

## Empathic Accuracy in the Interactions of Male Friends Versus Male Strangers

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In unstructured interactions, male friends were found to be more accurate than male strangers in inferring each other's thoughts and feelings. Plausible reasons for this difference were that friends (a) interacted more and exchanged more information, (b) had more similar personalities and therefore more rapport with each other, and (c) had more detailed knowledge of each other's lives. Data confirmed that the friends did indeed interact more and were more similar in their sociability than the strangers; however, these differences did not account for the friends' greater empathic accuracy. Instead, this was primarily attributable to a difference in knowledge structures, namely, the friends' ability to accurately read their partners' thoughts and feelings about imagined events in another place or time.

Historically, there has been a great deal of confusion about how to conceptualize and study the phenomenon of empathic accuracy (Goldstein & Michaels, 1985). The lack of consensus has hindered both research efforts and theoretical amplifications of this important construct (Barrett-Lennard, 1981; Marangoni, 1989). Recently, however, a new research paradigm has made it possible to move beyond previous debates over empathy and to study it as an emergent and constantly evolving social phenomenon located within a dyadic context (Ickes, Stinson, Bissonnette, & Garcia, 1990). As a consequence, the study of empathy has become part of a new wave in social cognition research—one in which the investigation of the discrete responses of individuals is replaced by the study of their interactions (e.g., G. Fletcher & Fitness, 1990; Frable, Blackstone, & Scherbaum, 1990; Ickes, Robertson, Tooke, & Teng, 1986; Ickes, Stinson, et al., 1990; Ickes, Tooke, Stinson, Baker, & Bissonnette, 1988).

In the past, most researchers have attempted to treat empathy as a disposition or skill belonging to an individual, an approach that most reviewers have credited with only limited success (cf. Chlopan, McCain, Carbonell, & Hagan, 1985; Funder & Harris, 1986; Kenny & Albright, 1987; Marangoni, 1989). An unfortunate consequence of this dispositional emphasis is that a crucially important variable—the relationship between individuals—has rarely been a focus of previous investigations. Although several studies have demonstrated that the length of acquaintanceship is an important determinant of

self-other consensus in person perception and trait attribution (e.g., Albright-Malloy, 1987; Cloyd, 1977; Colvin & Funder, 1991; Funder & Colvin, 1988; Funder & Dobroth, 1987; Park, 1986; Paunonen, 1989, 1991), we are aware of no comparable studies demonstrating that well-acquainted partners are more accurate than strangers in inferring the content of each other's thoughts and feelings.

A recognition of the theoretical importance of the empathizer-target relationship has been slow to emerge. Early writers, such as Mead (1934) and Piaget (1959), defined *empathy* as the cognitive ability to take the perspective of another or to understand someone's structuring of the world without necessarily adopting that same perspective. However, this type of empathy clearly allows the empathizer to remain at a social distance from the target. There is no obligation to become immersed in the *weltanschauung* of the other or even to adopt temporarily that alternate perspective. Moreover, a purely cognitive approach to empathy fails to account for any motivation to act on the knowledge provided by this other-centered cognition.

Despite these conceptual problems, the emphasis on perspective taking as the skill most necessary for empathy has continued to appear in various forms (e.g., Chandler, 1973; Feshbach, 1975; K. Fletcher & Averill, 1984). Work in this tradition has certainly led to some useful insights; however, it has become increasingly evident that the willingness and even the ability to engage in mental perspective taking does not ensure the accuracy of the empathic inference. As Smither (1977) has noted, at best such impersonal perspective taking is a sort of pseudoempathy that can be activated without real historical, contextual knowledge; at worst, it is mere projection.

To truly understand another person's emotions, attitudes, and mental structuring of the world, it seems that one must also know that person's external situation and past experiences (Barrett-Lennard, 1981; Goldstein & Michaels, 1985; Rogers, 1975). In other words, although the cognitive ability of the perceiver may be a necessary condition for empathic accuracy, it is not sufficient in and of itself. Empathic accuracy requires that

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the perceiver's cognitive activity be based in large measure on real knowledge of the other and of his or her circumstances and not merely on supposition, analogy, or projection. By implication, empathic accuracy also requires the expressive skills of the target to convey an otherwise private experience through verbal or nonverbal behavior.

To be sure, a minimal amount of shared information is provided by common human and cultural experiences, enabling even total strangers to attain some degree of accuracy in inferring each other's thoughts and feelings. However, the interactants' repeated exposures to and interactions with each other across time should serve to increase and refine that accuracy. Through their history of interaction, the participants should acquire a store of mutual knowledge that provides them with a common lexicon for interpreting and expressing their understanding of each other's private experience.

Empirical and theoretical work on the nature of friendship supports this reasoning. The essence of friendship in our society appears to be a voluntary interdependence and a willingness to engage in a dynamic process of mutually defining one's degree of relatedness (Wright, 1974). The primary goal of friendship, as defined in a survey of over 1,000 adults (Fischer, 1982), seems to be social-emotional satisfaction rather than instrumental accomplishment. Consequently, there is an underlying intimacy between friends in which they let down their guard, revealing their real selves and not simply their role selves (Kurth, 1970). Because friendships encourage mutual disclosure, feelings of trust, and increased proximity in multiple shared activities, they should lead friends to develop the store of shared knowledge described above. They should also provide both the opportunities and the motivations for friends to attend to each other's subjective experience and to attempt to accurately infer each other's thoughts and feelings.

These considerations suggest the first, and most intuitively obvious, hypothesis to be tested in this study: that empathic accuracy should be greater for friends than for strangers. Previous research has already established an acquaintanceship effect in the accuracy of judgments about personality traits—an effect that Funder and Colvin (1988) have argued can be explained most parsimoniously by assuming "that acquaintances have information available to them when judging targets that strangers do not possess" (Colvin & Funder, 1991, p. 892). The only real surprise in this literature, according to Paunonen (1991), is that even strangers display a substantial degree of accuracy in their judgments, if accuracy can be inferred from significant perceiver-target agreement (cf. Albright, Kenny, & Malloy, 1988; Watson, 1989). Although inferring someone's thoughts and feelings may differ in important ways from inferring someone's personality traits, it is probably safe to predict that friends should be better than strangers at both of these tasks.

