

AFFECT MATCH AND PROSOCIAL RESPONSES AS A FUNCTION OF EMPATHY

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Affect Match and Prosocial Responses as a Function of Empathy

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ABSTRACT

This investigation examined three related areas: Children's (9-year-olds') empathy, their affect match responses in an experiment assessing the effects of discordant and concordant cue conditions, and their prosocial helping responses, assessed in an experimental context. Children were assigned to either a High or Low Empathy group based upon their scores on an affective-cognitive measure of empathy in responses to video-taped stimulus vignettes (the Empathy Continuum, EC). Consistent with the expected greater affective responsiveness of empathic persons, results supported the hypothesis that children in the high versus low empathy group would obtain higher affect match scores across conditions (concordant and discordant cues) of a separately conducted affect match experiment. Also, as expected (across empathy groups), concordant versus discordant cue conditions resulted in greater affect match responses. Furthermore, consistent with theory linking empathy with prosocial behavior, results supported the hypothesis that children in the high versus low group would provide more help. In addition, a number of more specific hypotheses were investigated regarding expected differences for children in the high and low (EC) groups in their affect match responses

to the cues manipulated in the experiment, as well as the relationship of affect match scores to helping. Results supported most of these hypotheses, as well as providing an unexpected finding of gender differences in children's helping (girls helped more than did boys). Present findings are discussed in the light of theories which generated the hypotheses and the specific methods employed.

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Affect Match and Prosocial Responses as a Function of Empathy

In the present investigation three related variables (empathy, affect match, and prosocial behavior) are investigated in order to address three main sets of issues and hypotheses. This investigation will provide information regarding the cues eliciting children's affective responses, and should be pertinent to researchers interested in the cognitive and affective mediation of children's responses to others' emotions and contexts, as well as to those interested in the links between affective responsiveness, empathy and prosocial behavior.

The three main topic areas are each described briefly below. A review of theory and research pertinent to each of these areas will then follow. The first topic examined is children's empathy, defined in contemporary terms as an affective-cognitive construct (Eisenberg & Strayer, 1987) involving concordant emotions in response to others' emotions, and mediated by different cognitive attributions (Hoffman, 1975; Strayer, 1987a). Empathy is assessed using a procedure (Strayer, 1987b; 1989) scoring children's affective and cognitive responses to persons in affectively evocative events witnessed on videotape. This procedure is referred to as the Empathy Continuum.

events witnessed on videotape. This procedure is referred to as the Empathy Continuum.

The first hypothesis concerns children's independently assessed empathy and its effect on their affect matching in a separate experiment investigating cue conditions facilitating or impeding affect matching. It is hypothesized that children's affect matching (i.e., extent of match between the subject child and stimulus child's emotion across experimental conditions) in the experiment should vary as a function of their more general empathy assessed in an independent procedure. Children with high empathy (i.e., Empathy Continuum scores) across a range of different emotions and contexts, should be more sensitive than their low empathy peers to the emotion cues presented, resulting in higher affect match scores across conditions. Expected differences for affect match within the experimental cue conditions studied will also be examined. These cue conditions are concordant cues of a "happy" child in a "happy" situation and a "sad" child in a "sad" situation, and discordant cues of a "happy" child in a "sad" situation and a "sad" child in a "happy" situation.

The second topic examined is children's prosocial helping behavior. Empathy's motivational role in facilitating prosocial behavior (Batson, 1987; Hoffman, 1975;

Stotland, 1969) is presently investigated in an experimental context. Differences in children's helping responses are examined as a function of their high or low empathy (i.e., Empathy Continuum scores) used as an independent grouping variable. Furthermore, because helping is the dependent variable in an experiment duplicating conditions in the affect match experiment, we can assess children's helping as a function of the same experimental conditions used to assess affect match. The more general association of the dependent measures, affect matching and helping responses, is also examined.

The last topic examined is affect matching. Affect match is generally defined as an emotion experienced by a person that is concordant with and elicited by an emotion identified in another person. Although affect match has been used as a measure of empathy in previous studies of children (e.g., Feshbach & Roe, 1968), there are differences between the two variables. Affect match is an important variable to examine in its own right because little is known about the stimulus conditions that facilitate or impede it. In the present research, we present an experiment studying affect match responses in the context of stimulus factors (e.g., concordant or discordant sets of facial expressive and situation cues to emotion) influencing both children's

understanding of emotions and their concordant emotional arousal.

The three variables (affect matching, empathy, prosocial helping) summarized above provide the framework for the literature review that follows. Material is presented that is pertinent to the sets of hypotheses for each of these three variables. A summary repetition of hypotheses is presented at the conclusion of the introduction.

Although no gender-related difference is hypothesized, sex of the subjects was used as a classification factor to assess the generality of the results. Sex differences in empathy and affect matching have been found to be inconsistent across studies (Eisenberg & Miller, 1987; Eisenberg-Berg & Lennon, 1983; Hoffman, 1977; Lennon & Eisenberg, 1987). For example, self-report scores of emotion tend to be higher for girls in some studies. In other studies, however, facial/gestural and physiological measures indicate no sex differences at all (Barnett & McMinimy, 1988; Eisenberg & Miller, 1987; Lennon & Eisenberg, 1987). As well, gender differences in helping behaviors depend a great deal on the kinds of measures and procedures used (Eisenberg & Miller, 1987). Thus, females may be more inclined to give the more "nurturant" kind of helping (e.g., comforting another child) than males (Eisenberg & Mussen, 1989). In

contrast, males tend to be more helpful than females in situations where physical help is needed (e.g., helping in an experimental task; see Eisenberg & Fabes, 1993).

Furthermore, the kind of empathy measure utilised affects children's potential helping behavior. In a study reported by Feshbach and Feshbach (1986), two kinds of empathy measure were used. One concerned affect matching based on the match between the child's and stimulus child's affective response. The other was based on the same affect matching procedure together with a measure of the intensity of emotion. It was reported that affect match with the first measure was positively associated only with girls' prosocial behavior. Affect match with the second measure was associated with prosocial behavior only with boys who empathized in dysphoric situations than with boys who did not empathize in these situations. Girls' prosocial behavior remained constant across the two kinds of empathy measure used (Feshbach, 1982; Feshbach & Feshbach, 1986). Taken together, these mixed findings suggest that more research is needed before more definite conclusions can be made about gender differences in empathy and prosocial behavior.

Affective Responses and Empathy

The first topic of interest concerns children's empathy and its relation to affect matching. Previous investigations of children's empathy have usually relied only on affect matching or emotion recognition as the dependent variable. An example is the pioneering work done by Feshbach and Roe (1968), who presented children with narrative situational information (e.g., a happy child at a birthday party) and slides consistent with the information, using a procedure similar to the present one for scoring affect match. Other studies have used affect match (e.g., Burns & Cavey, 1957; Denham, 1986; Feshbach, 1980, 1982; Iannotti, 1975, 1978; Iannotti & Pierrehumbert, 1985; Mood, Johnson & Shantz, 1978; Sawin, 1979) and emotion recognition (e.g., Deutsch, 1974; Gnepp, 1983; Gnepp, Klayman, & Trabasso, 1982; Urberg & Docherty, 1976) to study children's responses to both concordant and discordant combinations of facial expressions and situational cues. Although affect matching has been used as the sole measure of children's empathy in some past studies, we believe more precise measures can be obtained when factors influencing affect matching are separately examined, and when empathy is operationalised in more contemporary terms as a cognitive-affective construct.

Affect matching may not be a sufficient measure of empathy because it does not assess cognitive-affective mediations which are part of empathy, considered as a cognitive-affective construct (Hughes, Tingle, & Sawin, 1981; Hoffman, 1975). Therefore, an independent measure of empathy was used in the present study. Empathy in the present study has been operationalized in terms of a multidimensional measure, the Empathy Continuum (EC), developed by Strayer (1987a, 1989, 1993). The EC is based on developmental models of empathy, conceptualized in both cognitive and affective terms (Feshbach, 1975, 1982; Hoffman, 1970, 1975). The models of Feshbach and Hoffman will be briefly discussed as background for the present study of children's empathy.

Feshbach's (1975) model requires concordant affect (affect matching) between empathizer and the elicitor of empathy. It is presumed that this matching entails the cognitive abilities of emotion recognition and affective perspective taking. Although cognitive factors are part of Feshbach's conceptualization of empathy, these factors are not examined in her model or related research (e.g., Feshbach & Roe, 1968; Feshbach, 1987). In Feshbach's research using affect match as a measure of empathy, young respondents are asked to report any emotion they felt upon hearing a narrative presenting situational information conveying a

consensually clear emotion (e.g., a happy child at a birthday party). The degree of match between the young respondent's reported emotion and the (previously determined) content of the stimulus narrative indicates children's empathy with the stimulus child. Empathy is assessed only in terms of degree of affect match, with emotion recognition and affective perspective taking presumed to operate implicitly. This work was pioneering in both its conception of empathy as requiring affective responsiveness, and its provision of an empirical measure suitable for young children (aged 6-7 years). Much subsequent research on children's empathy has been based on adaptations of this conceptualization and assessment method.

Hoffman's (1975) model shares similarity with Feshbach's in maintaining that concordant affect is central to empathy. However, Hoffman's (1975, 1982a, 1982b) developmental model of empathy maintains that empathy involves different kinds of cognitive mediation, prompting and/or clarifying the experience of empathic emotions. Cognitive mediation alters the ways in which empathy is experienced. Furthermore, the model specifies some of the cognitive mediators for empathic emotion, and proposes some developmental sequence for these. For example, at very young ages empathy precursors include "emotional contagion" or emotions elicited by others' expressed emotion (e.g., an infant crying upon hearing

another infant cry). Such events are unlikely to be experienced with the self-other differentiation considered necessary for mature empathy; however, they suggest a genesis for empathy as an emotionally-responsive process. More mature levels of empathizing are characterized by a more differentiated focus upon the other person's internal experience. The range of empathy mediators between these two points, include simple cognitive mediations such as mimicry, or more complex mediations, such as transposition of oneself into the other's context and affective role taking.

Hoffman's model has remained largely theoretical until recently. It has been adapted, along with Feshbach's and related research on children's understanding of persons and emotions (Hughes, et al., 1981; Selman, 1980), into Strayer's Empathy Continuum measure (1987a; 1989; 1993).

The Empathy Continuum (EC) provides an interview and scoring method for assessing person's experience of empathy reported in response to viewing emotionally evocative videotaped stimuli. The procedure and scoring are described in detail in the Method section. At this point, we present a brief conceptual overview of the measure.

The Empathy Continuum (EC) is based upon the joint (dual) role in empathy both of concordant affect between observer and stimulus person and of different cognitive

mediators in shaping empathic experience. An empathy score is, therefore, based on concordant affective responsiveness to another's emotional stimulus context and the person's attribution for his or her affect, scored in terms of empathy-relevant cognitive mediators, derived from developmental models of empathy and interpersonal understanding (Strayer, 1987a, 1993).

One central hypothesis is examined regarding empathy and affect match. It will be examined using high and low empathy as a grouping variable in an analysis of variance (ANOVA) design with affect match scores as the dependent variable. This hypothesis tests the theoretical expectation that empathy assessed across a set of different, emotionally evocative stimuli will significantly predict emotional responsiveness (affect matching) across the experimental conditions. The hypothesis states that children in the high empathy group (EC scores above median) will have higher affect match (AM) scores across all four experimental cells than will children in the low empathy group.

This is because concordant affect in self and other is considered to be an integral part of empathic responding (Eisenberg, 1989; Feshbach, 1975; Hoffman, 1975; Strayer, 1987a), regardless of cue condition. Although cue conditions affect empathy (as will immediately be presented) children

who are more generally empathic than their peers should show this across both facilitating and impeding experimental conditions.

Despite expected quantitative differences in affect match responsiveness across conditions, both children with high empathy (EC) scores and those with low empathy (EC) scores are expected to show the same pattern of affect matches relative to the experimental cue conditions.

According to Hoffman (1975), salience of emotion cues affect the observer's affective and empathic experience: salient, often vivid, expressive cues can hold the observer's attention and keep alive the empathic process. Clarity and consistency of emotion cues may aid empathy, especially in children (Strayer, 1987a).

In contrast, because empathy entails concordant emotional responsiveness, any impediment to the correct apprehension of another's emotion may impede empathy. Discordant cues, contrasting the two (situation and emotion) sources of information, should deflect the emotional impact rendered, as well as place greater cognitive demands upon the observer, thereby lessening his or her empathy. Smither (1977) posited that when the situational and emotional cues are discordant, then one cannot empathize because one "cannot make sense of the other's reactions" (p. 258). Rather than

facilitating empathy, Hoffman (1975, 1984) suggested that ambiguous situations may facilitate faulty projection, and rationalizing responses, or even turn the subject away from the stimulus person. Thus, when cues are discrepant, confusion may result, leading to a search for cognitive clarity before concordant emotions and empathy in response (to the person's situation or emotion cues) can even be engaged.

