between each teacher and each student, and they involved spontaneous discussions of typical problems they experience in school. For example, from the student's perspective, the problem might be the amount of schoolwork they received. From the teacher's perspective, the problem might be the amount of schoolwork they had to give to accomplish their educational objectives.

These taped interactions show four male teachers and four female teachers in conversation with one of the eight students. The following eight teacher-student dyad types were represented in the final standard stimulus tape: (a) male-male, (b) male-male, (c) male-female, (d) male-female, (e) female-male, (f) female-male, (g) female-female, and (h) female-female. The ethnicity of the interactants (Black, White, Hispanic) was allowed to vary randomly.

We chose to use teacher-student dyads rather than peer-peer (student-student) dyads in the stimulus tape we created so that we could examine differences in children's level of empathic accuracy for teachers/adults versus peers. This distinction was of interest because of the possibilities that (a) empathic accuracy might be better overall for peers than for teachers/adults, (b) empathic accuracy for peers might be more closely related to the child's social adjustment than empathic accuracy for teachers/adults, and (c) empathic accuracy for the teachers might be more closely related to aspects of the child's classroom performance because classroom performance involves understanding and being appropriately responsive to teachers' expectations.

Immediately after the videotaped interaction, the teacher and student who participated in the interaction were seated in separate cubicles and allowed to view the videotape. While viewing the videotape, they were asked to pause the tape whenever they remembered having had a particular thought or feeling and write down the content of each thought or feeling on coding forms that we provided them (see Ickes, 2001, for methodological details). We then edited the tapes of these conversations so that the final "master" tape contained four excerpts from each of the eight teacher-student conversations. As such, the final master stimulus tape gave the student participants the opportunity to make 32 empathic inferences—16 about the teachers' thoughts and feelings and 16 about the students' thoughts and feelings. The content of the specific thoughts and feelings that the teacher and student target individuals reported during the interactions ranged from school topics to peer relationships to extracurricular activities such as movies and sports.

Two versions of the final stimulus tape were created so that we could counterbalance the order of the thoughts and feelings to be inferred by the participants. In the first tape, the participants were required to infer all of the teachers' thoughts and feelings first and then infer all of the students' thoughts and feelings subsequently. In the second tape, the participants were required to infer all the students' thoughts and feelings first and then infer all the teachers' thoughts and feelings subsequently. The second half of each tape consisted of different conversations between the teachers and students. In

other words, participants were not watching the same conversation they previously watched to infer either the teacher's or student's thoughts. Within each tape, the sex of the target person alternated within the teacher segments and within the student segments. Random assignment determined which of two tapes a participant viewed.<sup>4</sup> Given the design of the tapes, the conversations between the teachers and the students did not build on each other; each conversation topic was only viewed once.

### Data Collection

*Peer relations assessment.* Data collection for the larger study took place in the adolescents' school classrooms in several distinct phases. During the fall semester (November-January), the child participant completed the PNI, along with measures of peer acceptance, friendship quality, and victimization. The students were tested in groups of 4 to 6 by research assistants who read the test instrument to the children while they followed along and marked their responses. First, the children were asked to identify the classmates who exhibited the behavior identified in each item. Next, the children were asked to rate how much they liked the person and how much time they spent with the person (i.e., peer acceptance). Finally, the children were asked to name up to six friends from their school, and to complete the friendship quality questions for each nominated friend (i.e., mutual friendship and friendship quality).

During the spring semester (April-May), the children were reassessed regarding their peer relations using the same measures as in the fall. The empathic accuracy assessment in the laboratory took place between February and May of the same year.<sup>5</sup> At this time, the adolescents and their parents were asked to complete the YSR and CBCL (Achenbach, 1991a). A teacher who knew the child well was also asked to complete the TRF in the spring (Achenbach, 1991a).

*Empathic accuracy assessment.* When the parent(s) and child first arrived at the laboratory, they were told that the purpose of this research was to examine the student's ability to infer the thoughts and feelings of others. The child participants then viewed the standard stimulus tape that was used to assess their level of empathic accuracy. The stimulus tape was paused for the child at the exact moments that the target person (i.e., student or teacher) in each of the tape segments had reported having had a specific thought or feeling during the conversation. At this point, the child participant was asked to use the empathic inference form to write down, in sentence form, the content of the specific thought or feeling that child thought the target person

had reported. The child participant then restarted the videotape and observed the ensuing conversation until the experimenter paused the tape again. The process of pausing, writing, and restarting continued until the participant had viewed the entire stimulus tape and made all 32 thought/feeling inferences.

