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The Relationship of Verbal-Nonverbal Incongruence to Communication Mismatches in Married Couples

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Communication accuracy refers to whether a message sent by a sender is perceived by the receiver to have the same emotional meaning intended by the sender. Previous research using marital dyads suggests that receivers sometimes receive the emotional meaning in senders' statements differently than senders intend. The present study was conducted to test the possibility that one reason such misunderstandings occur is that senders may convey emotional messages differently than they intend. Twenty-four married couples carried on a ten-minute videotaped free interaction during which they rated the emotional meaning in each others' statements. Results indicated that senders conveyed messages that were both more negative and more positive than they intended. As predicted, emotional mismatches, in which sender and receiver disagreed on how the sender was coming across, were associated with sender verbal-nonverbal incongruence. However, it was also found that matches, in which sender and receiver agreed on how the sender was coming across, were associated with incongruence. Contrary to prediction, when senders were incongruent, their verbal and not their nonverbal behavior correlated significantly with the impact on the receiver. The finding that receivers' impact ratings correlated more with senders' verbal than nonverbal behavior contradicts results from previous laboratory-based studies on the resolution of discrepant verbal and nonverbal signals. It suggests that nonverbal behavior may be best studied and interpreted in terms of its verbal context.

It is generally agreed among theorists and clinicians who study dyadic communication that, except in some special circumstances dictated by custom, one of the requirements for healthy communication is that the message intended by the sender is the same as the message received by the listener (Duke & Nowicki, 1982; Kiesler, 1996). In particular, it is especially important that the emotional meaning consciously intended by the sender is the same as the emotional meaning received by the listening party. Noller (1984, 1992) has termed this skill "communication

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accuracy.” For example, in a discussion with his wife about her mother, a husband might utter the sentence, “I like your mother” and may intend to convey a sense of liking. If his wife hears him as positive, an accurate communication has occurred. However, if his wife hears him as defensive or argumentative, a mismatch has occurred in which the husband’s intended communication is different from its impact on his wife. The ensuing statements would likely be very different from and more negative than those that would follow if the wife received the husband’s statement in the way he intended.

Accuracy of communication has long been recognized by interpersonal and communications theorists as an important element of interpersonal interactions. For example, in discussing the complexities of human interaction, Satir (1964, 1976) suggested that repeated emotional misunderstandings form the basis of unhealthy interactions and occur because senders and receivers often misinterpret each other. According to Satir, such misunderstandings occur when senders and receivers “fail to check out meaning intended with meaning received” (1964, p.100).

While in theory accuracy in communication is certainly a healthy goal, research using marital dyads suggests that is not a goal that is always easily attained in naturally occurring dyadic interactions (e.g., Gottman, Notarius, Markman, Yoppi & Rubin, 1976; Noller, Feeney, Bonnell & Callan, 1994; Noller & Guthrie, 1989; Schacter & O’Leary, 1985; Sillars, Folwell, Hill & Maki, 1994; Vangelisti, 1994). In studying communication accuracy in couples, for example, Gottman and his colleagues have used a device called a “Talk Table,” which makes use of couples’ own perceptions of their conversations (Gottman, et al., 1976). The Talk Table operates by recording both the speaker’s intent and the resulting emotional impact on the listener. Spouses’ intent and impact ratings are recorded by spouses themselves on a five point scale ranging from “superpositive” to “supernegative.” Using the Talk Table to record communication mismatches, Gottman found that the communication of both distressed and non-distressed couples contained mismatches, and that distressed couples in particular tended to perceive each other’s messages as more negative than intended (Gottman, et al. 1976).

Using a similar methodology, Schachter and O’Leary (1985) found that the communication of both distressed and non-distressed couples contained mismatches in which the sender’s impact was perceived as less positive than intended. Taken together, Gottman et al.’s and Schachter and O’Leary’s findings suggest that emotional misunderstandings frequently occur in the communication of married couples, with both groups tending to perceive the sender’s message as less positive than intended. However, an important question, which has not been adequately

addressed in the marital literature, is whether it is the sender or the receiver (or both) who is contributing to the error. The assumption made by many researchers is that receiving spouses may erroneously interpret their partners' messages as more negative than the messages are intended (Filsinger & Wilson, 1983; Schaap & Jansen-Nawas, 1987). However, as Noller (1984) has noted, it is also possible that spouses may *send* their messages more negatively than they realize.