Of more compelling theoretical interest is the question of why friends should be more accurate than strangers in inferring each other's thoughts and feelings. One possibility is that a typical interaction between friends is behaviorally more intense and involving than one between strangers and that friends simply provide each other with more verbal and nonverbal cues about their respective thoughts and feelings. According to this interpretation, the greater empathic accuracy of friends could

be explained by the greater amount of information available to friends during the specific interaction being studied.

A second possibility is that the greater empathic accuracy of friends depends not on the greater amount of information available during the immediate interaction but on the store of shared knowledge acquired during the entire course of the friends' relationship. According to this interpretation, the greater empathic accuracy of friends versus strangers should still be evident even when behavioral differences in the levels of their interactional involvement in the immediate interaction are statistically controlled. This interpretation is based on the assumption that the quantity of information that friends exchange in their immediate interaction is of less importance than the quality (i.e., revealingness) of this information and the enhanced ability of friends to interpret such information in terms of the larger common store of knowledge that they bring with them to the interaction.

Because this second interpretation is more consistent with the theoretical and empirical view of friendship that we have summarized, we were led to predict that any immediate differences in interactional involvement would not account for the hypothesized greater empathic accuracy of friends versus strangers.<sup>1</sup>

## Method

### Overview

The procedure was essentially the same as that reported by Ickes, Stinson, et al. (1990). The members of each dyad—either male friends or male strangers—were led into a "waiting room" and left there together in the experimenter's absence. During this interval in which the subjects were ostensibly waiting for the experiment to begin, their verbal and nonverbal behaviors were unobtrusively audio- and videotaped. When the experimenter returned at the end of the observation period, the subjects were partially debriefed and asked for their signed consent to release the tape for use as data. They were also asked to participate in a second part of the study that concerned their specific thoughts and feelings during the interaction.

If consent was given, the subjects were seated in separate but identical cubicles where they were each instructed to view a videotape of the interaction. By stopping the videotape with a remote start/pause control at those points where they remembered having had a specific thought or feeling, each subject made a written, time-logged listing of these *actual thought/feeling entries*. The subjects were then instructed to view the videotape a second time, during which the tape was stopped for them at each of those points at which their interaction partner had reported a thought or feeling. The subject's task during this pass through the tape was to infer the content of their partner's thoughts and feelings and provide a written, time-logged listing of these *inferred thought/feeling entries*. When both subjects had completed this task and filled out a short posttest questionnaire, they were debriefed more completely and then thanked and released.

<sup>1</sup> A third possible interpretation—one assuming that selectivity pressures during friendship formation operate to ensure that friends are more similar than randomly paired strangers and that this similarity is the basis for the greater empathic accuracy of friends—is considered in later sections of this article.

### Subjects and Design

This experiment used a nested single-factor design with relationship status (friends vs. strangers) as the independent variable and with dyads nested within condition. The initial group of subjects selected for the study were 72 male undergraduates who were enrolled in introductory psychology at the University of Texas at Arlington. After they were recruited by telephone, 48 of the initial 72 subjects were randomly paired into 24 same-sex dyads as strangers. The remaining 24 subjects were paired into dyads with a same-sex friend of at least 1 year's acquaintance, nominated by them.<sup>2</sup>

These friends were recruited by phone from a list of "close, same-sex friends" obtained from the subjects during departmental pretests. At that time, all students involved in the pretesting had completed a brief questionnaire requesting information about close, same-sex friends who might be willing to participate in an experiment for cash payment.<sup>3</sup> The requested information included the nominated friends' names, addresses and phone numbers, ages, length of acquaintance, and the frequency with which they interacted.

This information served at least three purposes. First, the full names were necessary to know if the same friend had been nominated by more than one person. Second, the addresses were used in making decisions about which nominated friend would be requested to participate in the experiment. If the subject nominated two friends he had known for the same length of time, the experimenter requested that the subject invite the friend living nearest the university, to facilitate compliance. Finally, the information was used as a test in discriminating close friends from mere acquaintances. If the subject did not know such basic information about his friend, it was presumed unlikely that they interacted on a regular basis.<sup>4</sup>

Only male-male dyads were included in this study to avoid the potential ceiling effect for interactional involvement that might be expected if female-female dyads were used. The findings of previous studies have indicated that male strangers display relatively low levels of interactional involvement, whereas female strangers display relatively high levels of such involvement (e.g., Ickes, Schermer, & Steeno, 1979; Ickes et al., 1988). These findings led us to expect that substantial differences in interactional involvement would be found when comparing male friends with male strangers but not when comparing female friends with female strangers. Only when such differences were substantial could we ensure a strong test of the hypothesis that the empathic accuracy of friends would be greater than that of strangers, even when differences in interactional involvement were statistically controlled.

### Setting and Equipment

The observation room where the dyad members' interactions were recorded was furnished with a sofa, a coffee table concealing a wireless microphone, a small table with a slide projector oriented toward a slide screen (both used in support of the cover story), a table near the door on which subjects deposited their books, and two bookcases. Across the hallway in a darkened storage room, a video camera with a zoom lens was hidden in stacked cardboard boxes in such a way that the interaction in the observation room could be recorded with a minimal chance of the camera being discovered by the subjects.

A large room adjacent to the observation area was equipped as the experimenter's control station. Here the experimenter and a research assistant operated two identical videocassette recorders (VCRs) connected by a Y-adaptor to the video camera in the storage room. Each VCR was also connected to one of two 25 in. color TV monitors that faced identical test cubicles. Each test cubicle was equipped with a help button to facilitate communications between subject and experimenter. Each cubicle also contained (a) an independent remote start/pause switch connected to its own VCR and TV monitor system and (b)

a supply of thought/feeling coding forms, to be described below). For a schematic diagram of the laboratory and its arrangement, see Ickes et al. (1986).