Many emotional contexts contain both situational and expressive (emotion) cues. Because both situation and emotion cues are important in eliciting empathy (Hoffman, 1977; Strayer, 1987a), individuals high in empathy may be particularly aware that people sometimes do feel and act in incongruous ways (Goldstein & Michaels, 1985; Hoffman, 1975, 1987). We expect that this awareness will enable the empathic observer to empathize with the stimulus person across all conditions, albeit with possibly diminished impact under discordant cue conditions (Hoffman, 1975, 1981, 1987). "Even highly empathic individuals are not expected to be empathic in ambiguous situations where the affects experienced by the protagonists may be unclear, or in situations where there may be conflicting affective and social cues" (Feshbach & Feshbach, 1986, p. 195). Thus, the pattern of affect match responses will be similar for both

high and low empathy groups. Nevertheless, children with high empathy on the present cognitive-affective empathy (Empathy Continuum/EC) measure, are expected to be better able than their less empathic (low EC scores) peers to respond with more concordant emotions to the stimulus person's emotion, even in discordant conditions.

In summary, applied to the present study, theory and previous findings suggest that high empathy children will show greater affect matching than their low empathy peers.

Prosocial Helping Behavior

The second variable examined concerns children's prosocial behavior, particularly their helping responses. These responses are examined both as a function of children's independently assessed empathy (EC scores) and in relation to their affect match responses in the experiment assessing concordant-discordant conditions.

There are some noteworthy differences in the present methods that may affect how empathy (EC) and affect matching (AM) are expected to relate to helping behaviors. Both helping responses and affect match scores are assessed in response to similar stimulus materials, whereas the Empathy Continuum scores are derived from a different procedure. The more similar the contexts for assessing both affective

involvement and prosocial behavior, the more likely it is that their relation is enhanced (Eisenberg & Miller, 1987; Peraino & Sawin, 1981; Strayer, 1987a, 1987b). This might suggest a stronger relationship of helping responses with affect match than with empathy scores. However, as has been stated, because empathy entails more than affective matching, the EC is expected to assess more comprehensively this construct (empathy) than present affect matching scores. Therefore, differences in helping responses as a function of empathy (EC scores) are expected even when these two variables are measured in separate contexts.

After participating in all four cells (win-happy, win-sad, lose-happy, lose-sad) of the affect matching experiment, children are told that one of the children previously seen will return to play the full game in the adjacent room, and that they can watch (via short-circuit T.V) how this "peer" (an experimental confederate) does on each turn of the game. Subject children are shown the peer in one of the four randomly assigned cells.

In the present helping experiment, it was decided that a credible prosocial measure requires the child to enact prosocial behavior in a real context involving a "net cost to the actor" (Hoffman, 1976, p. 124). This is based on previous findings that as costs increase, helping decreases

(Piliavin, Dovidio, Gaertner & Clark, 1981, 1982; Staub, 1974). At the same time, the child is placed in an experimental situation which provides an easy means of escape. That is, the child is alone and not visible to the target of helping, and presumably, would feel no pressure to help unless s/he felt inclined to do so.

The specific prosocial behavior measured is the frequency of helping responses children give to the stimulus child, measured in terms of the number of trials (maximum=10) on which they give help to the peer at cost to themselves. The subject can receive 10 quarters from 10 trials but must forgo a quarter each time s/he helps the stimulus child. The subject has the option of keeping all the quarters for the trials in which s/he did not help.

Help is provided as privileged information which the subject can give to the peer, regarding the correct responses for each of 10 trials on a game in which the subject child observes the confederate peer play. The subject is able to relay this information to the playing child in order to insure his or her winning each trial. The subject is not competing or playing the same game, but is merely an observer who can help or hinder (by giving false information) the player. This procedure is described fully in the Method

section, and we will now concentrate on the specific hypotheses and their rationale.

It is expected that a child's independently assessed empathy (EC scores) will affect their prosocial responses, and that each of the four experimental manipulations (2 situations x 2 emotions) will elicit differing amounts of helping responses across children. There is little previous research on helping responses as a function of the situation and emotion cue conditions studied here with the exception of a study on children's helping behavior as a function of concordant versus discordant sad facial cues (Carlo, Knight, Eisenberg, & Rotenberg, 1991). The rationale offered for the present hypotheses is based on theoretical expectations regarding the ease or difficulty of antecedent situation and emotion conditions to promote prosocial responsiveness in the stimulus child.

Two hypotheses are investigated. Hypothesis 2 states that children in the high empathy group will provide significantly more helping responses than will children in the low empathy group. Hypothesis 3 states that the greatest helping will occur in response to the lose-sad concordant stimulus condition compared to the other three experimental cells.

To the extent that prosocial behavior is mediated by empathy, as has often been suggested in studies for both adults and children (Batson & Coke, 1981; Coke, Batson, & McDavis, 1978; Eisenberg & Miller, 1987; Hoffman, 1975, 1977; Staub, 1970, 1971, 1978; Strayer & Schroeder, 1989; Toi & Batson, 1982), it is hypothesized that children with high empathy (EC) will provide significantly more helping responses than will children in the low empathy (EC) group. The rationale for this hypothesis is that affective involvement increases the likelihood of both attending to the stimulus and trying cognitively to figure out what is causing the emotion, as well as what to do to relieve the affective states aroused in oneself and witnessed in the other person (Strayer, 1987a).

Theoretically, the ability to perceive, understand, and be involved in the affective states of others - that is, the capacity to empathize - has been proposed to mediate prosocial helping. There is empirical support for this proposition. For example, high empathy adults (those experiencing the most empathic emotion) offered more help than low empathy adults after hearing about the plight of a needy person (Batson & Coke, 1981; Coke et al., 1978). Some similar findings with children have been reported (Barnett, 1982; Peraino & Sawin, 1981; Poole, 1991). Nevertheless,

this issue is particularly important given that relevant research reviews have reported that the relationship between empathy and prosocial helping is inconsistent in children (Eisenberg & Miller, 1987; Underwood & Moore, 1982).

The second prosocial hypothesis concerns the influence of stimulus cue conditions on helping behavior. It predicts that the lose-sad concordant condition should motivate the greatest number of helping responses compared to the other three experimental cells (Hypothesis 3). Of the four cells, the lose-sad cell offers the most salient and unambiguous information regarding a negative, needy state. Past theory and research findings suggest that empathic children may be particularly sensitive to others' distress (sadness) cues (Barnett, Howard, Melton & Dino, 1982). In part, this hypothesis stems from the greater practical importance of empathizing with "negative" emotions that convey greater functional need than do "positive" emotions, in response to which nothing generally needs to be done. Although both positive- and negative- valence emotions can be empathized with, most previous empathy research has focused more on negative (sad, distressed) emotions. Hoffman (1983) reported that both children and adults "typically react with empathic distress to another's pain or discomfort" (p. 252).

This lose-sad cell should motivate the empathizer's search for strategies to alleviate the other's (and his or her own empathically shared) dysphoric emotion. The most obvious and available strategy in the present study is to provide the victim with help in the form of information. Theory and research pertinent to this hypothesis follows.

Clear distress in another person affects positively the observer's judgment of the situation as one in which help is needed (Gaertner & Dovidio, 1977; Pearl, 1985; Sterling & Gaertner, 1984). It leads to greater intensity of the observer's emotional response (Batson et al., 1987; Hoffman, 1975) and to lower latency of the helping response (Hoffman, 1975; Peraino & Sawin, 1981). Aronfreed (1970) reported that the evocation of distress cues in the stimulus person is an essential component of the conditioning of empathy. Such experiences may be generalizable to the formation of empathic "traits". This is suggested by Hoffman's (1975) prediction that children whose "empathic proclivities have been strengthened by being allowed the normal run of distress experiences rather than being shielded from them" (p. 618) should be more prosocial than children who have not been given such an opportunity. Feshbach (1982) similarly suggested that empathic responsiveness and helpfulness may be enhanced by some optimal level of dysphoric experiences.

Not surprisingly then, studies in empathy and prosocial helping tend to use "sad" cues in order to study empathy and empathy-motivated prosocial responding. For example, Barnett et al. (1982) reported that when pain or sadness was salient in others, both adult and child empathic observers were more responsive than nonempathic observers to others' needs. Similar results have been found in other research (Batson, 1987; Batson, Fultz, & Schoenrade, 1987; Bryan & London, 1970; Feinberg, 1977; Leiman, 1978; Staub, 1970; Toi & Batson, 1982). Therefore, sadness elicited by others' emotion or context is viewed as an important variable eliciting empathy's motivation of prosocial behavior.

Research studies also provide evidence that empathizing with another's sadness or distress has been positively related to spontaneous helping behaviors (Batson & Coke, 1981; Hoffman, 1975; Peraino & Sawin, 1981; Toi & Batson, 1982). Barnett (1982) reported that young children frequently respond prosocially to obvious displays of distress by others. This is particularly evident in experiments in which subjects were asked to focus on the plight of the victim or the sadness of the other person (Barnett, Howard, King, & Dino, 1981; Barnett, King, & Howard, 1979; Howard & Barnett, 1981; Thompson, Cowan & Rosenhan, 1980). This association between empathy and

helping is considerably stronger if empathy and helping are directed to the same person. As shown by Peraino and Sawin (1981) in an experimental setting, children's empathy with a child related to helping that child. Similarly, in a naturalistic setting, Radke-Yarrow, Zahn-Waxler, and Chapman (1983) found many instances in the home situation of young children's prosocial behaviors in response to another's sadness or distress. In naturalistic peer settings, Strayer (1980) and Denham (1986) similarly found that distress emotions in preschool children were responded to prosocially by their peers. As well, helping was a common proposal made by older children who witnessed others' sadness (Strayer & Schroeder, 1989). Overall, then, there is considerable evidence to support the view that the child's empathic response to viewing another's sadness is predictive of subsequent helping or prosocial responding.

In contrast, in our experiment, the "happy" child who has won, should elicit fewer helping responses. This is expected because the redundant (concordant) cognitive and emotional cues indicate that this child would not need assistance. Lennon and Eisenberg (1987) found that happy affect in preschoolers was unrelated to the receipt of prosocial (e.g., helping) behaviors. However, research on mood states and the provision of helping indicate that

positive affect can facilitate helping but only when that affect is self-focused (Isen, 1987). To summarize, when the positive affect is focused on another person, as in the present study (child wins game and is happy), helping has been found to be inhibited (Barnett, 1982; Rosenhan, Salovey & Hargis, 1981). As mentioned above, the happy person would not need assistance.

The two remaining discordant experimental cells should occupy intermediate positions in eliciting prosocial behavior. The happy child who was observed to have lost the game, and the sad child who was observed to have won it, present discordant person-situation cues. Although these examples indicate some "need", reflected either by a situation or a person cue, prosocial behaviour should be reduced because the cues are discrepant (Clark & Word, 1972; Staub, 1978).

Helping in the win-sad case may be expected to be less likely than in the lose-sad case because the ambiguity and uncertainty concerning another's distress (e.g., the discordant cue condition) do not provide a clear source for the attribution of the observer's own possible arousal. This can create dissonance, stress or discomfort which may inhibit the observer's helping behavior (Staub, 1970; Sterling & Gaertner, 1984). It is probable that when faced with such

dissonance children provide their own rationale for discordant conditions. For example, the "happy" child may be considered to be faking; the "sad" one as having more than the game on his or her mind (Cole, 1986; Gnepp, 1983; Saarni, 1979; Shennum & Bugenthal, 1982). Nevertheless, there are few stated theoretical guides and little previous research as to whether situation or emotion cues should prove more salient in these discordant conditions for eliciting prosocial responses in children. Therefore, both discordant cells are considered equivalent and less effective than the sad concordant condition for eliciting prosocial behavior.

To summarize, high empathy (EC) children should provide more prosocial responses across all four experimental conditions than low empathy children. Furthermore, the greatest number of prosocial responses (number of trials the subject helps) should occur in the lose-sad concordant condition compared to the other three conditions.

Affect Matching and Prosocial Helping Behavior

In addition to empathy's predicted effect on helping behaviors, we are also interested in the correlation between affect matching and children's helping behaviors. We have, earlier in this introduction, distinguished between responses indicating empathy (affective-cognitive EC scores) and those

indicating only affect-match (same or similar emotion in observer and stimulus person).

Previous studies using only simple affect match measures to operationalize empathy found that children's affect matching to picture/story stimuli is nonsignificantly related to their helping responses. However, affect matching using indices based on children's facial expressiveness is low to moderately related to their helping responses (Eisenberg & Miller, 1987). It has also been reported that the more similar the contexts for assessing both affective involvement and prosocial behavior, the more likely it is that their relation is enhanced (Eisenberg & Miller, 1987; Peraino & Sawin, 1981; Strayer, 1987a, 1987b). Although the findings pertaining to the relationship of affect matching with helping behaviour are equivocal, a positive correlation between affect matching and helping scores is expected in Hypothesis 4.

Affective Responses as a Function of Cognitive Conditions and Expressive versus Situational Cues

Based on the seminal study in this area (Feshbach & Roe, 1968), much research work in children's empathy has operationally defined empathy only in terms of affect matching: that is, whether the child reports feeling an

emotion that is the same or similar to the stimulus person's emotion. Affect matching and emotion recognition have been studied using both concordant cue conditions in which person (facial expression of emotion) and situation based cues are similar, such as a smiling child at a birthday party (Kurdek & Rodgon, 1975; Feshbach & Roe, 1968), and discordant cue conditions in which person- and situation- based cues are discrepant, such as a smiling child getting an injection (Burns & Cavey, 1957; Chandler & Greenspan, 1972; Deutsch, 1974; Deutsch & Madle, 1975; Gnepp, 1983; Gnepp & Hess, 1986; Greenspan, Barenboim, & Chandler, 1976; Iannotti, 1975, 1978, 1985; Reichenbach & Masters, 1983).