After completing the empathic accuracy assessment procedure, the child participant completed Schutte's measure of emotional intelligence, the IPIP measure of emotional intelligence, the IRI, and the YSR in an order that was counterbalanced across participants. While the parents were waiting for their child to complete the empathic accuracy assessment procedure, they were asked to complete the CBCL (Achenbach, 1991a) and the IPIP Emotional Intelligence measure on their child (Barchard, 2001).

## RESULTS

### *Coding and Aggregating the Empathic Accuracy Data*

Using a modified version of the Read Your Mind data coding program (Ickes, 2003, p. 72), five independent raters (three women) judged the similarity in content between each of the actual thoughts or feelings (those reported by the interactants in the videotape segments) and each of the corresponding inferred thoughts and feelings (those written down by the child participants in this study). The five raters made these similarity ratings on a 3-point scale, assigning either a 0 (*essentially different content*), 1 (*similar, but not the same, content*), or 2 (*essentially the same content*) in each case. All raters received extensive practice training that required them to use all three ratings codes when making their empathic accuracy judgments.

The interrater reliability for these empathic accuracy ratings, assessed as Cronbach's alpha, was .95. Accordingly, the empathic accuracy ratings were averaged across the five raters, and the averaged ratings were aggregated across the set of thought/feeling inferences for each target type to compute the three empathic accuracy indices that are described below. The reliability and validity of assessing empathic accuracy by means of these procedures has been repeatedly demonstrated in studies conducted with adult participants (Ickes, 2001, 2003). (For more details about the computation of empathic accuracy indices, which are rescaled as a percentage-analogue measure with a potential range of 0 to 100, see Ickes, 2001, 2003.)

To determine whether there was a difference in the children's empathic accuracy score for teacher targets (ETI) and peer targets (EPI), we created two empathic

**TABLE 1:** Intercorrelations Among Personality Variables Across Raters

Personality Variable	1	2	3	4	5	6	7
1. Empathic accuracy	.00						
2. Emotional intelligence	.14	.00					
3. Empathic concern	.10	.69**	.00				
4. Perspective taking— Student IRI	-.01	.50**	.47**	.00			
5. Fantasy scale— Student IRI	.19*	.46**	.44**	.31**	.00		
6. Empathic concern— Student IRI	.09	.59**	.86**	.55**	.37**	.00	
7. Personal distress— Student IRI	.10	.17†	.19*	.30	.32**	.16†	.00

NOTE: Emotional intelligence is an average  $z$  score composed of the parent International Personality Item Pool (IPIP), student IPIP, and student Schutte's emotional intelligence. Empathic concern is an average  $z$  score composed of the student Interpersonal Reactivity Index (IRI), parent IPIP, and student IPIP.

\* $p < .05$ . \*\* $p < .01$ . † $p < .10$ .

accuracy indices and conducted a dependent  $t$  test. It revealed a nonsignificant difference between EPI and ETI,  $t(116) = 1.90$ ,  $ns$ . Then, to see if the ETI and EPI indices were measuring the same or different constructs, we correlated the EPI and ETI indices and found them to be highly correlated ( $r = .73$ ). Given this strong positive correlation, it did not make sense to do separate data analyses for the two indices.<sup>6</sup> Instead, we averaged them and used the resulting overall empathic accuracy index (EA) as our major predictor variable for all of the analyses reported below.

### Preliminary Analyses

We first tested to see whether empathic accuracy was a construct that is distinct from emotional intelligence, empathic concern, and perspective taking. As anticipated based on previous findings (Davis & Kraus, 1997; Ickes, 2003; Ickes et al., 2000), empathic accuracy was not significantly correlated with emotional intelligence, empathic concern, or perspective taking ( $r_s = .14, .09, -.01$ , respectively). These results indicate that the performance measure of EA is a relatively distinct and unique construct that is not captured by other empathy-relevant measures (see Table 1).