### Procedure

When the subjects were contacted by telephone to remind them of their upcoming participation in the study, subjects in the strangers condition were instructed to wait in separate waiting areas to ensure that they would not have an opportunity to meet and become acquainted before the experiment began. Subjects in the strangers condition were also provided with different names for their experiments so that they did not know until the last minute that they were in the same experiment.

*Collection of videotape data.* The experimenter met the two subjects in their waiting areas and escorted them down the hallway into the observation area. At that point, a research assistant in the control room activated the video camera and the VCRs. After commenting that the subjects would be asked to view a series of slides and answer questions about them, the experimenter proceeded to turn on the slide projector, presumably to begin the session. The slide projector was rigged to produce a sudden flash of light, apparently burning out its bulb. The "embarrassed" experimenter apologized for the delay necessitated by this problem. She then left, ostensibly to obtain a spare bulb, with the promise to "be back in a few minutes." During her absence, the behavior of the subjects was unobtrusively recorded on videotape.

Six min after the experimenter had left the room, she returned with

<sup>2</sup> For various reasons, several other dyads that participated had to be dropped from the study. Four dyads were unusable because at least one of the subjects discovered the hidden camera, three dyads were dropped because of audio or visual difficulties, three taping sessions were ended because one of the subjects left the room after the experimenter left, and one dyad was dropped because one of the subjects listed only one thought/feeling entry, thereby failing to meet the prior criterion of at least three entries. At the later stage of data analysis, an additional dyad was dropped from the friends condition because it was a statistical outlier on several variables. A dyad was then randomly dropped from the strangers condition to keep the sample sizes even.

<sup>3</sup> No attempt was made specifically to define *friend* for the subjects, except for the requirement that they had sought this person's company for at least 1 year. This decision was based on the fact that friendship is a very flexible, multidimensional process that varies according to one's stage of development, sex, sociocultural background, and age (Hays, 1989). Hays cited three particular difficulties that arise when researchers impose their own definitions of friendship on their subjects: (a) the definition may not match the subjects' definitions or be appropriate in their context, (b) definitions may differ between investigators, and (c) the definition supplied by researchers may include requirements that exclude some valid types of friendship, hence shortening the spectrum of the phenomenon (Hays, 1989).

<sup>4</sup> Ideally, the nominated friends would have served as the subject pool for all partners. Twenty-four of them would have been paired with the person who nominated them, and 24 would have been paired with a stranger from the pool of psychology students. However, repeated requests for nominated friends to attend the experiment without the person who nominated them resulted in virtually no willing participants. Consequently, strangers were chosen from the pool of those who had nominated same-sex friends on the pretest questionnaire, but they were randomly paired together instead of being paired with their friends. This procedural change was based on the assumption that there were no essential differences between the subjects and the friends they nominated.

the new bulb and probed the subjects for evidence of suspicion. The subjects were then given a partial debriefing in which the experimenter explained that they had been videotaped for the purpose of studying their spontaneous, naturally occurring interactions. The methodological reasons for the deception were explained and the subjects were asked for their written informed consent (a) to release the videotape of their interaction as a source of data and (b) to participate in a second phase of the study designed to assess their thoughts and feelings during the interaction.

The consent form indicated that, to protect the subjects' privacy, the videotape of their interaction would not be studied unless they both gave their written permission to release it for this use. If either subject in a dyad chose to withhold permission, both copies of the videotaped interaction would be erased on the spot. All subjects in this study agreed to sign the consent form, and no objections were noted.

*Collection of thought/feeling data.* Once the subjects had given their written consent, the second phase of the experiment began. The subjects were seated in individual test cubicles, and the experimenter returned to the control room. During this phase, the subjects were asked to make a written record of all the thoughts and feelings they remembered having had during the 6-min period they were left alone together. Video instructional tapes were used to give detailed instructions regarding the thought/feeling data collection procedure.

Consistent with these instructions, the subjects paused the videotape at each point during the interaction that they remembered having had a specific thought or feeling. They then recorded other pertinent information on the thought/feeling coding form by entering (a) the time the thought or feeling occurred (seen on the upper-left corner of the videotape), (b) whether the entry was subjectively perceived as a thought or as a feeling (coded "I was thinking:" or "I was feeling:" on the coding sheet), (c) the specific content of the thought-feeling entry (written in sentence form to complete the initial phrase), and (d) whether the entry was subjectively perceived to be positive, negative, or neutral in its overall affective tone (coded +, -, or 0 on the coding sheet).

The videotaped instructions encouraged the subjects to report all thoughts and feelings they remembered having had as accurately and honestly as possible. At the same time, subjects were instructed not to report any new thoughts or feelings that may have occurred to them for the first time while they were viewing the videotape. They were assured of the complete anonymity of their data and were informed that their interaction partner would never be shown their thought/feeling responses. These assurances, along with the subjects' ability to respond in the privacy of a semidarkened test cubicle, were intended to facilitate complete and honest self-disclosure.

*Collection of empathic accuracy data.* After both subjects had viewed the videotape and had finished listing all of the thoughts and feelings they recalled having had during the 6-min interaction, the experimenter collected their coding forms and told them that the next phase of the study would begin. Once again, videotaped instructions informed them that they would be viewing the videotape of their 6-min interaction. This time, however, the subjects did not use their remote start/pause control to start and stop the tape. Instead, the experimenter (or her assistant) paused the tape at precisely those moments when the subject's interaction partner had recorded having had a specific thought or feeling.

Each time the tape was stopped for them, the subjects were required to make inferences about the content and valence of their partner's thought or feeling. Using a coding sheet similar to the thought/feeling coding form, subjects entered (a) the time the thought or feeling occurred (as recorded by the digital clock appearing on the videotape), (b) whether the entry was presumed to be a thought or a feeling (coded "He was thinking:" or "He was feeling:" on the coding sheet), (c) the specific content of the thought or feeling (again reported in sentence

form), and (d) whether the entry was presumed to be positive, negative, or neutral in its overall affective tone (coded as +, -, or 0 on the coding sheet).<sup>5</sup>

*Collection of final self-report measures.* The subjects were then asked to remain in their cubicles to complete a posttest questionnaire. This questionnaire included personality measures of self-monitoring (Snyder, 1974), sex role orientation (Bem, 1974), and narcissism (Ras-kin & Hall, 1979). Also included were items that assessed the subjects' perceptions of (a) the quality of their interaction and (b) the degree to which they liked their interaction partners.