In the present study, affect matching is studied because the presence of concordant emotion in self and other is an intrinsic component of empathy. We are particularly interested in the stimulus conditions influencing children's affect matching. In order to share another's emotions, one must first recognize what these are, given the available cues. Thus, emotion recognition is an integral aspect of affect matching (Feshbach, 1975). Yet, affect matching is expected to be influenced by both the kind of emotion (happy, sad) recognized, and whether or not it accords with situational information (win, lose).

Recent studies investigating children's emotional understanding have differentiated person-based cues (e.g., emotional expressions) and situation-based cues (e.g., positive or negative goal outcome) as two general sources of information children use (Gnepp, 1983). These sources may operate concordantly or discordantly, as when children dissimulate their emotional expressions (display happiness when losing). Children (aged 4-9 years) have been found to understand and use display rules for emotions (Cole, 1986; Saarni, 1979). Although children are able to use both information sources (Gnepp, 1983), they may have different implications for children's affective responsiveness. This topic has not received much previous empirical attention.

In the present experiment investigating stimulus factors affecting children's affect match responses, we focus on concordant versus discordant cognitive conditions by combining both situation and emotion cues. The affect match experiment presents a child with another child (seen via videotape) whose facial expression is either happy or sad after a given situational outcome - either positive "win" or negative "lose" goal outcome.

Two cognitive conditions are studied, each entailing two of the four cue combinations possible. In the concordant condition, the person-based (facial expression) and

situation-based (win or lose) cues are consistent with each other - that is, the stimulus child's facial expression is happy after having won a game, or sad after having lost it. In the discordant condition, these cues are inconsistent with each other - the stimulus child's facial expression is happy after having lost a game, or sad after having won it. The four experimental cells (win-happy, lose-sad, win-sad, lose-happy) also permit investigation of the relative effects of expressive (happy, sad facial expressions) and situational (win, lose) cues to emotion.

The dependent response in this experiment is the affect match, or similarity of a child's own reported emotion and its intensity with his or her identification of the stimulus child's emotion and intensity. Affect match is scored 0-3 (see Method, pp. 46-7) depending upon the degree of emotion and intensity match of the subject child with the stimulus child's identified emotion.

Three hypotheses are proposed regarding the effects of factors investigated on children's affect matching. These hypotheses are listed below.

Hypothesis 5: Higher mean affect match scores will occur in response to the concordant than discordant cue conditions.

Hypothesis 6: Within the concordant cue condition,

higher affect match scores will occur to the win-happy than the lose-sad cells.

Hypothesis 7: Within the discordant cue condition, higher affect match scores will occur in response to the lose-happy than the win-sad cells.

We expect (Hypothesis 5) that concordant cues will facilitate both emotion recognition and the evocativeness of emotion cues, promoting greater mean affect match scores for the cognitively concordant than discordant cue conditions. This is expected because both person-based (expression) and situation-based (goal outcome) cues provide similar or redundant information about the stimulus child's emotional state (Greenspan et al., 1976). Thus, the concordant condition is both less cognitively demanding and less distracting, as well as potentially more emotionally evocative than the discordant condition given that cues to the stimulus child's emotion are multiple and consistent (Hamilton, 1973; Hughes et al., 1981; Kurdek & Rodgon, 1975; Wallbott, 1988). In contrast, in the discordant condition, the observer must coordinate two nonredundant sources of information. This creates ambiguity regarding the overall affective content conveyed, resulting in less impact on the observer (Carlson & Masters, 1986).

Findings from previous research on children's emotion recognition and affect matching provide some evidence in support of these contentions. Children (7-12 years) scored higher in verbal affect match response for concordant than for discordant situation and emotion cues (Deutsch, 1974; Reichenbach & Masters, 1983). Similarly, affect matching (ratings of children's facial expressions) occurred significantly more frequently in response to a story character's emotion (happy, sad) presented in concordant rather than discordant contexts (Barnett & McMinimy, 1988).

In addition, findings for discordant cue conditions are necessarily less predictable than for concordant cue conditions. For example, previous findings for children's responses to discordant emotion cues indicate a number of different responses. Children either misreported cues (e.g., a positive facial expression was identified as a negative facial expression; see Greenspan et al., 1976), or reinterpreted or reintegrated facial emotion cues (e.g., a smile was interpreted to suggest embarrassment rather than pleasure) (Gnepp, 1983; Wallbott, 1988). In other studies, children based their judgment on only one of the available discordant cues, either facial (the preference of younger children) or contextual (the preference of older children) (Burns & Cavey, 1957; Gnepp, 1983; Gnepp, McKee, & Domanic,

1987; Greenspan et al., 1976; Kurdek & Rodgon, 1975; Reichenbach & Masters, 1983).

The second affect match hypothesis in this section posits that children will report more affect matches for conditions in which the observed child's emotion is concordantly identified as "happy" rather than "sad" (Hypothesis 6). This expectation is based on previous naturalistic and experimental research findings for affect match (Borke, 1971; Denham, 1986; Feshbach & Roe, 1968; Hoffner & Badzinski, 1989; Mood, Johnson & Shantz, 1978; Reichenbach & Masters, 1983). Happiness was found to be the emotion most likely to receive a matched emotion display from preschoolers in naturalistic settings (Denham, 1986; Strayer, 1980), and from young children in experimental settings (Reichenbach & Masters, 1983).

Within the discordant cue condition, we expect that a happy facial expression shown in a negative (lose) context will be easier for observers to resolve and respond to than a sad facial expression shown in a positive (win) context (Hypothesis 7). This is based on children's understanding of the use of social display rules (Cole, 1986; Saarni, 1979). A happy face is a more common and accepted social front in negative public situations than the reverse (Hoffner & Badzinski, 1989). Therefore, we expect that children can

more easily resolve the lose-happy stimulus as reflecting either a face-saving strategy or a true expression because of enjoying the game, or winning some, if not all, the game money. The reasons for these two hypotheses are based on the intersection of two sets of research findings: those concerning concordant emotion cues (already presented) and those concerning responses to happy versus other emotions.

Summary of Hypotheses and Analyses

A summary listing of all hypotheses presented in previous sections is provided below.

Affect matching as a function of empathy. Hypothesis 1 predicts that children with high versus low empathy (EC) scores will have higher affect match scores across all four experimental cells. This will be shown by an expected main effect for empathy in 4-way ANOVA (mixed design) with two between-factors, empathy (high, low), gender (male, female), and two within-factors, situations (win, lose), emotions (happy, sad).

Prosocial helping responses. Hypotheses 2 and 3 are analysed using helping scores as the dependent variable in a 4-way ANOVA (between-groups design) for empathy (high, low) x gender (male, female) x situation (win, lose) x emotion (happy, sad).

Hypothesis 2 predicts that children with high versus low empathy scores will provide more prosocial responses across all four experimental cells. This will be shown by an expected main effect for empathy in the above ANOVA.

Hypothesis 3 predicts that the greatest number of prosocial responses will occur for the lose-sad concordant cell compared to the other three cells. A planned contrast between the relevant means will be used to assess this hypothesis.

Hypothesis 4 predicts that there will be a positive correlation between the affect match and prosocial helping scores. Pearson-product moment correlations will be used to assess this hypothesis.

Affect matching. Hypothesis 5 predicts that higher mean affect match scores will occur in response to the concordant (win-happy, lose-sad) than discordant (win-sad, lose-happy) cue cells. This hypothesis will be assessed by a paired difference t -test of the mean of the two concordant cells versus the mean of the two discordant cells.

Hypothesis 6 predicts that within the concordant cue condition, higher affect match scores will occur to the win-happy than the lose-sad cells. This hypothesis will be assessed by a paired difference t -test of the mean of the win-happy cell versus the mean of the lose-sad cell.

Hypothesis 7 predicts that within the discordant cue condition, higher affect match scores will occur in response to the lose-happy than the win-sad cells. This hypothesis will be assessed by a paired difference t -test of the mean of the win-sad cell versus the mean of the lose-happy cell.

Method

Subjects

The subjects were 9-year-olds (40 boys and 40 girls) from Grades 3 and 4 ($M = 114.2$ months; $S = 3.5$ months). They were solicited from schools in the metropolitan area and from the lists of families who volunteered upon the birth of a child to participate in early childhood studies by the Department of Psychology, Simon Fraser University. Up to eight subjects were obtained from each of 31 different schools in the Burnaby, North Vancouver and Vancouver areas. Each subject was paid C\$5.00 for participation in the study, and the parent(s) or guardians were reimbursed C\$15.00 for transportation costs.

Only one age group was studied for mainly pragmatic reasons. The study involved three different procedures and entailed a number of different variables and their interactions. Adding age of the subjects as an additional variable would have unduly increased the complexity of the design and hence, the sample size. As many of the conditions and procedures used in this design were new, it seemed prudent to begin the study with one age group alone. If the expected effects are found for this age group, then further

expectations concerning possible age difference can be advanced and examined.

The choice of 9-year-olds was based on previous findings indicating that younger children face difficulty recognizing the conflicting cues in the discordant experimental conditions. For example, in a previous study, Greenspan, Barenboim and Chandler (1976) found that the first graders misreported the facial expression of the target character in an ambiguous (discordant facial and situational cues) condition. In contrast, the third graders were more accurate in their description of the target character's facial expression in the ambiguous/discordant condition. Young children also seem unable to understand that a person can feel two emotions simultaneously (Harris, 1983) or can use strategies for hiding feelings (Gnepp, 1983; Gnepp and Hess, 1986; Saarni, 1979). Without adequate cognitive competence in these areas, the discordant condition may appear to be a completely unreasonable, nonsensical task for children. Nine-year-olds seem an appropriate age group, particularly given findings by Gnepp and Hess (1986) that half of their 8- to 9-year-olds understood strategies for producing discordant outcomes in a study on children's understanding of verbal and facial display rules, whereas preschoolers rarely did so.

For the prosocial response measure as well, children must be old enough to understand the game-task, and pretesting for the present study indicated that 9-year-olds were indeed a safe choice. In previous studies, prosocial responses increased with children's age possibly because of the growing cognitive ability to both take the other's role and be more instrumentally effective (Eisenberg, 1986; Hoffman, 1975; Staub, 1970; Strayer & Schroeder, 1989). Thus, people's affective responses and prosocial actions become more integrated with age (Eisenberg & Miller, 1987).

In sum, older children would have greater perceptual capacities and cognitive inferences about the internal feelings of others than younger children. This cognitive competence or capacity (Casey, 1993), including the empathic ability to make inferences, is important to the helping process (Davis, 1983).

The Setting and the Sequence of Administration of the Measures

Each child was individually tested at the Psychology Child Development Laboratory in the university for a total of about 70-85 min, including a 15-min break. The Empathy Continuum procedure lasted about 35-40 min; the experiment on

affect match took 5-10 min, and the experiment on prosocial helping took about 15-20 min to complete.

All three measures were administered in the same 15' x 15' room. The Empathy Continuum (EC) was administered first because the subjects were to be classified as high and low empathy in order to allocate equal numbers of each group to different cells in the prosocial experiment. A 15-min recreational interval, during which subjects left the experimental room, was set between the EC and affect-matching experimental procedure in order to minimize any possible carry over effects. Parents viewed all the proceedings (except the helping experiment) from the adjacent room which had a one-way mirror and audio facilities.

The Empathy Continuum Scoring System and Stimuli Scoring

The Empathy Continuum (EC) is a multidimensional measure of an individual's cognitive-affective experience of empathy (Strayer, 1987a, 1989, 1993). Empathy is operationalized as concordant affect with a stimulus person, with different levels of cognitive mediation affecting the empathic experience. Reliabilities previously reported for the EC scores were good, ranging from 87% to 96% for three different pairs of raters scoring 20 randomly selected response records of children aged 5-, 8-, and 13-years (Strayer, 1989).

As shown in Table B1 (Appendix B), 20 EC scores are organized at seven cognitive levels. These scores delineate concordant affect in response to stimuli (3 degrees of affect match repeated at each empathy level II-VII) that are mediated at progressively more complex levels of cognitive involvement.

At level I, the EC scores indicate whether a character's emotion has been (1) or has not been (0) identified. Empathy is not reported at this level because no concordant affect is reported by the subject. All subsequent scores indicate empathy in terms of the degree of concordant emotion in the subject and a stimulus person. EC scores at Level II denote empathy in terms of concordant emotion only, with no attribution or reason provided for the concordant emotion reported. At Levels III to VII, the EC responses are scored according to the attribution given for the concordant emotion. Attributions are made with reference to story events (Level III), a specific character's external situation (Level IV), transposition of oneself into the depicted situation and/or association to one's own experience (Level V), responsiveness to the character's internal experience, motivations or general life events (Level VI), and explicit role taking to the character (Level VII). Appendix D gives full details of the Empathy Continuum Protocol.

Stimuli and Procedure

During the Empathy Continuum administration, the child was seated in front of a 12" black and white TV monitor connected to a video-recorder which presented stimulus vignettes. The male experimenter sat about 3 feet from the subject, and interviewed the child after each stimulus vignette.