### Tests of the Research Hypotheses

**Hypothesis 1.** Based on our theoretical model, we predicted that children with higher EA scores would have better quality friendships, be more accepted by their peers, have more mutual friendships, and experience less victimization. As expected, EA was negatively correlated with peer reports of *relational victimization* ( $r = -.20$ ,  $p < .04$ ). However, this correlation was not significant for *overt victimization* ( $r = -.13$ ). Children

who had higher EA were less likely to be relationally victimized by their peers. In addition, EA was positively, but less strongly, correlated with friendship quality ( $r = .18$ ,  $p < .10$ ). Finally, EA was not correlated with the number of mutual friendships ( $r = -.05$ ) or with peer acceptance ( $r = .13$ ).

Next, iterative sets of regression analyses were performed to assess whether EA was uniquely associated with the significant relations just described, after controlling for the effects of conceptually similar constructs. Given the differences in relationship formation and development trajectories for boys and girls during early adolescence, for each equation, the sex of the participant was entered as a control variable on the first step. Emotional intelligence, perspective taking, and empathic concern were then entered as control variables on the second step, and empathic accuracy was entered on the third step. These predictors accounted for 45% of the variance in friendship quality. EA was related to friendship quality in the predicted direction ( $\beta = .13$ ),  $t(91) = 1.70$ ,  $p < .05$ , one-tailed. In addition, empathic concern was positively associated with friendship quality ( $\beta = .24$ ),  $t(91) = 2.21$ ,  $p < .03$  (see Table 2). However, neither emotional intelligence nor perspective taking was associated with friendship quality,  $t_s(91) = 1.59, 1.28$ ,  $ns$ .

Contrary to our predictions, EA was not related to the number of mutual friendships ( $\beta = -.08$ ),  $t(99) = -.80$ ,  $ns$ . Emotional intelligence and empathic concern were also not related to the number of friends ( $\beta_s = .21, .17$ ),  $t_s(99) = 1.69, 1.25$ ,  $p_s > .05$ . However, and perhaps surprisingly, perspective taking was negatively related to the number of friends a child had ( $\beta = -.28$ ),  $t(99) = -2.35$ ,  $p < .02$ . There was no evidence that any of our measures predicted peer acceptance.

Children who scored higher in EA were less likely to experience relational victimization by their peer group than children who scored lower in EA ( $\beta = -.20$ ),  $t(100) = -2.08$ ,  $p < .05$ . However, EA was not significantly related to overt victimization ( $\beta = -.10$ ),  $t(100) = -1.02$ ,  $ns$ . However, the difference between the EA-relational victimization correlation and the EA-overt victimization correlation was not significant in this sample,  $t(113) = .64$ ,  $ns$ . Emotional intelligence, perspective taking, and empathic concern did not predict either relational or overt victimization. In summary, Hypothesis 1 was supported only for the measure of relational victimization and not for any of the other peer relations measures.

**Hypothesis 2.** We predicted that children with higher EA scores would be better adjusted than children with lower EA scores. At the most general level, EA was negatively correlated with total adjustment problems ( $r = -.27$ ,  $p < .01$ ). More specifically, EA was negatively

**TABLE 2:** Summary of Regression Analyses for Variables Predicting Adjustment by All Raters

Variable	All Raters (N = 95)											
	Internalizing Problems			Externalizing Problems			Social Problems			Total Problems		
	B	SE B	$\beta$	B	SE B	$\beta$	B	SE B	$\beta$	B	SE B	$\beta$
Sex of participant	.15	.06	.23*	-.24	0.07	-.34**	.00	.08	.01	-.09	.08	-.12
Perspective taking	.01	.01	.07	.02	0.02	0.11	.03	.02	.20 <sup>†</sup>	.02	.02	.10
Empathic concern	.01	.02	.06	-.04	0.02	-.023 <sup>†</sup>	-.01	.02	-.07	-.02	.02	-.11
Emotional intelligence	-.06	.10	-.08	.05	0.11	0.06	-.01	.12	-.02	.02	.12	.02
Empathic accuracy	-.02	.01	-.44**	-.01	0.01	-.011	-.02	.01	-.30**	-.01	.01	-.25**
$\Delta R^2$		.19			.01			.09			.06	
Total $R^2$		.23			.21			.12			.11	

NOTE:  $\Delta R^2$  refers to the change in  $R^2$  when empathic accuracy is added to the equation.