Subjects who had not participated in a departmental pretesting at the beginning of the semester were also asked to complete questionnaire measures of empathic accuracy (Ickes, 1988), components of empathic response (Davis, 1980), self-consciousness (Fenigstein, Scheier, & Buss, 1975), and shyness and sociability (Cheek & Buss, 1981). Subjects in the friends condition were given a brief posttest about their friendship. Because the data from the friendship posttest are not relevant to the present investigation, they are not discussed further. When the appropriate questionnaires had been completed, the subjects were completely debriefed, sworn to secrecy, and given experimental credits or cash payment for their participation in the study.

### *Behavioral Measures*

Several behavioral measures were subsequently coded from the videotapes by pairs of independent judges who were kept blind, insofar as possible, to the friends versus strangers variable. The first of these measures—interpersonal distance—was operationally defined as the distance between the dyad members' proximal shoulders as they were seated on the couch. This distance was measured directly from the videotaped image on the TV monitor with a transparent metric ruler, once during the first minute of interaction and a second time during the last (sixth) minute. The interrater reliability for this measure was .98 for the average of the two ratings, which indicated no significant change across time.

A number of more temporally variable behavioral measures of interactional involvement were also assessed. These included the total frequency and duration of verbalizations (i.e., speaking turns), directed gazes, mutual gazes, expressive gestures, and expressions of positive affect (i.e., smiles and laughter). The interrater reliabilities of these measures ranged from .66 to .98, with a mean of .84. (For the operational definitions and criteria used to score the dynamic behavior measures, see Ickes, Bissonnette, et al., 1990, p. 27).

### *Self-Report Measures*

Four types of self-report data were obtained as the dependent variables: (a) the subjects' pretest responses to personality inventories, (b) the subjects' own reported thoughts and feelings, (c) their inferences about their partners' reported thoughts and feelings, and (d) their responses to the items on the posttest questionnaire.

*Thought/feeling measures.* The thought/feeling entries provided by the subjects were later coded by independent raters to assess (a) the total number of entries per subject, (b) the perspective of each entry (coded as a *direct perspective* if it represented the subject's own perspec-

<sup>5</sup> Only the data concerning the subjects' accuracy in inferring the content of the specific thoughts and feelings reported by their partners are reported in this article. The data concerning the subjects' accuracy in inferring the valence of their partners' thoughts and feelings are not reported because of the relatively low level of differential accuracy for the valence accuracy measure. For a discussion of this issue, see Ickes, Stinson, et al. (1990, p. 735).

tive or as a *metaperspective* if it reflected the subject's symbolic adoption of the partner's perspective), and (c) the focal target of each entry (coded *S* for self; *P* for partner; *O* for other persons; *E* for an environmental object, condition, or event; or *W* for the two interacting subjects referenced together as *we*, *us*, or *our*, etc.).

Previous experience suggests that this coding schema is sufficient to categorize reliably over 98% of the total thought/feeling entries. In the present study, the overall rate of interrater agreement was 91%. The unclassifiable entries were so few and idiosyncratic that they did not warrant changing the coding scheme to accommodate them.

**Empathic accuracy measure.** Our measure of empathic accuracy assessed the subject's ability to accurately infer and describe in writing the content of his partner's thoughts and feelings. The computation of this measure required subjective similarity judgments to be made by independent raters. With the aid of a custom software program created by Victor Bissonnette, all actual thought/feeling entries and the corresponding inferred thought/feeling entries were presented as paired stimuli on the screen of a microcomputer. Six raters, working independently, judged the similarity of each pair on a 3-point scale ranging from 0 (*essentially different content*) through 1 (*similar, but not the same, content*) to 2 (*essentially the same content*).

The internal consistency of the empathic accuracy (i.e., content accuracy) rating made by the six judges in this study was .95. After computing the mean content accuracy scores for each pairing of an actual with an inferred thought or feeling, we then transformed these data for subsequent analysis. The mean ratings were first summed across all of the thought/feeling inferences in a given subject's protocol. These summed values were then divided by the maximum number of accuracy points that could be obtained for the given number of inferences to derive an overall accuracy score that controlled for individual differences in the number of inferences made. This score could vary in its range from .00 (*total inaccuracy*) to 1.00 (*total accuracy*).

### Estimation of Baseline Accuracy Levels

As in the previous study by Ickes, Stinson, et al. (1990), we estimated the baseline level of content accuracy for each of the subjects by using a procedure suggested by Kenny (personal communication, 1988). This procedure required us to randomly pair each set of actual thought/feeling entries with the corresponding set of partner inferences and then to determine the level of content accuracy obtained with these random pairings. These baseline accuracy scores could then be either subtracted from or partialled out of the original accuracy scores to permit a more refined estimate of the subjects' ability to differentially infer the specific content of their partners' thoughts and feelings. For a more detailed discussion of this issue, see Ickes, Stinson, et al. (1990, p. 734).

To obtain the baseline accuracy estimates, a group of five raters (two men and three women) made subjective judgments about the degree of similarity in the content of the actual and inferred thought/feeling entries when they were randomly paired within each dyad. These five raters independently judged the content accuracy in the same 96 sets of randomly paired entries, and each rater's estimates of the baseline accuracy component for each of the 96 subjects was then computed. The internal consistency of the baseline accuracy estimates provided by these five raters was very high ( $\alpha = .90$ ), thus justifying our decision to use the mean of these estimates as our measure of baseline accuracy.

## Results and Discussion

### Tests of Trait Homogeneity and Trait Similarity

Our procedure for operationalizing the relationship variable (friends vs. strangers) was based on the assumption that the

personalities of the male friends were not significantly different from those of the male strangers. Because the trait data we collected could be used to provide at least a partial test of this assumption, a series of *t* tests was computed to compare the mean scores on each trait for the male friends versus the male strangers. These data, reported in Table 1, revealed no significant mean differences in personality between the male friends and the male strangers.