Noller (1980) found evidence for this when she conducted a study using a variation of the Marital Communication Scale (Kahn, 1970). The MCS consists of several sentences which can convey positive, negative, or neutral meanings, depending on the nonverbal signals that accompany the words. Sending spouses in the study were instructed to send messages to each other in one of three ways, and receiving spouses were instructed to guess from a list of three alternatives which ideas senders were trying to convey. Senders' messages were videotaped and later shown to a group of judges who were also instructed to guess the meaning conveyed by sending spouses. Sending spouses were judged as having made an error if the receiving spouse plus more than one-third of the judges heard the message differently than the sender intended it. It was found that distressed senders, particularly husbands, made significantly more errors in communicating than non-distressed senders. Errors were most likely to occur when a sender attempted to send a positive message, but actually sent a message judged by the receiving spouse and judges to be neutral or negative.

While Noller's results point to the possibility that emotional misunderstandings may in part be due to sender error, the question still remains as to what kind of error senders are making. An answer may be found in the interpersonal formulations of Kiesler (1979, 1986, 1996). Kiesler has built upon Sullivan's interpersonal theory (1953), which posits a central role for interpersonal communication in personality development and maintenance. According to Kiesler, it is possible for senders to be unaware of the emotional messages they are communicating but which nevertheless have an emotional impact on receivers. This can happen because communication takes place in two channels: one verbal, the other nonverbal. While the verbal channel consists of words, the nonverbal channel consists of behaviors that accompany the words. Nonverbal communication consists of several behaviors, including facial expression, paralanguage (voice tone, pitch, loudness), kinesics (posture and gesture), and proxemics (utilization of space and distance) (Burgoon, Buller & Woodall, 1996; De Paulo, 1992; Hickson & Stacks, 1985; Knapp & Hall, 1997; Riggio, 1992).

According to interpersonal theory, senders sometimes have needs whose direct expression might elicit unpleasant feedback (Beier & Young, 1984). Senders in such situations often attempt to convey their needs while simultaneously disavowing responsibility for them (Beier & Young, 1984). They may do this by consciously conveying one message in the verbal channel while simultaneously and unconsciously transmitting another in the nonverbal channel. When this happens, it is the nonverbal message that is the more powerful of the two and that leaves an emotional impact on the receiver (Capella & Palmer, 1989; Van Denburg, Schmidt & Kiesler 1992). The result is that the receiver perceives a different emotional meaning than the one consciously intended (and verbally sent) by the sender and an emotional misunderstanding occurs between the members of the dyad.

The present study was designed to investigate whether interpersonal assumptions regarding the determinants of sender incongruence could be used to explain emotional misunderstandings that occur in dyadic communication. Communication accuracy was measured using a variation of the Talk Table methodology developed by Gottman and his colleagues. The Talk Table allows for a quantitative assessment of communication accuracy by comparing the sender's intent with the resulting impact on the receiver. Non-clinic married couples were used, since such a sample contains naturally occurring dyads in which it has been shown that communicative misunderstandings occasionally occur (Gottman, et al., 1976; Schachter & O'Leary, 1985).

The present study tested two predictions. The first was that mismatches, in which the message sent by the sender was different than the message perceived by the receiver, would be characterized by sender verbal-nonverbal incongruence. Conversely, it was predicted that when sender and receiver agreed on the emotional tone of the sender's message (an instance referred to as a communication "match") the sender's behavior would not contain verbal-nonverbal incongruence. The second prediction held that, when senders were incongruent between verbal and nonverbal signals, receiver impact ratings would correlate with senders' nonverbal behavior (specifically, facial expression and voice tone) and not their verbal language.

METHOD

Participants

Participants were 24 Caucasian married couples from Westchester County (New York), New York City, and New Jersey. Couples were selected from lists given the experimenter by ministers and rabbis in each area. Approximately 94% of couples contacted agreed to participate.

Length of marriage ranged from 2 - 52 years ($M = 14$ years, $SD = 13$ years). Nineteen out of the 24 couples were in their first marriage. In the remaining five, either one or both of the spouses had been previously married.

Raters

Three raters were used to code videotapes, audiotapes and transcripts. All were in their late 20's and two were enrolled in graduate psychology programs. The third had a B.A. in psychology. Two female raters coded the entire sample, and the third, a male, was used for purposes of a reliability check. All three were trained.

Measures

Variation of Gottman et al.'s (1976) Talk Table. Communication accuracy was measured using a variation of Gottman et al.'s Talk Table. As used in the present study, the talk table is a pencil and paper self report measure designed to allow couples to record emotional meaning intended (intent) and emotional meaning received (impact). The talk table in the present study contained three words to describe emotional meaning: "positive," "neutral," and "negative." The function of the talk table is to record potential differences between spouses' intents and impacts.