<sup>†</sup> $p < .10$ . \* $p < .05$ . \*\* $p < .01$ , one-tailed.

correlated with experiencing both social problems ( $r = -.26$ ,  $p < .05$ ) and internalizing problems ( $r = -.38$ ,  $p < .001$ ) and was marginally correlated with externalizing problems in the predicted direction ( $r = -.17$ ,  $p < .10$ ).

The same regression model that was used for Hypothesis 1 was employed here. The criterion variables were internalizing, externalizing, social, and total problems.<sup>7</sup> When the conceptually relevant control variables were added to the regression equation, EA was still uniquely and negatively related to internalizing problems ( $\beta = -.44$ ,  $sr = -.43$ ),  $t(90) = -4.65$ ,  $p < .001$ . However, emotional intelligence, perspective taking, and empathic concern did not predict internalizing problems, all  $ts < 1$ , *ns*.

EA was no longer marginally related to externalizing problems when the other measures were controlled,  $t(91) = -1.16$ , *ns*. However, none of the other trait measures predicted externalizing problems either. In sum, the results revealed that EA was uniquely predictive of adolescents' adjustment problems—in particular, of their internalizing problems.

Finally, EA was still uniquely and negatively related to social problems when the other measures were controlled ( $\beta = -.31$ ,  $sr = -.31$ ),  $t(90) = -3.06$ ,  $p < .01$ . However, emotional intelligence and empathic concern did not predict social problems,  $ts < 1.00$ , *ns*, whereas perspective taking was marginally, but positively, related to social problems ( $\beta = .20$ ,  $sr = .18$ ),  $t(90) = -1.69$ ,  $p < .10$ . The zero-order correlation between perspective taking and social problems was also positive but nonsignificant ( $r = .15$ ).

*Hypothesis 3.* Our third hypothesis proposed that a high level of empathic accuracy should help to “buffer” adolescents from the negative effects that poor peer relations have been shown to have on personal adjustment. In other words, poor peer relations should be associated with personal adjustment problems for adolescents

whose empathic accuracy is low but not for those whose empathic accuracy is high.

To test this hypothesis, iterative sets of moderated multiple regression analyses (MMR) were used. EA was treated as the presumed moderator variable (although its role in this regard must be definitively established across more than one investigation; see Aiken & West, 1991, p. 9). The presumed predictor variables were the number of mutual friendships, friendship quality, peer acceptance, overt victimization, and relational victimization. The dependent variables were the measures of internalizing, externalizing, social, and total problems. For each regression equation, sex of participant was entered on the first step as a control variable. Next, EA and one of the relationship variables were centered and entered as predictors on the second step. Finally, the cross-product of EA with the relationship variable was entered on the third step.

If this interaction term proved to be a significant predictor of the dependent variable measure in the regression analysis, we then examined how the association of the relationship variable to each adjustment variable changed across levels of empathic accuracy. In other words, we tested to see if the slope of the relationship between each peer relation variable and each personal adjustment variable was different for participants who were high versus low in EA. Only the significant findings are discussed here, but all associations between each peer relation variable with adjustment in interaction with EA are reported in Table 3.

Overall, the results were consistent with the hypothesis that high EA can buffer adolescents from the negative effects of poor peer relations on personal adjustment. Out of the 20 interactions tested, 12 were statistically significant, and slope tests consistently revealed the predicted buffering effect. As the summary data in Table 3 reveal, friendship quality interacted with EA for the outcome variables internalizing problems, externalizing