What remained to be tested, however, was the possibility that the male friends were more similar than the male strangers on one or more of the personality traits. To test this possibility, intraclass correlations of one dyad member's score on a given trait with his partner's score on the same trait were computed for each of the traits listed in Table 1. These intraclass correlations revealed one clear-cut example of greater similarity in the personality of male friends than of male strangers. For the Cheek and Buss (1981) measure of sociability, the scores of the male friends were highly correlated (.65), whereas the scores of the randomly paired male strangers were not (-.08). Moreover, these correlations were significantly different according to Kraemer's (1975) test of the homogeneity of intraclass correlations from independent samples (likelihood ratio with 1 *df* = 8.17,  $p < .005$ ).

This finding suggests that similar levels of sociability may be a selection criterion in the formation of men's friendships. It further suggests that personality similarity of this type could provide yet another explanation of why male friends might be more accurate than male strangers in inferring their partners' thoughts and feelings. Evidence bearing on this similar personality interpretation—namely, that such similarity leads male friends to "see things the same way" and have a greater degree of rapport with each other—is presented later in this section.

Table 1  
Means and Standard Deviations for Trait Measures  
in the Two Dyad Types

Personality measure	Friends		Strangers		<i>t</i> <sup>a</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Empathic accuracy	49.2	8.2	47.0	8.7	1.30
Empathic concern	25.0	4.0	24.7	5.7	0.29
Fantasy identification	23.1	5.5	22.5	5.5	0.52
Perspective taking	22.5	3.9	23.1	5.5	-0.58
Personal distress	17.5	4.1	16.7	4.9	0.83
Femininity	57.8	6.1	56.5	8.4	0.86
Masculinity	63.5	7.8	63.2	7.2	0.16
Narcissism	40.3	5.3	41.9	4.5	-1.59
Private self-consciousness	27.2	4.0	27.5	3.7	-0.37
Public self-consciousness	18.5	3.2	18.3	3.2	0.26
Social anxiety	16.8	3.2	17.4	2.8	-1.03
Self-monitoring	61.4	8.0	61.1	7.6	0.17
Shyness	20.8	4.4	20.9	5.3	-0.13
Sociability	14.4	2.8	14.8	3.1	-0.59

<sup>a</sup> None of the *t* tests reported in this table were statistically significant, even though all of these data were analyzed at the individual level of analysis (*df* = 94). The data were analyzed at this level because of the difficulty of contrasting means that were based on different units of analysis (individuals vs. dyads) in cases in which the friends' trait scores were correlated and the strangers' scores were not.

### Comparisons of Original and Revised Accuracy Scores

Table 2 contains data that provide dyad-level comparisons of (a) the original content accuracy scores, (b) the baseline accuracy scores, and (c) the revised content accuracy scores (original score minus baseline). Consistent with similar findings reported by Ickes, Stinson, et al. (1990, p. 735), the means for the original, baseline, and revised measures of content accuracy were all significantly greater than zero. These data indicate that our original content accuracy scores contain a small baseline component in addition to a much larger component that is presumably a more refined measure of differential content accuracy. Each of these components is highly reliable (all  $ps < .0001$ ) when tested against the null hypothesis.

Further analysis revealed that the original and the revised content accuracy scores were correlated .89 for the male friends, .96 for the male strangers, and .92 for all subjects combined. Similarly high correlations were reported in the study by Ickes, Stinson, et al. (1990). Thus, although the baseline component of content accuracy was statistically reliable for both the friends and the strangers in this study, there was still an average of 85% overlap in the variance of the original and the revised content accuracy scores.

### Interdependence of Dyad Members' Responses

Before testing the predicted associations among the variables of relationship status, amount of interactional involvement, and empathic accuracy, it was first necessary to determine whether the dyad members' responses were statistically independent or interdependent (Kenny, 1988; Kenny & La Voie, 1985). A series of intraclass correlations were computed for this purpose, with the results reported in Table 3. The data reveal substantial interdependence in the dyad members' content accuracy scores, with the important qualification that the friends' empathic accuracy scores were clearly interdependent, whereas the strangers' scores were not. The data also reveal substantial interdependence in the dyad members' behavior, as evident in intraclass correlations for the various measures of interactional involvement.

In general, the behavioral interdependence documented in Table 3 reflected a reciprocity-based similarity or convergence of the dyad members' responses. The only exception was found

Table 2  
Components of Content Accuracy Measure

Empathic accuracy measure	<i>M</i>	<i>SD</i>	<i>t</i> <sup>a</sup>
Original content accuracy	30.1	14.0	14.9*
Baseline content accuracy	5.2	5.5	6.5*
Revised content accuracy	24.9	14.5	11.9*

<sup>a</sup> The *t* values reported in this table test the significance of the mean of each component against the null hypothesis ( $df = 47$ ). The method of computation makes each component analogous to a percentage of a perfect accuracy score of 100. Because the dyad members' original and revised content accuracy scores were significantly correlated with those of their partners, the data in this table were tested using the dyad as the unit of analysis.

\*  $p < .0001$ .

Table 3  
Intraclass Correlations of Dyad Members' Responses

Response measure	Friends	Strangers	All dyads
Empathic accuracy			
Content accuracy	.48**	.07	.40***
Revised content accuracy	.37*	-.04	.27*
Interactional involvement			
Verbalizations (frequency)	.71***	.85***	.80***
Verbalizations (duration)	-.54***	.48**	.06
Directed gazes (frequency)	.51***	.58***	.58***
Directed gazes (duration)	.55***	.66***	.65***
Positive affect (frequency)	.41*	.71***	.59***
Positive affect (duration)	.62***	.68***	.69***
Gestures (frequency)	.53***	.25	.48***
Gestures (duration)	.16	.39*	.29*

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .005$ .

in the friends condition, where the interdependence took the form of compensatory responding for the measure of the duration of verbalizations. The data for this measure suggest that whereas the strangers tended to match each other,  $r = .48$ , in the total amount of time they talked, the friends tended to assume respective speaker-listener roles such that the more the speaker talked, the more the listener listened without talking,  $r = -.54$ . These intraclass correlations differed significantly by Kraemer's (1975) test (likelihood ratio with 1  $df = 13.97$ ,  $p < .001$ ).