Children viewed a 22-min series of seven emotionally evocative videotaped stimulus vignettes (all presented in black and white), summarized in Table C1 (Appendix C). After each stimulus vignette, children were interviewed and asked to rate the intensity (1 = a little; 2 = a lot) of stimulus characters' emotions and the reasons for the emotion. Children were then asked if they felt any emotion and, if so, at what level of intensity (1 = a little; 2 = a lot). They were also asked to give reasons for the emotion experienced. Spontaneous reports were coded into six common emotional categories: Happy, sad, angry, afraid, positive (pleasant) surprise and negative (unpleasant) surprise. If other labels were used ("felt bad"), children were presented with these six response options and asked which one fit best. As an example of the procedure, the interview questions for the first vignette of Old House were: "How did the boy feel? Did he feel that a little or a lot? What made him feel that way?"

What about you - how did you feel then? (continue if child reports an emotion). Did you feel that a little or a lot? What made you feel that way? (Why did you feel that way?)".

High and Low Empathy Subjects

In order to classify the subjects into high and low empathy groups, a median split of the EC scores was obtained separately for the boys and the girls. As compared to the mean split, fewer subjects are likely to be eliminated. A median split has also been recommended for distributions that may be skewed.

stimuli and Inter-Rater Reliabilities for Affect Match

Experiment

Stimuli for the affect match experiment involved 8- and 9-year old Caucasian children who posed happy and sad facial expressions. Facial expressions were used because they are an important source of information and communication about emotions (Odom & Lemond, 1972) and have considerable evocative power (Hoffman, 1975). Happy and sad expressions were used because they represent the two most prominent nonverbal emotional reactions and have been found to be clearly associated with discrete facial expressions and characteristic behaviors (Izard, 1971). They are also the

first two emotions labeled by children (Lewis & Saarni, 1985). These two emotions have also typically been used in studies on affect match and emotion recognition (Borke, 1971; Deutsch, 1974; Gnepp, 1983; Greenspan et al., 1976; Watson, 1972). Of the original 20 pilot stimuli posing happy and sad facial expressions, four happy and four sad facial expressions were selected as stimuli because of their high inter-rater reliabilities among a pilot sample of child and adult raters.

Both the adult (12 female and 6 male university students) and the child (3 female and 5 male 8- to 10-year-olds) raters were used in a pilot testing of the present stimuli. The raters were presented (both individually, and in small groups of 2-4 persons) with twenty 5-sec videotaped displays of a child's facial expression, and were asked to identify whether the expression was happy, sad, or angry. The option of "angry" emotion was included because previous studies (Borke, 1971; Reichenbach & Masters, 1983) found that children sometimes confused or equated "sad" expressions with "angry" expressions.

The stimulus set rated consisted of 11 "sad" expressions (5 boys, 6 girls) and 9 "happy" expressions (4 boys, 5 girls). The adult group identified and rated the intensity of each emotion viewed ranging from 1 (a little) to 3 (a

lot). The children identified each emotion, and then rated a reduced set of 12 stimuli which had previously been identified consistently as either sad or happy by the adult group.

Inter-rater reliabilities were assessed by the percentage of agreement in emotion identification (happy, sad, or angry). Separate percentages for adult and child groups were obtained by dividing the number of agreements that a given stimulus represented a particular emotion by the total number of agreements and disagreements for that stimulus. Percentage agreement for emotional intensity was similarly obtained. Agreement on both emotion and intensity required agreement on both emotion identification and a 2-point agreement on intensity (1 = "a little" versus 2 and 3 = "quite" and "a lot"). Table 1 reports the inter-rater agreement for the present stimuli which were rated by most to be of moderate intensity (scores = 2 or 3).

The two sets of 4 facial stimuli (male set for boys, female set for girls) showing happy and sad facial expressions are used for the conclusion of the "Figure This Out" game. This game is part of the affect match experiment. It is presented as having been played individually by each one of the eight children shown at the conclusion. Earlier

sections of the videotape show hands making response choices, and scores after each seen trial. At the end of each game,

Table 1

Percentage Agreement for the Stimuli Showing Happy (Ha) and Sad (Sa) Facial Expressions

Stimulus	Girls				Boys			
	1	2	3	4	1	2	3	4
Emotion	Ha	Ha	Sa	Sa	Ha	Ha	Sa	Sa
Adult ^a								
Identification	100	100	100	94.4	100	100	100	94.4
Identification & intensity	100	94.4	83.3	83.3	100	100	77.8	66.7
Children ^b								
Identification	100	100	100	100	100	100	100	100
Identification & intensity	100	100	87.5	87.5	87.5	87.5	75	100

^a $\underline{n} = 18.$ ^b $\underline{n} = 8.$

the stimulus child is presented as reacting happily or sadly to either winning or losing the game. Each subject was shown four games with a different outcome for each: Win-happy; win-sad; lose-sad; and lose-happy. Thus, the design involved two concordant (win-happy and lose-sad) and two discordant (win-

sad and lose-happy) conditions. The win and lose outcomes were used because winning and losing are common events in children's lives with concomitant emotions (usually happy and sad). The game is described below, as part of the affect match experiment.

Affect Match Experiment: Figure-This-Out Game

The experimenter explained the game to the child and answered any question the child had before showing it being played by the stimulus child. The subject child had in front of him or her the same apparatus that the stimulus child was shown to be using. Children were instructed that the apparatus had 4 color-coded response buttons corresponding to 4 color-coded lights. The object of the game was explained as attempting to figure out which color would light up for each of the 10 turns of the game. Subjects were told that the player must figure out the built-in order in which colors would go on. Players pressed the colored response button to indicate the color they thought was correct. For example, if a player pressed the red button and was correct, a pleasant tone sounded. The player also got 25c for that turn. But, if a choice was wrong, an unpleasant buzz sounded, and no reward was earned.

Children were then told that they will be shown four brief videotapes of children who had recently played this game. They were instructed,

These children are all boys/girls like you. They are of the same age and in grade 3/4, and probably have the same interests as you have. You'll see the second half of each game, so that there are 5 turns left. The TV will focus on the player's hand and the game box so that you can see the button he/she chooses and the light that comes on.

At the beginning of the tape, a scoreboard will show you the number of times the player has won and the number of times the player has lost in the game so far (scoreboards in the "Win situation" showed 4 wins and 2 losses, and in the "Lose situation" showed 2 wins and 4 losses). You can keep track of how the child is doing because the scoreboard will change after each turn you'll be watching. At the end of the game you'll get to see who the player is. Do you have any questions? Okay. Now, please pay attention to each videotape as I would like to know your impressions after each game.

The child was then shown the tapes depicting each of the four experimental stimuli: Win-happy, lose-sad, win-sad, lose-happy, and interviewed about each. The four experimental stimuli were presented randomly to each child. The target persons were of the same sex as the subjects because young children's inferences regarding emotions of the same-sex persons have been found to be more accurate (Feshbach, 1975; Feshbach & Roe, 1968).

Between stimuli, the subject was asked to read for 45 sec any one page of a book depicting cartoon strips, entitled "The family circus is very Keane" (Keane, 1988). The Keane

family stories appeared in the local newspaper during the period of the present experiment, and were easy to read, eye-catching, and good for holding the attention of the subjects. This was done to minimize any carry over effects from one condition to the next while the experimenter inserted the next tape for presentation.

Affect Match Procedure

After each tape was presented, the children were asked a series of questions in order to assess the accuracy of their recall of the events depicted and to obtain their affect matching score. The interview questions were as follows: (1) How did the game end? What was the score? (2) How did the player feel at the end of the game? And did he/she feel that a little or a lot? (3) How did you feel after you saw the conclusion? And did you also feel that a little or a lot?, and (4) What made you feel that way?

Affect match responses were scored for the degree of affective match in the emotion reported by the subject child, if any, and the stimulus child's displayed emotion. In all cases, the stimulus child's emotion was identified. A score of 0 indicated that an emotion was reported for the stimulus child but no (or a discordant) emotion was reported for oneself (e.g., stimulus child "sad", self "happy"). A score

of 1 indicated a similar emotion reported for the stimulus child and subject child (e.g., "sad" and "negative surprise"). A score of 2 indicated a match in the same kind of emotion but different intensity reported for the stimulus and the subject child. Finally, a score of 3 indicated an exact match in emotion and intensity for both stimulus child and subject child. The reasons given for the child's explanation of why s/he felt the emotion were not incorporated into the affect match scoring procedure. Children were asked for their reasons only to ensure that they had attended to both the situation and emotion cues while making their judgments.

Prosocial Helping Experiment

At the final stage of the present study an experiment on prosocial helping behavior was conducted. The child was seated at the long end of a 4' x 2' table which had a 20" color TV monitor at the other end. There was a "remote control device" about six inches from the child. It was explained that the remote control was hooked up to an "indicator box" in the next room. The proceedings of the next room, containing the "child" confederate (actually, the televised hand of one of two female students) were televised onto the subject's TV monitor. Children saw on this monitor

the "indicator box" reflecting the choices they made either to communicate the correct, or incorrect, answer (or not to communicate) to the child in the other room. Only the hand of the confederate was seen "playing" the game, as in the affect match experiment. The prosocial helping experiment spanned 15 to 20 min (depending on how long it took the child to understand and feel comfortable with the instructions). All children were aware that their parent(s) were not watching this part of the study.

The experimental conditions were similar in design to the affect-match experiment and involved the same stimulus subjects. Subjects were allocated randomly to one of the four experimental conditions: Win-happy, lose-sad, win-sad, lose-happy. The subject was told that s/he would observe an entire game via video relay technology involving one of the stimulus children seen in the affect matching experiment who had been given another chance to play the same game. The subject child was told that s/he also had an opportunity to participate in this game, and that s/he might influence the outcome of the game for the player. Because the subject was equipped with a list of the 10 correct answers and might, prior to the start of each new turn, signal the correct color to the player, the power to alter the outcome of the game was

clearly known to the subject. The subject child knew how to play the game from the preceding Affect Match procedure.

Children were instructed that their 4-button "remote control" panel was hooked up to a response box in the player's room showing four colored lights. When a button on the remote control panel was pressed, a corresponding colored light would flash on in the player's response box in the next room and would be conveyed on the TV screen in front of the child. The subject practised with the remote control device and saw on the TV screen the outcome of his or her actions on the response box located in the next room. The subject was then given the following instructions,

There are 10 turns and for each turn you can get 25c for a total of \$2.50. You can participate in this game if you want to. Remember you are not competing against the player, and the player is not competing against anyone either. S/he just has to figure out the right pattern of colours. Before each turn, you can do one of three things. (1) If you just want to watch, press the coin-dispenser (located beside the response box) to get the 25 cents (Experimenter demonstrated), and do nothing else for that turn. (2) Since you have the list of all the correct colors, before the turn starts, you can help the player win a quarter by signaling the correct winning color to him/her with your remote control device. But, if you do signal the correct answer you cannot get the quarter. If the player picks the correct color, s/he will get 25 cents. (3) You can trick the player and still get a quarter by pressing the wrong signal button.

Subjects practised each of these options. They were then told that the child they would watch was in the next

room. Subjects were then left alone in the room for the 10 trials of the game, but could be observed via a one-way mirror in an adjacent room. A trial was signaled on the subject's TV screen by the confederate waiting in the adjacent room. The confederate always adopted a losing strategy unless the subject signaled the correct answer. The number of helping responses for children was determined by the number of trials on which they signaled the correct response choice to the next room.

At the end of this procedure, children kept the money they had received across the 10 trials. In debriefing the children, all the participants were told that they had watched the game played by a confederate and not by the stimulus child. No subject was distressed on being told this. They were then thanked for their participation.

Results

Present findings are reported in the order of the hypotheses as listed in the Introduction. The first set of results reports findings on the effect of children's empathy (based on groups for high or low Empathy Continuum scores) on their affect matching across and within experimental conditions. The second set of results presents findings pertinent to hypotheses for the affect matching experiment. Within each of these sets of results, findings pertinent to hypotheses for the prosocial helping experiment and its relevant hypotheses are reported.

Empathy Continuum Scores

Reliability. The Empathy Continuum was the only measure requiring assessment of interrater reliability. The randomly selected transcripts of EC responses for 50% of the present sample were scored independently by the experimenter and by another trained scorer (an undergraduate). The interrater reliability obtained was 96%. Disagreements in scoring were resolved 100% by discussion. The present estimates of inter-score reliability are quite satisfactory and in accord with the findings reported previously using this measure (Chisholm, 1991; Poole, 1991; Strayer, 1993).

Descriptive statistics. Children's empathy scores provided the basis for their assignment to high- or low-empathy groups. Table 2 presents descriptive statistics on the EC scores for all children, and for girls and boys separately.

Table 2

Descriptive Statistics on Empathy Continuum (EC) Scores across Stimulus Vignettes

Statistics	All ^a	Boys ^b	Girls ^b
Mean	51.6	48.0	55.3
SD	22.5	23.3	21.4
Median	59	55	63
Range	8-93	8-81	8-93

^a $N = 80$. ^b $n = 40$.

As shown in Table 2, EC scores are somewhat, but not significantly, higher for girls than for boys, $t(78) = 1.44$, $p > .05$. The present use of a male experimenter did not appear to inhibit the empathic responses of the female subjects (Eisenberg & Lennon, 1987). Children with scores above (or below) the median for their sex were assigned to high or low empathy groups.