**TABLE 3:** Relation (B Weights) of Peer Relations to Adjustment as a Function of Empathic Accuracy Levels

Combination of Measures	Level of Empathic Accuracy			t value
	-1 SD	0 SD	+1 SD	
Total Friendship Quality ×				
Internalizing Problems	-.25**	-.13†	-.01	1.99*
Externalizing Problems	-.33**	-.18*	-.04	2.00*
Social Problems	-.29**	-.11	.08	2.47*
Total Problems	-.22†	-.12	-.02	1.25
Number of Friends ×				
Internalizing Problems	-.16	-.10	-.04	0.95
Externalizing Problems	-.45**	-.30**	-.15	2.20*
Social Problems	-.44**	-.20**	.03	3.10**
Total Problems	-.32**	-.13†	.06	2.38*
Peer Acceptance ×				
Internalizing Problems	-.30**	-.14*	.03	2.64**
Externalizing Problems	-.47**	-.31**	-.15	2.47**
Social Problems	-.57**	-.29**	-.01	4.20**
Total Problems	-.42**	-.21**	.00	2.97**
Overt Victimization ×				
Internalizing Problems	.26**	.15**	.05	-1.89†
Externalizing Problems	.47**	.47**	.46**	-0.15
Social Problems	.47**	.29**	.10	-3.17**
Total Problems	.28**	.21**	.14	-1.02
Relational Victimization ×				
Internalizing Problems	.33**	.30**	.27**	-0.53
Externalizing Problems	.39**	.34**	.29**	-0.87
Social Problems	.47**	.32**	.17	-2.47**
Total Problems	.24**	.16*	.08	-1.15

NOTE: Significant *t* values signify differences in the simple slopes as a function of empathic accuracy (i.e., the *t* values for the Measure × Empathic Accuracy interactions). Simple slopes that significantly differ from zero are boldface.

†*p* < .10. \**p* < .05. \*\**p* < .01.

problems, and social problems, such that lower scores on these peer variables were associated with worse adjustment outcomes only when EA was low (*srs* = -.25, -.28, -.26), *ts*(91) = -2.77, -3.10, -2.62, respectively, *ps* < .01, and not when EA was high (*srs* = .01, -.04, .06), *ts*(91) = -.09, -.38, -.65, respectively, *ns*.

Number of friends interacted with EA for the outcome variables externalizing problems, social problems, and total problems, such that lower scores on these peer variables were associated with worse adjustment outcomes only when EA was low (*srs* = -.40, -.27, -.29), *ts*(99) = -5.00, -3.09, -3.13, respectively, *ps* < .01, and not when EA was high (*srs* = -.13, -.03, -.05), *ts*(99) = -1.59, -.03, -0.52, respectively, *ns*.

Peer acceptance interacted with EA for the outcome variables internalizing problems, externalizing problems, social problems, and total problems, such that lower scores on these peer variables were associated with worse adjustment outcomes only when EA was low (*srs* = -.20, -.40, -.38, -.27), *ts*(99) = -2.42, -5.13, -4.79, -3.17, respectively, *ps* < .02, and not when EA

was high (*srs* = .02, -.04, -.01, .00), *ts*(99) = .28, -.47, -.14, .04, respectively, *ns*.

Overt victimization interacted with EA for the outcome variables internalizing problems, and social problems, such that higher scores on these peer variables were associated with worse adjustment outcomes only when EA was low (*srs* = .21, .35), *ts*(99) = 2.52, 4.42, respectively, *ps* < .01, and not when EA was high (*srs* = .04, .08), *ts*(99) = .49, .94, respectively, *ns*.<sup>8</sup>

Finally, relational victimization interacted with EA for the outcome variable social problems, such that higher scores on this peer variable were associated with worse adjustment outcomes only when EA was low (*sr* = .39), *t*(99) = 4.91, *p* < .01, and not when EA was high (*sr* = .12), *t*(99) = 1.59, *p* = .12.

In summary, our tests of Hypothesis 3 revealed that a high level of empathic concern helps “buffer” adolescents against the harmful effects of poor peer relations on their personal adjustment. This buffering effect was particularly evident for the dependent variables of internalizing and social problems.

## DISCUSSION

The present study explored the links connecting empathic accuracy to the quality of peer relationships and to various adjustment problems during adolescence. The empathic accuracy paradigm (Ickes, Bissonnette, Garcia, & Stinson, 1990) has been used with adults only. The present study is, to our knowledge, the first to apply the empathic accuracy paradigm to the study of adolescents’ ability to accurately infer other people’s thoughts and feelings. The results of this study suggest that empathic accuracy plays an important role in adolescents’ peer relationships and their overall adjustment. As an empirically unique predictor, it was negatively correlated in the present study with experiencing relational victimization, and it was also negatively correlated with experiencing various types of adjustment problems. In addition, higher levels of empathic accuracy helped to “buffer” children against the harmful effects of poor peer relations.