In any event, the data in Table 3 clearly indicate that the dyad members' responses cannot be treated as independent observations. Because of the interdependence of the dyad members' responses, statistical assumptions would be violated if the data were analyzed using individual, rather than dyadic, scores as the units of analysis (Kenny, 1988; Kenny & La Voie, 1985). For this reason, the subsequent analyses reported in this article were based on dyad-level variables created by averaging the responses of both dyad members for each of the variables analyzed.<sup>6</sup>

### Differences Between Friend and Stranger Dyads

**Empathic accuracy data.** Our first hypothesis, that male friends would display significantly greater empathic accuracy than male strangers, was supported for both the original and the revised measures of content accuracy. The mean content accuracy score was 36.0 for the friends and 24.1 for the strangers, and the test of this difference was significant,  $t(46) = 3.20$ ,  $p < .003$ . The mean revised content accuracy score was 29.8 for the friends and 19.9 for the strangers, and the test of this difference was also significant,  $t(46) = 2.49$ ,  $p < .02$ . On average, the male friends had content accuracy scores that were about 50% higher than those of the male strangers.

In contrast, the mean baseline accuracy score was not significantly greater for the male friends ( $M = 6.2$ ) than for the male

<sup>6</sup> Note that some behaviors, such as interpersonal distance and mutual gaze, are inherently dyad-level behaviors that do not require such an averaging of individual responses.

strangers ( $M = 4.20$ ),  $t(46) = 1.24$ , *ns*. This null finding suggests that the friends' greater content accuracy derived from knowledge structures activated by the specific content of their interaction, rather than from lucky guesses or from more general stereotypes about their interaction partners.

**Behavioral data.** The interpretation of this difference in empathic accuracy was complicated, however, by the fact that the male friends also displayed significantly more interactional involvement than the male strangers. As the data in Table 4 indicate, the male friends not only sat closer together on the couch but also talked to, looked at, smiled at, and gestured toward each other significantly more than did the male strangers. These findings implicate what is perhaps the most interesting theoretical issue to be addressed in this study, namely, whether the greater behavioral involvement of the male friends was responsible for their greater accuracy in inferring the content of each other's thoughts and feelings.

#### *Friendship and Empathic Accuracy: Controlling for Covariates*

Did the greater empathic accuracy of the male friends depend on the greater amount of behavioral involvement and information exchanged in their interactions? Or, did the greater empathic accuracy of the friends depend not on the greater amount of information available during the immediate interaction but on the store of shared knowledge acquired during the entire course of the friends' relationship?

To test between these alternative hypotheses, the dyad-level behavioral measures in Table 3 were subjected to a principal-components factor analysis, and the resulting global measure of interactional involvement was then partialled out of the correlation between relationship status (friends vs. strangers) and empathic accuracy. The global measure of interactional involvement (INTINV) was the only factor to emerge in an analysis that yielded respective factor loadings of .78, .79, .89, .82, and -.63 for the measures of verbalizations, directed gazes, positive affect, expressive gestures, and interpersonal distance.<sup>7</sup> These standardized variables were algebraically summed to create the dyad-level measure of INTINV.

The zero-order correlation of relationship status and empathic accuracy (i.e., content accuracy) was .43,  $p < .003$ . To determine whether this correlation was still significant after controlling for differences in interactional involvement, baseline accuracy, and personality similarity on the dimension of sociability, these last three variables were entered first into a multiple regression model as covariates. (Similarity-dissimilarity in sociability was measured as the absolute difference between the dyad members' sociability scores.) The results of this regression analysis revealed that the partial correlation of relationship status and content accuracy was still significant,  $r(47) = .36$ ,  $p < .02$ , even when the effects of the three covariates were statistically controlled.

Further clarification was obtained when we compared the correlation between empathic accuracy and INTINV within each dyad type. For the male strangers, the revised content accuracy measure was significantly correlated with INTINV,  $r(47) = .50$ ,  $p < .02$ , whereas for male friends the same correlation was not significant,  $r(47) = -.09$ , *ns*. Moreover, the differ-

Table 4

#### *Differences in Interactional Involvement in the Two Dyad Types*

Behavioral measure	Friends	Strangers	$t^a$
Verbalizations (frequency)	49.8	39.1	2.28*
Verbalizations (duration)	122.4	95.8	2.32*
Directed gazes (frequency)	31.3	23.5	2.06*
Directed gazes (duration)	115.4	73.0	2.77**
Mutual gazes (frequency)	25.5	18.7	1.37
Mutual gazes (duration)	54.3	27.7	2.51*
Positive affect (frequency)	15.4	9.5	3.39***
Positive affect (duration)	84.7	40.3	3.41***
Gestures (frequency)	13.1	6.2	2.90**
Gestures (duration)	27.5	10.3	3.33***
Interpersonal distance	5.2	6.9	-2.59*

*Note.* The measures of duration are in seconds. The measure of interpersonal distance is in centimeters, on the basis of measurements taken directly from the TV monitor of the distance between the dyad members' proximal shoulders.

<sup>a</sup> The  $df = 46$ .

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .005$ .

ence between these correlations was significant,  $z_{\text{diff}} = 2.07$ ,  $p < .05$ . When the range restriction in the strangers condition was statistically controlled using the procedure cited by Guilford and Fruchter (1973, p. 315), the difference between these correlations was even stronger,  $rs(47) = .68$  vs.  $-.09$ ;  $z_{\text{diff}} = 2.98$ ,  $p < .005$ .

In summary, although the male friends interacted more and were dispositionally more similar in their sociability than the male strangers, these latter differences were not sufficient to account for the friends' higher level of empathic accuracy. Moreover, although empathic accuracy was strongly correlated with the amount of interactional involvement in the stranger dyads, it was not significantly correlated with the amount of interactional involvement in the friend dyads. The most plausible interpretation we are able to draw from these findings is that male friends "understand" each other in a way that transcends the information available in a single specific interaction.