Affect Match Scores

Descriptive statistics. All children (except one case in one cell) correctly identified the displayed emotions in each of the four experimental conditions (99.7% accuracy in emotion identification). One girl identified a "sad" face as "angry" in a discordant condition. However, this emotion still qualifies as discordant with the "win" context, and so was included in the present analyses. Moreover, all subjects were 100% accurate in identifying the stimulus children's displayed emotions as concordant or discordant with contextual cues. All children correctly reported that they were aware of the two discordant (lose-happy; win-sad) examples by stating that the facial emotional responses shown by stimulus persons in the discordant conditions did not fit with the given context. Interestingly, 90% of the children in the present study were able to resolve the discordant conditions presented by giving appropriate reasons for it, such as that the stimulus child was "a good sport", "enjoyed the game anyway" (lose-happy), or that the child "didn't win all of it", "didn't want to play" (win-sad). The reasons given indicate that the children considered both the personal emotional reactions and contextual cues while making their judgments.

60% of the subjects (22 boys and 26 girls) reported an affect match in response to at least one of the four experimental conditions, whereas 40% (18 boys, 14 girls) reported a neutral response (no emotion) across all four experimental conditions.

Children's responses were scored for the degree of affect match of their own emotion with that of the stimulus child's displayed emotion. The overall mean affect match score (maximum possible score = 12) was 2.8 (SD = 2.0, Range = 0-12), indicating a fairly low degree of affect matching. Although the affect match scores for girls (M = 3.1, SD = 3.1; Range = 0-12) were higher than for boys (M = 2.4, SD = 2.8; Range = 0-10), the difference was not statistically significant, $F(1,76) = 1.38, p > .05$.

Empathy and Affect Match

Descriptive comparisons. Comparing descriptive results for empathy and for affect match yields some notable distinctions. The descriptive statistics for the EC (Empathy Continuum) scores indicate that 92.5% of the 80 children (39 girls and 35 boys) reported empathy to at least one of the seven stimulus vignettes. Furthermore, of the total possible responses (80 subjects x 7 stimulus vignettes = 560), 63% (355/560) were empathic responses. Thus, children

differentially reported empathy to some stimuli but not to others, as would be expected when sampling a range of emotions and contexts (Strayer, 1993). Although the opportunities for responses were different for the affect match (=4) and EC (=7) measures, the obtained percentage of empathy responses (63%) is considerably higher than the obtained percentage of affect match responses (30%; 95/320) out of their respective totals. These descriptive findings suggest that measures (such as the EC) which use quasi-naturalistic stimuli presenting a variety of emotions and situations may provide more emotionally evocative contexts for eliciting emotional responsiveness than measures which are more limited and restricted in scope (such as the present affect match experiment).

Empathy and affect match hypotheses. The next set of results addresses present hypotheses regarding children's affect matching as a function of their more general empathy, considered in terms of their Empathy Continuum (EC) scores. Results for the Empathy Continuum (EC) are presented first, followed by findings regarding the hypothesized differences in affect match scores for high and low empathy groups. Mean affect match scores for the high or low empathy groups in response to the four cells of the affect match experiment are presented in Table 3.

Table 3

Affect Match Scores for High and Low Empathy Groups
Across Four Experimental Cells

Experimental Cells	Empathy (EC)			
	High		Low	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Concordant-Happy (Win-Happy)	1.58	1.36	0.68	1.07
Concordant-Sad (Lose-Sad)	1.18	1.13	0.50	0.91
Discordant-Happy (Lose-Happy)	0.73	1.22	0.53	1.01
Discordant-Sad (Win-Sad)	0.25	0.54	0.10	0.38
Across Cells	0.90	1.10	0.50	0.80

Note. n = 40 for both high and low empathy groups.

Present hypotheses concerning the effect of children's empathy on their affect match responses were tested by a four-way analysis of variance (mixed design) using empathy (high, low) and gender (male, female) as the between-subjects factors, and situation cue (win, lose) and two within-subjects factors of situation (win, lose) and emotion (happy, sad) (see Table 4). Given that there was no significant main

Table 4

Summary ANOVA for Affect Match Scores

Source	SS	df	MS	F	p	R ²
Between subjects						
Empathy (A)	18.6	1	18.5	9.2	.003	.05
Sex (B)	3.0	1	3.0	1.5	.22	.007
A x B	0.0	1	0.0	.0	.97	.001
Subjects w. groups	152.6	76	2.0			
Within subjects						
Situation (C)	.53	1	.53	1.1	.30	.001
A x C	.15	1	.15	.3	.58	.001
B x C	.38	1	.38	.80	.38	.001
A x B x C	.15	1	.15	.32	.58	.001
C x Subjects w. groups	36.5	76	.48			
Emotion (D)	10.9	1	10.9	15.0	.0002	.03
A x D	.38	1	.38	.52	.47	.001
B x D	.11	1	.11	.15	.70	.001
A x B x D	2.3	1	2.3	3.14	.08	.006
D x Subjects w. groups	55.1	76	.73			
C x D	27.0	1	27.0	32.8	.0001	.07
A x C x D	7.5	1	7.5	9.11	.004	.02
B x C x D	.25	1	.25	.31	.58	.001
A x B x C x D	.38	1	.38	.46	.50	.001
Error	62.6	76.	.82			

effect or interaction effect for children's gender, this factor was collapsed in subsequent analyses.

The first and major hypothesis (Hypothesis 1) for empathy predicted that children in the high empathy group (high EC scores) would obtain significantly higher affect match scores across all experimental conditions than would those in the low empathy group. This central hypothesis was supported. High empathy children ($M = 0.90$; $SD = 1.10$) obtained significantly higher affect match scores across all experimental conditions than did low empathy children ($M = 0.50$; $SD = 0.80$), $F(1,76) = 9.23$, $p < .003$ (see Table 4). This difference was consistent for each experimental cell, as shown in Table 3. Thus, empathy influenced affect match responses across emotion and situation cue conditions as predicted.

Results shown in Table 3 also indicate that although children in both the high and low empathy groups were not similarly affected by the emotion and situation cue conditions in their extent of affect matching, the two groups showed the same response pattern. Equivalent rankings of responses for cells occurred both empathy groups: highest for concordant "happy", and lowest for discordant "sad". These findings are consistent with views presented in the Introduction.

There was also a 3-way interaction for empathy, situation and emotion obtained in the main ANOVA, $F(1, 76) = 9.11$, $p < .004$. Further analyses were conducted to explain this 3-way interaction. A repeated measures ANOVA was performed separately for each group to determine if the interaction effect for each group was statistically significant. In fact, significant interaction effects were obtained for both the high empathy, $F(1, 39) = 30.72$, $p < .01$, and low empathy $F(1, 39) = 4.92$, $p < .03$ groups. Figure 1 shows the profile of the emotion x situation effect for the high and low empathy groups, respectively.

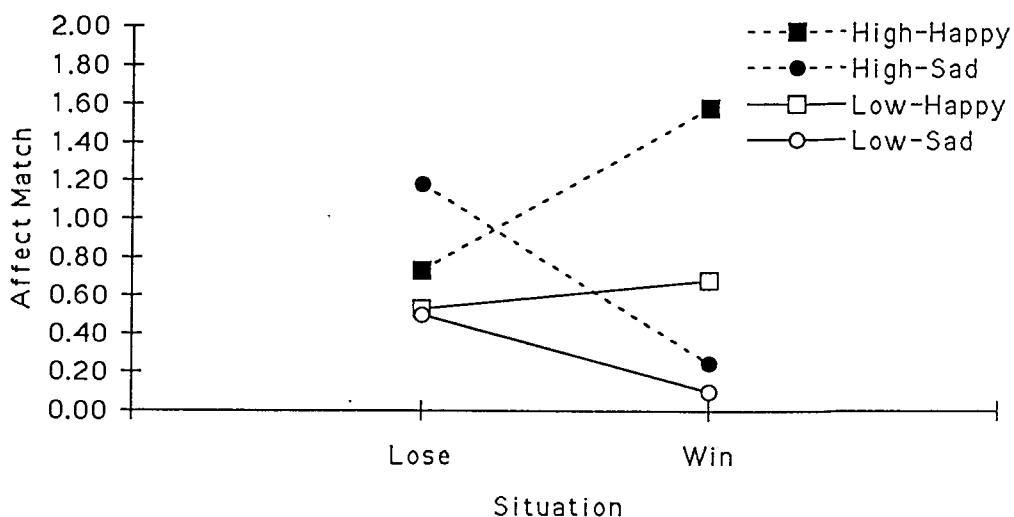


Figure 1. Affect match as a function of emotion, situation, high and low empathy.

Matched t tests of the simple effects of the 3-way interaction were conducted separately for each empathy group to help explain the major characteristics of the affect match responses within the two empathy groups. Two comparisons were made between the concordant and discordant situations for happy and sad emotions: (i) win-happy versus win-sad and (ii) lose-happy versus lose-sad. In addition, two between-groups comparisons were made for the win-happy and lose-sad cells.

The high empathy children, compared to the low empathy children, were better at discriminating, in terms of affect match scores, between the concordant and discordant situation and emotion cues. They had significantly higher affect match scores in the concordant win-happy than discordant win-sad cell, $t(39) = 6.13$, $p < .0001$, and in the concordant lose-sad than discordant lose-happy cell, $t(39) = 2.07$, $p < .05$ (see Table 3). In contrast, the low empathy group responded with higher affect matches only for the concordant win-happy versus the discordant win-sad cell, $t(39) = 3.29$, $p < .002$. Their affect match scores did not differ significantly between the concordant lose-sad and discordant lose-happy cells, $t(39) = .01$, $p < .89$ (see Table 3).

In addition, the two between-group comparisons for the win-happy and lose-sad cells showed that the high compared to

low empathy group gave significantly more affect match responses to both the win-happy cell, $F(1, 78) = 8.07, p < .006$, and the lose-sad cell, $F(1, 78) = 3.95, p < .05$).

In sum, high empathy children, as expected, were more sensitive to emotion cues than were low empathy children across both concordant and discordant situations. In addition, a 3-way interaction between empathy, emotion, and situation revealed that the high empathy group was more sensitive, in terms of affect matches given, to the differences between emotion cues in both the concordant and discordant conditions. In contrast, the low empathy group did not significantly discriminate, in terms of affect match, between emotions (sad, happy) shown in the lose condition. Their affect match responses discriminated only between emotions shown in the win conditions. Further, the high as compared to the low empathy group appeared relatively more affected by concordant than discordant cues.

Empathy and Prosocial Responses

The next set of findings concerns children's helping responses. Equal numbers of boys and girls in high and low empathy groups were randomly assigned to one of four helping conditions (as presented in the Method section). They were then shown again that particular experimental cell (i.e.,

win-happy, lose-happy, win-sad, lose-sad) before beginning their participatory game. This was done in order to create a carry-over effect into the new game so that its impact on prosocial helping could be assessed. A 4-way between-subjects analysis of variance was performed on the prosocial scores with empathy (high, low), gender (male, female), situation (win, lose) and emotion (happy, sad) as independent variables given that each subject was allocated to only one of the four experimental conditions.

Present results indicate that a majority, 72.5% (58/80), of children in this study gave at least 1 helping response. The mean number of helping responses was 2.1 (SD = 1.84, R = 0-10). Table 5 presents the the mean number of helping responses as a function of empathy and gender across stimulus conditions.

Table 5

Helping Responses as a Function of Empathy and Gender Across Stimulus Conditions

Empathy	Win				Lose				
	Happy		Sad		Happy		Sad		
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	
All children									
High ^a	2.5	1.7	2.5	2.0	2.3	1.4	3.1	1.6	
Low ^a	1.9	2.7	2.5	1.7	1.2	1.4	0.8	1.5	
Boys									
High ^b	1.8	1.1	1.0	0.7	2.2	1.5	3.0	1.9	
Low ^b	2.2	3.9	1.4	1.5	0.8	0.8	0.0	0.0	
Girls									
High ^b	3.2	2.0	4.0	1.6	2.4	1.5	3.2	1.5	
Low ^b	1.6	1.1	3.6	1.1	1.6	1.3	1.6	1.8	

^an = 40, N = 80. ^bn = 20, N = 40.

Two hypotheses were investigated regarding children's helping responses. The central hypothesis (Hypothesis 2) based on empathy's role in motivating prosocial behavior, was that high versus low empathy children would help more across all four experimental conditions. This hypothesis was confirmed by a significant main effect for empathy in the two

groups, $F(1, 64) = 7.19$, $p < .01$ (see Table 6). Children in the group with high EC scores gave significantly more help across all conditions ($M = 2.6$; $SD = 1.7$) than did those in the group with low EC scores ($M = 1.6$; $SD = 1.9$).

Table 6

Summary ANOVA (Between-Groups) for Prosocial Scores

Source	SS	Df	MS	F	p	R ²
Empathy (A)	20.0	1	20.0	7.2	0.01	0.08
Sex (B)	24.2	1	24.2	8.7	0.004	0.09
Situation (C)	5.0	1	5.0	1.8	0.18	0.02
Emotion (D)	1.3	1	1.3	0.45	0.51	0.005
A x B	0.2	1	0.2	0.07	0.79	0.00
A x C	9.8	1	9.8	3.5	0.07	0.04
B x C	3.2	1	3.2	1.2	0.29	0.01
A x D	0.45	1	0.45	0.16	0.69	0.001
B x D	8.45	1	8.45	3.1	0.09	0.03
C x D	0.05	1	0.05	0.02	0.89	0.00
A x B x C	7.2	1	7.2	2.6	0.11	0.03
A x B x D	1.3	1	1.3	0.45	0.51	0.001
A x C x D	4.1	1	4.1	1.5	0.23	0.02
B x C x D	4.1	1	4.1	1.5	0.23	0.02
A x B x C x D	0.05	1	0.05	0.02	0.89	0.00
Error	178.0	64	2.78			

Hypothesis 3 predicted that the greatest prosocial responses would occur in the lose-sad compared to the other three stimulus cells. This hypothesis was not supported because there was no significant situation by emotion interaction effect, $F(1, 64) = 0.02, p < .89$. Contrary to prediction, salience of previous distress cues did not make the greatest impact on prosocial helping.