### *The Link Between Empathic Accuracy and Peer Relationships*

In partial support of Hypothesis 1, we found that empathic accuracy was negatively related to experiencing relational victimization for both boys and girls. The generality of this effect leads us to speculate that the desire to avoid relational victimization (i.e., acts meant to harm one’s relationships) is a strong, primary motive evoked in children’s relationships and that empathic

accuracy is used by both sexes as a way to either avoid or minimize such victimization.

Although our performance-based measure of empathic accuracy was not related in the present study to the number of mutual friends a child had or to the level of acceptance by his or her peer group, the child's emotional intelligence was positively related to these variables. It is not yet clear, however, why the presumably broader construct of emotional intelligence predicted the only two specific aspects of children's peer relations that their empathic accuracy did not.

Why did empathic accuracy predict relational victimization but not the other peer relations outcome measures? One possibility is that avoiding relational victimization involves avoiding a bad interpersonal outcome, whereas the other measures involve achieving conventionally good interpersonal outcomes such as forming and maintaining friendships. Empathic accuracy may be particularly useful in alerting children to threats to their status as valued relationship partners but may play less of a role in friendship formation and maintenance. However, emotional intelligence, which assesses an emotional regulation factor that empathic accuracy does not, may be a better predictor of the number of mutual friends a child has or the child's level of acceptance by his or her peer group because failures of emotional regulation can have strong damaging effects on forming friendships and being accepted by others.

#### *The Link Between Empathic Accuracy and Adjustment*

As predicted by Hypothesis 2, empathic accuracy was negatively related to social problems and to the various types of internalizing problems. The negative correlation between empathic accuracy and social problems is clearly predicted by our theoretical model (see Figure 1). The negative correlation between empathic accuracy and internalizing problems is consistent with previous findings that indicate that if people fail to develop close personal relationships, they are more likely to report unhappiness, depression, and other "internalized" adjustment problems (Baumeister & Leary, 1995). (For a review of the evidence that empathic accuracy is both a cause and a consequence of relationship closeness, see Flury & Ickes, 2006; Ickes, 2003, chaps. 5, 7, 11.)

Neither empathic accuracy nor any of the other trait measures was a good predictor of the externalizing problems. Previous research examining the link between empathy and aggression suggests that empathy may be a useful tool in decreasing acts of aggression toward peers (Miller & Eisenberg, 1988). It is important to note, however, that although empathic accuracy may be

useful for understanding other people and achieving better social coordination (Ickes, 2003; Simpson et al., 2001), it might not be sufficient to counter the effects of impulsive behavior.

When children are unexpectedly provoked by others, they may "act out" in ways that are temporarily unconstrained by their knowledge of other people's thoughts and feelings. Because externalizing problems have consistently been associated with impulsivity and hyperactivity (Masten & Coatsworth, 1995), the children who often exhibit these problems may not be deficient in their empathic accuracy but may instead be deficient in their capacity for effective self-regulation. Despite this qualification, the present findings suggest that children who are more adept at inferring accurately the specific thoughts and feelings of others are generally more likely to develop better interpersonal relationships (i.e., fewer social problems) and fewer internalizing problems.

#### *Empathic Accuracy as a Moderator of the Link Between Peer Relations and Adjustment*

Finally, we examined whether empathic accuracy moderates the influence of peer relations on children's adjustment. Our model suggests that a high level of empathic accuracy should help to "buffer" adolescents from the negative effects that poor peer relations have been shown to have on personal adjustment. In other words, poor peer relations should be associated with personal adjustment problems for adolescents whose empathic accuracy is low but not for those whose empathic accuracy is high. Consistent with this hypothesis, we found that of the 20 interactions we tested, 12 were statistically significant, and slope tests consistently revealed the predicted buffering effect. The effect was particularly evident for the dependent variables of internalizing and social problems.

This buffering process seems to work both ways. Just as a high level of empathic accuracy appears to buffer children against the harmful effects of poor peer relations, so do good peer relations appear to buffer children against the harmful effects of low empathic accuracy. In other words, the two risk factors (low empathic accuracy and poor peer relations) do not have a cumulative effect but rather a conjoint effect. It is only when low empathic accuracy and poor peer relations co-occur that the various problems in adolescents' adjustment are clearly evident.