#### *Friendship and Empathic Accuracy: Mediating Effect of Knowledge Structures*

The plausibility of this interpretation would be strengthened by any direct evidence that the hypothesized difference in the knowledge structures of the male friends and the male strangers mediated the difference in their levels of empathic accuracy. To test this hypothesized mediation, we had two inde-

<sup>7</sup> To retain the information contributed by both the frequency and duration measures of these dyad-level behaviors, the average of the standardized frequency and duration measure was entered into the factor analysis for verbalizations, directed gazes, positive affect, and expressive gestures, along with the standardized measure of interpersonal distance. To avoid assigning disproportionate weight to gazing as a measure of interactional involvement, the averaged, standardized measure of directed gazes was entered into the factor analysis, but the largely redundant measure of mutual gazes was excluded. The importance of this last precaution may be moot, however. Given the uniformly high factor loadings, the inclusion of the mutual gaze measure had virtually no effect on the results.

pendent raters recode all of the thought/feeling data to identify thoughts and feelings that concerned imagined events occurring outside the immediate context of the experimental session—that is, imagined events occurring in another place or another time. Thoughts and feelings about imagined events in *Another Place* or *Another Time* (AP-AT) were assigned a value of 1; all other thoughts and feelings were assigned a value of 0. The reliability of the resulting AP-AT measure was acceptable (.71), though somewhat lower than that of the other thought/feeling measures.

We reasoned that, because strangers are, by definition, not familiar with the details of each others' lives, the limitations of their knowledge structures would be particularly evident when they were asked to make inferences about their partners' thoughts and feelings about imagined events occurring in another place or time (AP-AT).<sup>8</sup> Specifically, the greater the percentage of AP-AT entries reported by their partners, the worse should be the strangers' empathic accuracy scores; thus, a significant negative correlation was expected. In contrast, because friends are assumed to have extensive knowledge regarding the details of each others' lives, the percentage of AP-AT entries reported by their partners was expected to be positively correlated with the friends' empathic accuracy scores. The assumption here was that interaction-based cues that evoked AP-AT thoughts and feelings in one friend would tend to evoke similar thoughts and feelings in the other.

Consistent with this reasoning, AP-AT (computed as a percentage measure) was negatively correlated with both original and revised content accuracy for the male strangers,  $r_s(22) = -.54$  and  $-.57$ ,  $ps < .01$ , but was positively correlated with original and revised content accuracy for the male friends,  $r_s(22) = .35$  and  $.33$ ,  $ps < .12$ . Moreover, the differences between these correlations for the friends versus the strangers were clearly significant for both the original and the revised measures of content accuracy ( $z_{s_{diff}} = 3.14$  and  $3.20$ ,  $ps < .005$ ).

Our next step was to test the mediational role of this differential correlation. This was accomplished by computing the partial correlation of relationship status (friends vs. strangers) with revised content accuracy, after first controlling for (i.e., partialing out) the interaction between relationship status and the AP-AT measure (Relationship Status  $\times$  AP-AT). Conceptually, partialing out the Relationship Status  $\times$  AP-AT interaction is equivalent to posing the question: What is left of the relationship between relationship status and empathic accuracy after we control for the differential impact on the empathic accuracy of friends versus strangers of the percentage of AP-AT thoughts and feelings reported by their partners?

The answer is, not much. When we controlled for the fact that an increasing percentage of AP-AT entries impaired the empathic accuracy of strangers but enhanced the empathic accuracy of friends, we were left with only a trivial (.13) partial correlation between relationship status and revised content accuracy. This finding suggests that the greater empathic accuracy of male friends versus male strangers can be statistically explained to a large degree by the way relationship status interacts with the percentage of AP-AT entries to determine empathic accuracy. And, indeed, when relationship status, percentage of AP-AT entries, and the Relationship Status  $\times$  AP-AT interaction term were all used to predict revised content accu-

rary in a stepwise multiple regression model, the Relationship Status  $\times$  AP-AT interaction term emerged as the only significant predictor, with a partial correlation of .39,  $p < .01$ .

These data offer direct evidence that differences in the knowledge structures of the male friends and the male strangers mediated the observed differences in their levels of empathic accuracy. More specifically, they indicate that the greater empathic accuracy of the friends was in large measure accounted for by the friends' ability to accurately read their partners' thoughts and feelings about imagined events in another place or time and by the strangers' lack of ability to do the same.

### *Other Correlates of Empathic Accuracy*

With only a single exception, the dispositional measures obtained in this study (listed in Table 1) were not significantly correlated with the subjects' empathic accuracy. The sole exception was a significant negative correlation for the male strangers between their scores on Davis's (1983) Fantasy Identification subscale and their scores on our measure of revised content accuracy,  $r(47) = -.39$ ,  $p < .01$ .

This correlation is fairly strong and fits well conceptually with the two other significant correlates of revised content accuracy that were also found only in the stranger dyads. Revised content accuracy correlated positively,  $r(47) = .41$ ,  $p < .01$ , with the percentage of thoughts and feelings the strangers reported that concerned their interaction partners but correlated negatively,  $r(47) = -.34$ ,  $p < .05$ , with the percentage of their thoughts and feelings that concerned the environment. Its negative correlation with fantasy identification seems to be consistent with these findings in suggesting that anything (e.g., daydreams or features of the environment) that distracted the strangers' attention from their interaction partners may have had a negative effect on their level of empathic accuracy. All of these correlations were computed at the individual level of analysis because the dyad members' responses were independent for each of the variables involved.

### *Summary and Implications*

Our first hypothesis, that the male friends would display significantly greater empathic accuracy than the male strangers, was supported for both the original and the revised measures of content accuracy. On average, the male friends had content accuracy scores that were about 50% higher than those of the male strangers. In addition, the friends' empathic accuracy scores were clearly interdependent, suggesting a mutual or shared understanding, whereas the strangers' scores were independent, suggesting that each person had a unique, nonshared understanding of the other.