There was an unexpected difference in prosocial responses for boys and girls in the present study, shown by a main effect for children's gender, $F(1,64) = 8.70, p < .01$ (see Table 6). Girls rendered more help ($M = 2.7, SD = 1.6$) than did boys ($M = 1.6, SD = 1.4$). This effect appears robust across situations and emotions as well as the empathy levels of the subjects. Although no hypothesis was made regarding gender differences in prosocial helping in view of the equivocal past findings, the direction of present results is consistent with previous reports showing that when there is a difference, prosocial helping behavior is greater in females than males (Eisenberg & Miller, 1987; Hoffman, 1977).

In sum, confirmation was obtained for the central hypothesis that empathy motivates prosocial behavior. Children in the high-empathy group rendered more help than did children in the low empathy group. In addition, girls helped more than did boys. Contrary to expectations,

however, the lose-sad cell (considered across groups) did not motivate the greatest amount of helping compared to the other three cells.

Affect Match and Prosocial Responses

The fourth hypothesis of this study specified a positive relationship between affect match and helping scores. The product-moment correlation coefficient analysis showed that Hypothesis 5 was not supported, $r(78) = -.03$, $p > .05$. Contrary to expectations, affect match scores did not predict prosocial helping scores.

Affect Matches Within Experimental Cells

Descriptive statistics for the affect match scores in each of the four experimental conditions are presented in Table 7. In general, analyses of present data supported all three hypotheses regarding conditions influencing affect match. Specific findings are presented below for each hypothesis considered separately.

No gender-related differences in affect matching were hypothesized nor were any found for the present age group and for emotions (happy and sad). These two common and socially acceptable emotions are more easily recognised (Borke, 1971, 1973; Gibbs & Woll, 1985; Riechenbach & Masters, 1983) and

not as likely to elicit gender-related differences as are, for example, fearful stimuli (Strayer, 1989).

Table 7

Descriptive Statistics on Affect Match (AM): Scores for Four Experimental Cells

Cells	All ^a		Boys ^b		Girls ^b	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Win-happy	1.13	1.30	1.08	1.37	1.18	1.24
Lose-happy	0.63	1.12	0.45	1.01	0.80	1.20
Win-sad	0.20	0.49	0.15	0.36	0.25	0.59
Lose-sad	0.81	1.08	0.75	1.08	0.88	1.09

^aN = 80. ^bn = 40.

Affect Match Hypotheses

The first hypothesis in this section was that more affect matches would be elicited by the concordant than discordant experimental cells (Hypothesis 5). This hypothesis was supported. A matched t test comparing the difference between the mean score for the two concordant cells (M = 1.94, SD = 2.11) versus the mean score for the two discordant cells (M = 0.83, SD = 1.31) was statistically significant, t(79) = 5.37, p < .0001. Clearly, as

hypothesized, concordant cues serve to facilitate children's affect match responses (see Figure 2).

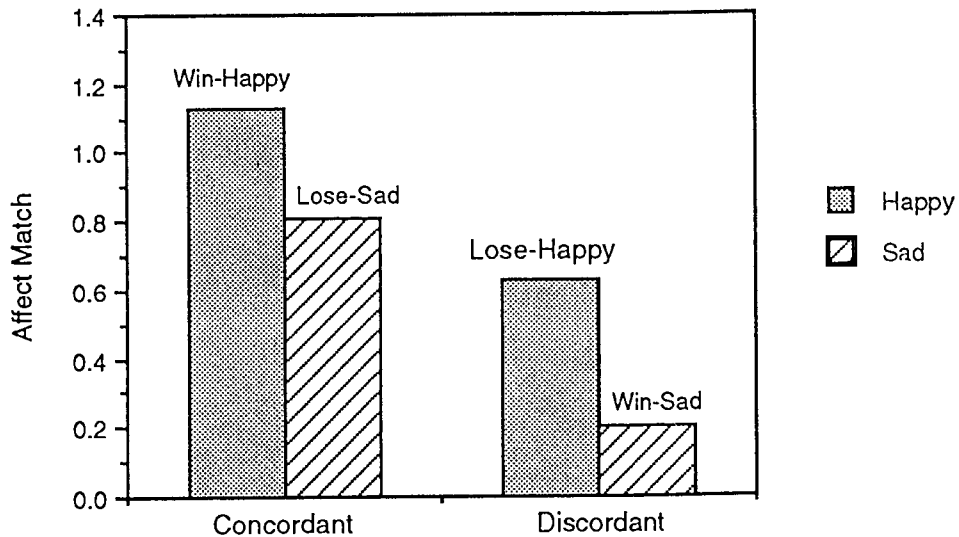


Figure 2. Affect match as a function of concordant versus discordant situations and emotions.

As well, Hypothesis 6 which predicted that greater affect match would occur in response to the "happy" than to the "sad" affective stimuli was also supported. A matched t test showed that affect match scores for the win-happy cell ($M = 1.13$, $SD = 1.3$) was significantly greater than for the lose-sad cell ($M = 0.83$, $SD = 1.08$), $t(79) = 2.42$, $p < .02$. Also, Hypothesis 7 which predicted that greater affect match would occur in response to the lose-happy than the win-sad

cell was supported. A matched t test showed that affect match scores for the lose-happy cell ($M = 0.63$, $SD = 1.12$) was significantly greater than for the win-sad cell ($M = 0.20$, $SD = 0.49$), $t(79) = 3.66$, $p < .001$.

These differences in affect matching partially explain the significant interaction of emotion and situation, $F(1, 76) = 32.8$, $p < .001$. There were greater emotion-specific differences for affect match scores in the "win" than in the "lose" condition. Affect matches in the win condition were significantly greater in response to the happy than to the sad stimuli, whereas no significant differences occurred in the lose condition. Thus, in conjunction with the main effect for concordant versus discordant conditions, this finding suggests that the differences are particularly notable when contrasting the concordant happy (win-happy) to the discordant sad (win-sad) cues. As will be discussed later, this interaction may be explained by children's relative unfamiliarity with actual occurrences of, or display rules for, sad expressions by winners.

General Summary

The present findings, considered together, indicate general support for the hypotheses studied in this investigation. Most of the hypotheses regarding affect

match, empathy, and prosocial behavior were supported. Children's affect match scores were significantly influenced by both emotional and situational cues in ways predicted for the cognitive (concordant-discordant) and emotional (happy-sad) factors investigated. However, the inclusion of empathy as a classification factor provided a more complete picture of the mechanisms involved in affect matching to situational and emotional cues. As expected, children's affect match scores across conditions also differed significantly as a function of their own more general empathy on an independent (Empathy Continuum/EC) measure. The affect match scores of children with high empathy (EC) were significantly higher across experimental conditions than were those of their less empathic peers. Further, high empathy children compared to low empathy children responded with greater affect match to emotions in both concordant and discordant situations.

Children's empathy also predicted their prosocial helping responses in an experimental task, with those in the high versus low empathy group providing the most help. Although this task provided stimuli similar to those used in the affect matching experiment, children's helping did not correlate significantly with their affect matching scores. Therefore, children's helping responses seem better explained by their empathy (even when measured in a different context

than helping in this study) than by their affect match considered separately.

To summarize, each hypothesis is listed below, and numbered to correspond with their presentation in the Introduction. Beside each hypothesis is a brief statement of whether it was supported, not supported, or partially supported by present results.

Hypothesis 1: Children with high versus low empathy (EC) scores will have higher affect match scores across all four experimental cells. This hypothesis was supported.

Hypothesis 2: Children with high versus low empathy scores will provide more prosocial responses across all four experimental cells. This hypothesis was supported.

Hypothesis 3: The greatest number of prosocial responses will occur for the lose-sad concordant cell compared to the other three cells. This hypothesis was not supported.

Hypothesis 4: There will be a positive correlation between the affect match and prosocial helping scores. This hypothesis was not supported.

Hypothesis 5: Higher mean affect match scores will occur in response to the concordant (win-happy, lose-sad) than discordant (win-sad, lose-happy) cue condition. This hypothesis was supported.

Hypothesis 6: Within the concordant cue condition, higher affect match scores will occur for the win-happy than the lose-sad cell. This hypothesis was supported.

Hypothesis 7: Within the discordant cue condition, higher affect match scores will occur for the lose-happy than the win-sad cell. This hypothesis was supported.

Discussion

The present study is the first of its kind to integrate three theoretically related processes of children's affect match, empathy, and prosocial behaviors. A number of conclusions can be drawn from this investigation regarding the relation of affect match, empathy and prosocial helping behavior. Furthermore, present results help to clarify the role of situational and emotional cues in children's affect match responses.

Empathy and Affect Match

The central hypothesis concerning empathy and affect match responses was confirmed. Affect match responses to situational and emotional cues were influenced by empathy. Children with high empathy scores had significantly higher affect match scores than did low empathy children, supporting Hypothesis 1. High compared to low empathy children also responded with greater affect match to emotions in both concordant and discordant situations in accordance with the first hypothesis.

Evidence for Hypothesis 1 supported more specific theoretical viewpoints regarding the relationship of empathy and affect matching. Hypothesis 1 reflected the theory that

concordant affect in self and others is an integral part of empathic responding (Feshbach, 1975; Hoffman, 1975; Strayer, 1987a). This empathic responding involves both negative and positive affect. Present findings add to the empirical evidence for this viewpoint.

This sensitivity in responsiveness to cues is apparent in the 3-way interaction (see Figure 1). The interaction between situation and emotion in affect match was more marked in high than low empathy subjects. In particular, high empathy children were more able to match emotion cues than were the low empathy group, especially in the lose situation.

Previous investigations had suggested that the valence (positive versus negative) of both the displayed emotion and the situational context determine appraisal and responding (Gnepp, 1989; Harris, 1983). The present findings extend previous thinking in this area by suggesting that the empathic disposition of the subjects is also an important moderating variable in appraisal and responding. Thus, for example, differences in affect match responding may be masked when relevant variables such as empathy are ignored. These findings have implications for the study of the relationship between empathy and prosocial helping responses since empathy is usually operationalised differently for adults (empathy)

and children (affect match) (Eisenberg & Miller, 1987). This will be discussed in the next section.

Concordance of cues, compared to discordance of cues, in the lose situation did not facilitate greater affect matching for the low empathy group. For the low empathy group, negative (failure) events overrode emotional cues so that the low empathy group responded more to the context (failure) than to the emotion. This result is consistent with that of Iannotti (1978) who found that children low in social responsiveness reacted more to the context than the facial-emotion cues than did their counterparts. What underlies such a finding? Projection may be one possibility. That is, the observer may predict or react to the emotional response of another based on how he or she would respond to that same situation (Kurdek & Rodgon, 1975). It has also been suggested in models of empathy development, that lower empathy levels have "an event-focus, with little person-based inference operating to mediate the feelings provoked" (Strayer, 1989; p.261). The present findings indicate that such a context-dependent reaction may be specific only to failure events. In other contexts (e.g., winning a game, as in the present study), facial expressions of emotions may be more important.

Discordant cues, as theorized, had a diminished impact on affect matching (Carlson & Masters, 1986; Hoffman, 1975). However, as expected, high empathy children gave more affect matches than did low empathy children to the discordant cues, supporting the view that they are aware that people sometimes do feel and act incongruously (Goldstein & Michaels, 1985; Hoffman, 1975). Previous researchers, such as Iannotti (1978, 1985), used such discordant stimuli to infer that role-taking ability is greater in empathic than less empathic children. Yet, the present research is the first to show the same relative effects of discordant and concordant stimuli for both empathic and less empathic children, and to indicate that empathic children are comparatively more responsive to others' emotions across all cue conditions.

Empathy and Prosocial Helping

As was hypothesized, high empathy children helped more than did those with low empathy. This finding is consistent with the theory that empathy is a motivator of helping behavior (Batson, 1987; Hoffman, 1975; Stotland, 1969). It is also consistent with previous findings showing relationships of the Empathy Continuum and prosocial behaviors (Poole, 1991; Strayer & Schroeder, 1989). The present finding adds a positive note to equivocal findings

noted in general reviews relating empathy and prosocial behaviour, especially in children (Eisenberg & Miller, 1987; Underwood & Moore, 1982). Taken together, the findings regarding 9-year old (present study) and 10-year old (Poole, 1991) children's helping responses, both studies using the EC, give empirical support to the suggestion that procedural artifacts may have contributed to the occurrence of less helping in children than adults (Eisenberg & Miller, 1987).

Girls helped more than did boys. Because these prosocial responses were made spontaneously, in experimental isolation from any other person, including the recipient, the likelihood of any explicit "social demands" for helping responses seems minimal. Although this finding was not predicted in the present study, the presence of sex differences in prosocial responding may be explained by differences in gender-role socialization in which females are generally encouraged and expected to be "nurturant", interpersonally oriented, and more prosocial than boys who are considered to be more agentic (Brody, 1985; Eisenberg, McCreath & Ahn, 1988; Hoffman, 1977) and more competitive (Barnett, 1982).