#### *Implications for the Study of Empathic Accuracy in Personality and Social Psychology*

Mainstream personality and social psychologists are often accused, with some justification, of paying too little attention to the developmental antecedents and

continuities of the phenomena they study. The present investigation is therefore important in providing a bridge between the positive correlates of empathic accuracy that have been documented in our young adolescent sample and the positive correlates of empathic accuracy that have been documented in adults. In addition, the present findings should provide a compelling reason for personality and social psychologists to explore such developmentally relevant questions as (a) the extent to which individual differences in empathic accuracy are heritable versus learned; (b) the extent to which low empathic accuracy is implicated in personality, clinical, and developmental disorders in which poor social relationships are a common symptom; and (c) the extent to which—and the ways in which—individual differences in empathic accuracy both shape and are shaped by specific types of social relationships (e.g., familial, peer, collegial, dating, and marriage relationships). Empathic accuracy researchers can be expected to play a major role in all of these endeavors.

#### *More Specific Directions for Future Research*

The adult literature on empathic accuracy raises a number of more specific questions that could profitably be explored in studies of children's peer relationships. First, as in the studies with adult samples, do adolescent friends have an advantage over adolescent strangers when attempting to infer their partners' thoughts and feelings? Second, when is being empathically accurate beneficial versus harmful in adolescents' peer relationships? Third, is there a bidirectional relationship between empathic accuracy and the quality of peer relationships, such that enhanced empathic accuracy is both a contributor to and an outcome of good peer relationships? Fourth, do we need to assess not only children's empathic accuracy ability but also their ability to know when to use this skill in social situations? Perhaps the children who have the best developmental outcomes are not just those with the greatest empathic accuracy but rather those who also know when it is appropriate and desirable to use this skill. For example, children who are good at inferring the thoughts and feelings of their peers, and who then use this information to harm others, may be at a high, rather than a low, risk for adjustment difficulties.

#### *Conclusions*

In sum, the present research suggests that empathic accuracy is an important individual difference related to peer relations and adjustment. Adolescents who are better at inferring the thoughts and feelings of others are more likely to experience better peer relations and are less likely to experience "internalizing" adjustment problems than children who are not as good at inferring

the thoughts and feeling of others. Complementing these findings, our data further reveal that the children who are at the greatest risk for adjustment difficulties such as internalizing problems and social problems are those who are low in empathic accuracy and have poor peer relationships. In the present study, these children were distinctively vulnerable to a range of adjustment problems that included internalizing, externalizing, social, and total problems.

On the positive side, the present findings suggest that having a "positive" standing on either type of risk factor can buffer children against the harmful effects of having a "negative" standing on the other risk factor. Just as a high level of empathic accuracy can buffer children against the otherwise harmful effects of poor peer relations, so can good peer relations buffer children against the otherwise harmful effects of low empathic accuracy. These findings therefore suggest two ways to intervene in the social lives of children with adjustment problems: (a) help them improve their overall level of empathic accuracy (see Marangoni et al., 1995) and/or (2) help them develop quality friendships that will sustain them despite their lower level of empathic ability.

#### NOTES

1. We are aware of no studies in which the test-retest reliability of empathic accuracy has been reported.
2. For the sake of space, late childhood and early adolescence are hereafter referred to as adolescence.
3. Many of our measures were collected at multiple times or from multiple raters. As in this instance, these measures were moderately to highly correlated and were therefore z-scored and averaged to create overall composite measures. A summary table of the relevant correlations is available from the first author on request.
4. Each tape was approximately 24 min. The individual interaction segments averaged about 30 s each.
5. This timetable for data collection—dictated by practical necessity—enabled us to collect all of the empathic accuracy data within a single semester. Unfortunately, it also precluded us from collecting a substantial portion of the data in the causal sequence implied by our theoretical model. That is why we are constrained to test general predictions derived from the model that do not concern the specific causal sequence involved.
6. Supplementary analyses supported this decision by revealing that the patterns of results were virtually identical for teacher targets (ETI) and peer targets (EPI).
7. Peer reports were available only for the measures of internalizing and externalizing problems. Thus, they were part of the average composite for these measures only.
8. The interaction term for Overt Victimization  $\times$  Empathic Accuracy was marginal,  $t = -1.89$ ,  $p < .10$ , but the simple slopes for low and medium empathic accuracy were statistically significant (see Table 3).

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