Our second hypothesis was also supported, because the greater empathic accuracy of the male friends versus the male strangers was still evident even when behavioral differences in the levels of their interactional involvement were statistically controlled. Our second hypothesis was based on the assumption that male friends might display significantly more interac-

<sup>8</sup> We would like to thank Reviewer B of the previous version of this article, whose comments first suggested this line of reasoning.

tional involvement than male strangers. This assumption was confirmed for virtually every measure of interactional involvement. The male friends not only sat closer together on the couch but also talked to, looked at, smiled at, and gestured toward each other significantly more than did the male strangers.

If a typical interaction between male friends is behaviorally more intense and involving than one between male strangers, it should enable the friends to provide each other with a greater quantity of information about their respective thoughts and feelings. If the sheer quantity, rather than the quality (i.e., revealingness) of such information is the crucial variable, then partialing out the effect of interactional involvement should have greatly attenuated the correlation between relationship status (friends vs. strangers) and empathic accuracy. This, however, was clearly not the case. Even when differences in interactional involvement, baseline accuracy, and sociability matching were statistically controlled, the partial correlation of relationship status and empathic accuracy remained significant,  $r(46) = .36, p < .02$ .

Supporting data were provided by the correlations computed within each dyad type. These correlations clearly revealed that the greater empathic accuracy of the male friends did not depend on the greater amount of interactional involvement (and, hence, on the greater quantity of information available) during their immediate interaction,  $r(46) = -.09$ . Instead, it presumably depended on (a) the quality (i.e., revealingness) of this information and (b) the friends' enhanced ability to interpret such information in terms of the larger common store of knowledge that they brought with them to the interaction. By contrast, the empathic accuracy of the male strangers was strongly dependent on the level of interactional involvement in their immediate interaction,  $r_s(46) = .50$  or  $.68$ , depending on the estimate used. This latter result should not be surprising given that the strangers' immediate interaction provided them with their only source of information about each other.

Because strangers are, by definition, not familiar with the details of each others' lives, we predicted that their empathic accuracy scores would be negatively correlated with the percentage of their partners' thoughts and feelings about imagined events occurring in AP-AT entries. In contrast, because friends are assumed to have extensive knowledge regarding the details of each other's lives, we expected that their empathic accuracy scores would be positively correlated with the percentage of AP-AT entries reported by their partners. These predictions were confirmed in the form of a significant interaction between relationship status and the AP-AT measure—an interaction that in large measure accounted for the greater empathic accuracy displayed by the male friends in this study.

In addition to interacting more, the male friends were found to be dispositionally more similar in their sociability than the male strangers. However, the greater similarity of the male friends on this personality dimension also failed to account for the friends' greater degree of empathic accuracy. Indeed, of the several personality measures tested—including some specifically designed to assess empathic dispositions—only Davis's (1983) measure of fantasy identification was significantly related to empathic accuracy, and then only for the male strangers. The substantial negative correlation found in this

case was consistent with some conceptually similar findings in suggesting that anything that distracted the strangers' attention from their interaction partners may have had a negative effect on their level of empathic accuracy.

Taken in sum, the present findings are consistent in at least two respects with those reported by Ickes, Stinson, et al. (1990). First, they indicate that, for the same-sex strangers in the present study just as for the mixed-sex strangers in the Ickes et al. study, the best predictors of empathic accuracy are those defining the level of involvement and information exchanged during the immediate interaction. Second, they indicate that, just as in the previous study, dispositional measures are generally not reliable predictors of empathic accuracy. Only one of the several personality measures we obtained was a significant predictor of empathic accuracy in the present study, and none of the measures common to both studies were significant predictors in both.

A finding unique to the present study is that empathic accuracy was strongly related to the relationship status (friends vs. strangers) of the dyad members, even when differences in conceptually relevant covariates were statistically controlled. Also, unique to this study is the finding that the relationship status—empathic accuracy correlation was mediated by the friends' ability to accurately read their partners' thoughts and feelings about imagined events in another place or time and by the strangers' lack of ability to do the same. These findings clearly indicate that the empathic understanding that develops between male friends is an emergent product of their shared interaction history and common store of knowledge. The data are therefore consistent with the commonly held perception that friendships are special relationships—ones characterized by a cross-temporal understanding that is largely independent of whatever immediate information is exchanged. This cross-temporal understanding, or sharing of meaning, has been identified by Duck (1991) as the most important, but most neglected, concept in the study of relationships.

Future research should seek to clarify whether there is a bidirectional association between empathic accuracy and the developmental course of relationships. For example, do relationships simply supply the context in which social information is located, ordered, and understood, thereby serving as the source of empathic accuracy? Or, does the ability to accurately read another person's thoughts and feelings determine whether a relationship with that person is possible at all? Most intriguing, perhaps, is the question of whether empathic accuracy is or is not related to relationship satisfaction. For example, are there some couples, such as George and Martha in Edward Albee's play *Who's Afraid of Virginia Woolf?*, whose accurate insights into each other's thoughts and feelings are used in the service of mutual torment rather than mutual cooperation and accord?

In addition to underscoring the importance of relationship status in the study of empathic accuracy, the present findings may have some broader implications for theory and research in other areas of social cognition. Stated simply, we found that empathic accuracy in the situation we studied was better predicted by individuals' relationships than by their personal dispositions. This observation might prove to be true of other social-cognitive phenomena as well. Thoughts and feelings, social judgments and inferences, may differ greatly in their con-

tent and accuracy depending on the nature of the relationship (e.g., distressed vs. nondistressed and intimate vs. nonintimate) in which they are studied.

If this is indeed the case, the social cognition research of the future should broaden its focus by looking at individuals' relationships as well as their personalities. Although dispositional measures may be useful in predicting patterns of interaction within such relationships, they may be less useful in predicting such inherently social-cognitive phenomena as empathic accuracy—phenomena that appear to be intrinsically defined by the nature of the relationships in which they emerge. The conclusion here, as in so many other areas of psychological research, is that context—in this case, the historical and social context provided by one person's relationship with another—is important and should not be ignored.

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