For example, induction which enhances the capacity to view events from another's perspective, is implicated in the development of empathy and the mediation of prosocial helping

responses. The use of inductive techniques has been suggested to be more prevalent and/or more effective with girls rather than boys (Feshbach, 1982; Hoffman & Levine, 1976). When gender-related differences in empathy and prosocial behaviors have been found, these have generally favoured girls (Eisenberg & Miller, 1987; Smith, Leinbach, Stewart, & Blackwell, 1983).

Another possible contributor to the sex difference presently obtained may be the nature of the present prosocial task itself. In addition to a helping component, the present task involved a trick component. That is, the child participants could, in addition to helping or not helping, trick the stimulus child by sending a wrong signal about the answer. This may have inadvertently made boys feel more competitive (Barnett & Bryan, 1974), especially with other boys. A measure of competitiveness could be the frequency of tricks used. As a matter of fact, boys ($M = 5.10$, $SD = 3.04$) tricked more than did girls ($M = 3.75$, $SD = 2.35$), $F(1, 78) = 4.94$, $p < .03$. Thus, the obtained sex differences may in part be an outcome of the procedure as well as because of the more "nurturant" responses of females. In future, it would be interesting to run a similar but modified study, one without the trick component of the procedure.

Cue Conditions and Prosocial Helping

An integral part of this research was to study the effects of experimental conditions on helping response. The concordant lose-sad cue combination was predicted to be the most potent condition for engendering helping behavior (Hypothesis 3). However, the four cells did not differ among themselves. In the light of the previous theory and research (e.g., Barnett, 1982, 1987; Batson & Coke, 1981), this null result is surprising. Some possible explanations deserve consideration.

One possibility is that the experimental cues (facial or situational) were not strong enough given that there was no significant main effect or interaction for cue conditions (emotions and situations) on children's helping responses. This possibility is, however, unlikely because the very same manipulations did produce statistically reliable effects on affect match responses.

Another possibility is that the discordant cues in the two discordant cells had been resolved so that the children no longer perceived these cells to be discordant. When asked, a large majority of children (90% for the lose-happy cell, 89% for the win-sad cell) were able to give possible attributions and reasons for each of the stimulus child's emotional reaction. It has been reported that children who

were able to resolve discordant sad emotion and situation cues helped more than children who were not able to do so (Carlo, Knight, Eisenberg, & Rotenberg, 1991). However, in the present study, there was no significant differences in helping across all the four happy and sad cells. This suggests that there may be factors other than the resolution of discordant cues operating to facilitate helping behavior.

Yet, another possibility is a conflict between self-interests invoked by competitive situations and altruistic tendencies caused by empathic disposition. As suggested earlier, a measure of competitiveness could be the frequency of tricks used. High empathy children ($M = 4.1$, $SD = 2.0$) tricked as often as did low empathy children ($M = 4.8$, $SD = 3.4$), $F(1, 78) = 1.46$, $p < .23$.

A final possibility is that the general "game" aspect of the experimental task may have overridden any specific effects of emotion cues, particularly sadness. It may be that the present game context moderated the effects of previously witnessed sadness. Another related possibility is that the stimulus character (in all four conditions) was scheduled on a losing strategy given no prosocial intervention from the subject. This general situational cue (losing) during the prosocial helping task procedure may have taken precedence over the other experimental cues (carry-over effects of the

four experimental conditions). In this manner, the general similarity of situational content during the helping task could have erased any potential effects the previous cue conditions might have had.

Affect Matching, Empathy (EC), and Prosocial Helping

Affect match was not found to correlate with prosocial helping scores. However, as reported earlier, high empathy children gave greater affect match and prosocial helping responses than did low empathy children. This might suggest that high empathy children helped more than low empathy children because of their empathic tendency to respond affectively in different (concordant and discordant) situations.

In general, the affect match and empathy (EC) measures may each tap a somewhat different context of responsiveness. The present affect match procedure, as stated in the Introduction, seems to provide too narrow a context for assessing empathy as the wide-ranging ability to understand and feel with others' emotions. What the affect match procedure was designed experimentally to identify, however, is differential responsiveness to specific emotion cue conditions. From the affect match measure, we learn about the relative effectiveness of different cue conditions for

eliciting children's emotional responses. Used as an approximate measure of empathy, affect match responses (match to the stimulus child's facial emotion) indicate the relative effectiveness of different controlled stimulus conditions. The experimental context for assessing the effects of selected cue conditions on affect match can be an indicator of emotional responsiveness. Thus, affect match, as measured, would be expected to relate to more general empathy. But empathy as a construct requires both a broader and more evocative set of stimuli and a more comprehensive response measure. The Empathy Continuum procedure appeared to provide a better index of empathy tapping children's concordant emotional responses across a wide range of both emotions and situations. Given present results, it also proved to be a more sensitive probe of empathy as a motivator of prosocial helping behaviour.

In particular, prosocial behavior is understood generally to reflect other-person oriented acts. Affect match scores alone are insufficient to predict prosocial response because they provide little or no index of empathic (other-person oriented) motivation. For example, a high affect match score alone may reflect either a lot or no other-person oriented regard in the emotion experienced. In contrast, the Empathy-Continuum assesses cognitive-affective

mediations, and EC scores explicitly reflect increasingly other-person oriented attributions to one's own emotion at measuring higher EC levels. This focus on the other person is especially important in motivating prosocial behavior (Batson & Coke, 1981). Focusing on the other person (as in role taking) facilitates not only empathic arousal (Davis, 1983) but also helping behavior (Davis, 1983; Hoffman, 1975). Clearly, then, it is not only the quantity of emotional affect match but also the quality of empathy (other-oriented concordant affect) that matters in helping responses.

Finally, it deserves comment that both the experimental context for assessing affect match and prosocial responsiveness were similar in the present study. However, from present findings, it appears that similarity of context may not be as critical for the prediction of helping as the kind of measure used to tap empathy. This finding is somewhat at odds with theoretical writings stating that the more similar the context the greater the likelihood of helping responses (Eisenberg & Lennon, 1987; Peraino & Sawin, 1981; Strayer, 1987a). Yet, we do think that there is merit in this suggestion, if effective means of measuring empathy are used. It may have enhanced the relationship of affect match and helping to make the contexts even more similar by incorporating a similar experience for subjects and stimulus

children in the experiment. For example, it has been reported that children's empathy with someone with a similar experience (e.g., winning or losing the same game) will be enhanced (Barnett, 1984). In this way subjects could experience the condition they were subsequently to respond to when witnessing the stimulus child.

The present findings indicate the usefulness of self-report measures such as the EC which operationalized empathy as an interaction of both cognitive and affective factors. Thus, despite the limitations of self-report measures of empathy noted by many (Eisenberg & Lennon, 1987; Eisenberg & Fabes, 1993; Strayer, 1987a), they are necessary to assess conscious affective experience and are, in the present case, valid predictors of prosocial helping.

Emotion Recognition and Affect Matching

The present hypotheses (3) on affect matching had been derived mostly from related previous findings on emotion recognition. All expectations were confirmed. This basic convergence of findings for both emotion recognition (previous studies) and affect matching (present study) shows that basic processes such as cue concordance versus discordance are generally applicable to both emotion recognition and affect matching. The inference is that

accurate emotion recognition is a precondition for affect matching.

The present findings show that there is a meaningful way in which the two kinds of cues are used in affect matching. These findings correct the picture of cue usage in children portrayed by past work (e.g., Iannotti, 1975, 1985) which suggested that children relied on either situational or facial-expressive cues. Although theoretically, either one of the situational and emotional cues is sufficient to evoke a response, the present findings suggest that emotion recognition may involve attending to just one cue whereas, affect matching involves attending to the fit between situation and emotion. Thus, it may be reasonable to state that emotion recognition and affect matching are qualitatively different processes. This points out a necessary distinction often neglected in previous research using only affect match or emotion recognition as measures of empathy. We now present evidence pertaining to emotion recognition, distinct from affect matching.

Emotion recognition. Present results indicate that emotion recognition was a straightforward task for the present 9-year-olds. Nearly all children (99.7%) correctly identified the positive and negative facially-expressed emotions regardless of the concordant or discordant

situational conditions. This finding is somewhat novel in that, theoretically, one would normally expect concordance of cues to be more conducive to emotion recognition than discordance of cues (Kurdek & Rodgon, 1975; Reichenbach & Masters, 1983). Present findings may be due to differences in stimulus factors and the age of the sample, compared to previous studies.

For example, in some studies of emotion recognition based on discordant facial and situational cues, younger children (kindergartners) were found to have relied more on facial cues (Gnepp, 1983; Kurdek & Rodgon, 1975; Reichenbach & Masters, 1983), older ones (third graders) more on situational cues (Iannotti, 1978; Reichenbach & Masters, 1983; Wiggers & van Lieshout, 1985). Although the opposite has sometimes been reported (Burns & Cavey, 1957; Gove & Keating, 1979; Greenspan et al., 1976), in general, with age, reliance on situational cues increased, whereas reliance on facial-expressive cues decreased (Hoffner & Badzinski, 1989; Kurdek & Rodgon, 1975). It has also been reported that older children (aged 8-11 years) were more able to integrate cues compared to younger children (Greenspan et al., 1976; Hoffner & Badzinski, 1989; Wiggers & van Lieshout, 1985). Present findings also show that 9-year-old children are able to integrate emotion and situation cues.

As shown in the present study, 9-year-olds reported nearly perfect emotion recognition. This may in part be due to present stimulus factors. The stimuli used in the present study were simple, unambiguous, and realistic (videotaped presentation of children and context) in contrast to drawings of stimuli (Burns & Cavey, 1957; Hoffner & Badzinski, 1989; Kurdek & Rodgon, 1975) or picture stories (Borke, 1971; Gnepp, 1983, 1989) used in past studies. As well, the emotions were familiar to children. Further, by the age of 9 years, emotion recognition for simple emotions of "happy", "sad", even in discordant situations, should not pose a problem (Wiggers & van Lieshout, 1985).

Most past studies have separately examined emotion recognition and affect matching. A study that jointly examined emotion recognition and affect matching in 4-5 year-olds (Mood, Johnson, & Shantz, 1978) studied their social comprehension (recognition of emotionally charged situations) and affect matching (using only concordant emotion and situation cues). Emotion recognition ("happy" and "sad" emotions) by the children was correct 57% of the time. Percentage affect matching was even lower, 17% of responses. Compared to present findings and related research, emotion recognition understandably increases between the ages of 5 and 9 as does affect matching. Strayer (1993) confirmed an

increase in affect matching from age 5 to age 9, as has also been found in other studies (Lennon & Eisenberg, 1987). It is interesting that there appears to be a relatively much greater increase in recognition than in affect match responses across the age span. Although the present emotion recognition rate was 99.7% for 9-year-olds, when they were asked if they experienced any emotion in response to stimuli, only 30% of their responses were affect matches. While recognizing the other person's emotion, children do not necessarily report feeling the same emotion as the identified stimulus child (Shantz, 1983). Therefore, across age, the general conclusion seems to be that both emotion recognition and affect matching increase as a function of increasing cognition and social-emotional experiences. Nevertheless, the ability to recognize emotion does not ensure or require that such emotions be responded to with any emotional response, including affect match. This conclusion is theoretically necessary for distinguishing the two variables, and is ecologically valid as well.

It may be proposed that affect matching is greater in older children because of age-related increases in cognitive development (Hoffman, 1975), including the increasing ability to infer others' inner states (Flapan, 1968), and to integrate situational and expressive cues (Smith et al.,

1983). Nevertheless, affect matching in children does not seem to occur at very high levels across studies. Clearly, a child may recognize the other person's emotion, by facial-expressive or situational cues, without necessarily experiencing a similar emotion. We can conclude that emotion recognition is not a sufficient condition of affect matching.

Affect matching. The present objective was to study the effects of concordant and discordant emotional and situational cues on affect matching. Results confirmed that concordant cues elicited greater affect match responses than did discordant cues (Hypothesis 5). Also, positive emotions elicited more affect matches than negative emotions (Hypothesis 6) as one would expect from past studies (Cole, 1986; Ekman & Friesen, 1975; Malatesta & Haviland, 1982; Saarni, 1984).

The discordant situations were not treated alike, as predicted (Hypothesis 7). There was a difference in reactions to the win-sad and lose-happy manipulations. Given the greater number of affect matches to the discordant lose-happy situation, it may have been perceived as less discordant than the discordant win-sad situation. This finding is consistent with reports that negative, in contrast to positive, emotion tends to exaggerate the discordance in an already discordant situation (Hoffner & Badzinski, 1989;

Wallbott, 1988). As mentioned earlier, affect match involves attending to the fit between situation and emotion. It is this "fit" that impacts on affect matching. Happy emotions are expected (Hoffner & Badzinski, 1989; Reichenbach & Masters, 1983; Schwarz & Clore, 1983), to "fit" better than sad emotions, which are disruptive or "deviant" (Hoffner & Badzinski, 1989), particularly in discordant contexts.

The presence of an interaction effect between emotion and situation showed that there was no bias to respond to either happy or sad emotions. Responses were dependent on the context (win/lose) of the emotion so that affect matches in the win condition were significantly greater in response to the happy than to the sad stimuli, whereas no significant differences occurred in the lose condition. This finding is consistent with previous research that children weighed negative situations more heavily than positive ones when responding to emotions (Gnepp, 1989). In conjunction with the main effect for concordant versus discordant conditions, the interaction effect suggests that the differences are particularly notable when contrasting the concordant happy (win-happy) to the discordant sad (win-sad) cues. Possibly, because people cope with losing in different ways, one cannot be sure if the concomitant emotional response is appropriate (unlike in the win situation) because emotions in this (lose)

context need not be expressed overtly, or may be masked with another emotion (Cole, 1986; Saarni, 1984, 1985; Shennum & Bugental, 1982). These findings, taken together with the previous findings on empathy and affect match, suggest that high empathy, compared to low empathy, children judged better the fit between situation and emotion cues in both concordant and discordant contexts as evidenced by their affect match scores.

The present findings that affect matching results from a joint operation of both emotional and situational cues suggest that 9-year-olds have implicit theories of affect or "affective scripts" (Strayer, 1986) which recognize that certain situations and emotions go together (Barden, Zelo, Duncan & Masters, 1980; Harris, 1983; Zelko, Duncan, Barden, & Garber, 1986). These findings provide empirical evidence for the theoretical view that in most real life situations, emotional content is conveyed by both concordant facial expression and the accompanying situational cues (Hoffman, 1975; Strayer, 1987a). This view questioned the ecological validity of approaches that treat empathy only in terms of affect match to either the situation or the emotion of the stimulus person (Iannotti, 1978, 1985). Given that affect matching contributes to empathy measurement, an obvious implication that can be drawn here is that procedures which

require affect matching to emotional expressions that are discordant with the situation may be less useful for empathy measurement because discordant cues result in diminished affect matching.

Procedures comparing concordant and discordant cue conditions may be more useful for assessing developmental trends in relation to children's usage of either emotional or situational cues than for tapping affect matching as an index of empathy. Possibly, they may also provide information on the egocentric versus nonegocentric use of multiple cues (Iannotti, 1978; Kurdek & Rodgon, 1975; Reichenbach & Masters, 1983; Urberg & Docherty, 1976; Wiggers & van Lieshout, 1985), but this presumes that reliance on one type of cue (e.g., stimulus character's facial expression) is more validly "non egocentric" than reliance on another type of cue (e.g., situational context).

General Conclusion

Empathy appears to influence affect matching. High empathy children had significantly higher affect match scores than did low empathy children. Furthermore, high and low empathy children exhibited different patterns of affect match responses to concordant and discordant situation and emotion cues. High empathy children responded more to the different

concordant and discordant cue combinations, whereas low empathy children's affect match responses were more context-bound. Although, in general, cue combinations may influence appraisal and affective responding (so that concordant as compared to discordant situation and emotion cues elicit higher affect matches), the level of one's empathy helps to clarify more precisely these basic affect match responses.

Affect matching is distinct from emotion recognition. Children's emotion recognition is not a sufficient condition of affect matching as indicated by their much higher emotion recognition rate compared to their affect match responses. Affect matching concerns the response to both situation and emotion cues. Whereas emotion recognition in the present study involved attending to just one cue, affect matching involved attending to the fit between situation and emotion. This was demonstrated by the significant interaction effect between situation and emotion. Furthermore, this cue integration depended on the type of situation versus emotion. No gender differences were evident in affect matching.

In general, prosocial helping responses appeared not to be influenced by situational and emotional cues or by affect matching studied under different cue conditions. Instead, helping was significantly affected by the empathic disposition and gender of the respondent. In particular,

empathy appears to be an important influence of both affect match and helping responses although these latter responses may not be related to one another.

Appendix A

Ethics Committee's Approval

The present study has been approved by the Simon Fraser University Ethics Committee. The contents of the consent form for parents is now described:

The University and those conducting this project subscribe to the ethical conduct of research and to the protection at all times of the interests and comfort of subjects. This form contains valuable information regarding the present project. Please read it carefully.

Children's Responses to Person- and Situation- based Cues

Our interest concerns how nine-year-old children respond to dramatic T.V. vignettes and how, as observers, they react to other children who have either won or lost a game.

There are two parts to this project for the child participant. In the first part, your child will be asked to watch a videotape with short stories mostly involving children. After each story, your child will be asked for his or her reactions to the story. We anticipate that the first part will take 35 to 40 minutes. There will then be a break of 15 minutes.

In the second part, your child will be asked to view four brief video vignettes (totalling 4 minutes) of children playing a game. Your child is then given a chance to participate, if he or she wishes, in a fifth game to be observed via video relay technology. The total time needed for participating in the entire study is about 100 minutes including the 15 minute break.

Anonymity is respected: your child will merely be given a number as a form of identification. Access to data from a particular child is limited to that child, his or her parents, and the researchers involved.

Consent Form

Having been asked by Anthony Chang, PhD candidate, of the Psychology Department of Simon Fraser University to participate in a research project, I have read the description of the project above.

I understand that I may withdraw my participation in this experiment at any time. I also understand that I may register any question or complaint I might have about the experiment with the researcher above, the Ph.D. supervisor, Dr. Janet Strayer, or with Dr. Roger Blackman, Chairman of the Psychology Department, Simon Fraser University.

I also give permission to allow my daughter/son
_____ to participate with the understanding that
she/he may withdraw her participation at any time.

Signature (parent/guardian): _____

Date: _____

Copies of the results of this study, upon its completion, may
be obtained by contacting: Anthony Chang, Department of
Psychology, Simon Fraser University. Thank you.

Appendix B

Table B1

The Empathy Continuum: Integrated Emotional-Cognitive (EC)
Scoring System (adapted from Strayer, 1989, 1993)

			Description
EC	EC Level	Affect	
score	(Cognitive	Match	Affect Match for S and SP ^a
	Mediation)		
0	I	0	No emotion reported for SP
1		0	Accurate SP emotion reported for character, but no (or discordant) emotion for self
(S refers to self-reported emotion (subject child) and SP refers to stimulus person.)			
NO REPORT OF MATCHED EMOTION			
2	II	1	Similar emotion for S-SP
3		2	Same emotion, different intensity
4		3	Same emotion, same intensity

NO ATTRIBUTION OR IRRELEVANT REASONS ARE PROVIDED FOR MATCHED
EMOTION: e.g., "I just didn't like it".

- | | | | |
|---|-----|---|-----------------------------------|
| 5 | III | 1 | Similar emotion for S-SP |
| 6 | | 2 | Same emotion, different intensity |
| 7 | | 3 | Same emotion, same intensity |

ATTRIBUTION BASED ON STORY EVENTS RATHER THAN CHARACTER'S SITUATION: e.g., "I felt scared of that creepy, old house."

- | | | | |
|----|----|---|-------------------------|
| 8 | IV | 1 | As above in this column |
| 9 | | 2 | |
| 10 | | 3 | |

ATTRIBUTION REFERS TO A SPECIFIC CHARACTER'S SITUATION: e.g., "I felt scared when he went up to that old house."

- | | | | |
|----|---|---|----------|
| 11 | V | 1 | As above |
| 12 | | 2 | |
| 13 | | 3 | |

ATTRIBUTION INDICATES TRANSPOSITION OF SELF INTO SITUATION AND/OR ASSOCIATION TO ONE'S OWN EXPERIENCES: e.g., "Well, I'm scared but curious like him about stuff like that."

- | | | | |
|----|----|---|----------|
| 14 | VI | 1 | As above |
| 15 | | 2 | |
| 16 | | 3 | |

ATTRIBUTION INDICATES RESPONSIVENESS TO CHARACTER'S FEELINGS: e.g., "I felt sad because she felt so put down."

- | | | | |
|----|-----|---|----------|
| 17 | VII | 1 | As above |
| 18 | | 2 | |
| 19 | | 3 | |

ATTRIBUTION INDICATES SEMANTICALLY EXPLICIT ROLE TAKING:
e.g., "If I were in her place, I'd be angry at him for
treating me like that."

S refers to self-reported emotion (subject child) and SP
refers to stimulus person.

Appendix C

Table C1

Empathy Continuum Stimuli (adapted from Strayer, 1989, 1993)

Old House	Three children sneak into a fenced-in yard at night. A boy climbs up creaking stairs to peer through a window into the house. A looming shadow of a man appears above him and the children run away.
Spilled milk	A husband and a wife have an angry exchange while their daughter is watching T.V. in the background. The man slams the door as he leaves; the woman shouts at the girl to come to dinner; the girl accidentally knocks over a glass of milk and the mother slaps her.
Jeannie	A young woman is shown talking directly to the viewer about the difficult life she and her children had on an isolated farm with her abusive husband.
Skates (from a commercially produced film, <i>Our Vines Have Tender Grapes</i> ; film segments obtained from Dorothy Flapan, who used them in a 1968 study)	A girl and a boy argue over taking turns on her new skates. The boy calls her names and threatens to tattletale. She pushes him down and he runs crying to the girl's mother. The father is called in to pursue the issue. The boy lies, and the father believes his story. The girl defiantly maintains her story, is punished, and her skates given away to the boy. The girl is shown crying.
Newspaper	The girl has been sent to bed without her dinner. She calls

to her father from the bedroom window. He is reading the newspaper and seems torn between wanting to respond and to ignore her. He tells her to go back to bed.

Canes

A girl introduces herself to viewers and talks pleasantly about her life and fun, despite her disability. She is then shown practising walking up and down stairs with canes, while joking with the adult physiotherapist.

Circus

A father and daughter go to see the circus train on stopover one night. The elephant is let out to perform some tricks. The girl jumps and laughs excitedly, and is even lifted up on the elephant trunk.

Appendix D

Empathy Continuum Protocol

A) Old House

1. Pretend I didn't see this story and tell me what happened.
2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried" or gives a vague reply, say "tell me more about _____?"
 - b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"
 - c) if the subject does not name an emotion or the response is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy	Afraid
Surprised	Sad
Angry	Nothing
3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the boy felt? (Follow same guidelines as given in question 2.)
6. Did he feel that a lot (= 2) or a little (= 1)?
7. What made him feel that?

B) Spilled Milk

1. Pretend I didn't see this story and tell me what happened.

2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried" or gives a vague reply, say "tell me more about _____?"
 - b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"
 - c) if the subject does not name an emotion or the response is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy	Afraid
Surprised	Sad
Angry	Nothing
3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the girl felt? (Follow same guidelines as given in question 2.)
6. Did she feel that a lot (= 2) or a little (= 1)?
7. What made her feel that?

C) Jeannie

1. Pretend I didn't see this story and tell me what happened.
2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried" or gives a vague reply, say "tell me more about _____?"

b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"

c) if the subject does not name an emotion or the response is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy	Afraid
Surprised	Sad
Angry	Nothing

3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the woman felt? (Follow same guidelines as given in question 2.)
6. Did she feel that a lot (= 2) or a little (= 1)?
7. What made her feel that?

D) Skates

1. Pretend I didn't see this story and tell me what happened.
2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried" or gives a vague reply, say "tell me more about _____?"
 - b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"
 - c) if the subject does not name an emotion or the response

is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy Afraid

Surprised Sad

Angry Nothing

3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the girl felt? (Follow same guidelines as given in question 2.)
6. Did he feel that a lot (= 2) or a little (= 1)?
7. What made him feel that?
8. In this story, how do you think the boy felt? (Follow same guidelines as given in question 2.)
9. Did he feel that a lot (= 2) or a little (= 1)?
10. What made him feel that?
11. In this story, how do you think the father felt? (Follow same guidelines as given in question 2.)
6. Did he feel that a lot (= 2) or a little (= 1)?
7. What made him feel that?

E) Newspaper

1. Pretend I didn't see this story and tell me what happened.
2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried"

or gives a vague reply, say "tell me more about _____?"

b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"

c) if the subject does not name an emotion or the response is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy	Afraid
Surprised	Sad
Angry	Nothing

3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the girl felt? (Follow same guidelines as given in question 2.)
6. Did she feel that a lot (= 2) or a little (= 1)?
7. What made her feel that?
8. In this story, how do you think the father felt? (Follow same guidelines as given in question 2.)
9. Did he feel that a lot (= 2) or a little (= 1)?
10. What made him feel that?

F) Canes

1. Pretend I didn't see this story and tell me what happened.

2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried" or gives a vague reply, say "tell me more about _____?"
 - b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"
 - c) if the subject does not name an emotion or the response is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy	Afraid
Surprised	Sad
Angry	Nothing
3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the girl felt? (Follow same guidelines as given in question 2.)
6. Did she feel that a lot (= 2) or a little (= 1)?
7. What made her feel that?

G) Circus

1. Pretend I didn't see this story and tell me what happened.
2. How did you feel while you were watching that story?
 - a) if the subject says "bad", "upset", "concerned/worried" or gives a vague reply, say "tell me more about _____?"

b) if the subject says "surprised" or "excited", ask "is that good _____ or bad _____?"

c) if the subject does not name an emotion or the response is still vague, go to the emotion list below. Do not query neutral responses (i.e., "ok", "fine")

Happy	Afraid
Surprised	Sad
Angry	Nothing

3. Did you feel that a lot (= 2) or a little (= 1)?
4. What made you feel that?
5. In this story, how do you think the girl felt? (Follow same guidelines as given in question 2.)
6. Did she feel that a lot (= 2) or a little (= 1)?
7. What made her feel that?

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