The Talk Table was used in the following manner. Spouses were instructed to carry on a conversation with each other. After each minute of interacting, spouses circled the response that best fit 1) their intended impact during the past minute and 2) the impact of their spouse's communication during the past minute. Items directed toward senders were preceded by this stem:

"During the past minute I intended to come across as...." Items directed toward receivers were preceded by the stem, "During the past minute, my spouse came across as...." Each stem was followed by the choices "positive," "neutral," or "negative."

Procedure

All couples were contacted by phone during which time the experimenter explained the purpose of the study and outlined the details of participation. If both husband and wife agreed to participate, a date was set for an interview. All couples were interviewed and videotaped in their homes. During the interview, the experimenter explained that she was interested in the way in which married couples talk about issues on which they disagree. Couples were asked to come up with an issue on which they disagreed and which they would be willing to discuss in front

of a video camera. Once both spouses and the experimenter agreed on a topic for discussion, the experimenter explained the talk table procedure. The meaning of each talk table term was explained. Spouses were to endorse “positive” if the emotional tone of the conversation was upbeat and satisfying, “negative” if the conversation was argumentative or upsetting, and “neutral” if there wasn’t a particular emotion being displayed either way. Spouses were not given any instructions to focus on a particular nonverbal channel; rather, they were instructed to focus on each other’s overall behavior.

All couples were videotaped sitting on a sofa. Each spouse was given a form on which to record intent while speaking and impact while listening. Couples were then instructed to discuss a problem or issue about which they disagreed and which had been previously agreed upon. After each 60 seconds of interaction, a previously made tape-recorded interaction instructed each spouse to record 1) his/her intent for the previous 60 seconds and 2) the impact of his/her spouse’s communication during the previous 60 seconds. A total of 20 ratings were made by each spouse, 10 for him/herself and 10 for his/her spouse. Spouses’ intents and impacts were recorded by couples on rating sheets that contained the talk table rating scale.

After all talk table data were collected for all 24 couples, the recording sheets were scanned for mismatches. Mismatches consisted of all 60-second interaction sequences in which the speaker’s intent differed from his/her impact on the listener. For each mismatch, three pieces of data were assembled in order to separate the nonverbal from the verbal element of the sender’s behavior. The three pieces of data were 1) the verbal dialogue (written transcript), 2) a videotape of the speaker’s facial expression and 3) an audio recording of the interaction. The purpose of separating verbal from nonverbal elements of senders’ behavior was to determine whether mismatches were associated with particular kinds of sender verbal-nonverbal incongruence. There were two kinds of sender incongruence possible. The first was verbal-facial incongruence, in which the sender’s facial expression conflicted with his/her verbal language (for example, the sender’s face showed negativity while his/her words were positive). The second kind of sender incongruence was verbal-vocal, in which the sender’s tone of voice conflicted with his/her verbal language (for example, the sender’s tone of voice was neutral while his/her words conveyed negativity).

Using the same talk table data scales on which spouses had recorded intents and impacts, raters then coded speaker’s verbal, facial, and vocal behavior during each 60-second mismatch. Verbal behavior was rated using a written transcript and facial expression was rated using the video

of the speaker's face. In order to rate speaker's vocal behavior, raters listened to an audio recording of each 60-second mismatch and were instructed to ignore the content of what was being said. Raters were given specific instructions for rating the kind of emotion (positive, negative, or neutral) present in each channel. Training criteria for the nonverbal channels of facial expression and vocalics were adapted from a nonverbal rating scheme developed by Mehrabian (1981). Verbal training criteria were based on the verbal "social skills" section of Gottman, Notarius, Gonso & Markman's *A Couple's Guide to Communication* (1976).

Rater Training

Three raters were used, two of whom rated the entire sample. The third rated 25% of the sample as a reliability check. Rater training involved initially reading and discussing criteria for positive, neutral, and negative behaviors. All three raters then made practice codings on pilot tapes and transcripts that were not used in the actual study. Raters were instructed to focus on the behavior or words of the spouse in question and, based on training criteria, to select the emotion (positive, negative, or neutral) most prevalent during that 60 second sequence. The three raters made their judgments separately, but compared and discussed instances in which they disagreed. In each case of disagreement, reasons for disagreement were discussed and a new coding criterion was established. After training, correlations of rater agreement for each channel of behavior were computed. Pearson correlations computed between practice codings made by the two main raters were as follows: verbal channel (words) $r = .83$; visual channel $r = .93$; vocal channel $r = .82$. This was taken as an indication of sufficient inter-rater reliability and coding of the actual sample was begun. In each instance in which the two main raters disagreed on a score to be given a particular behavior, the third rater was used to code the behavior in question, and the final rating was based on a 2/3 majority. Instances in which the two main raters disagreed and the third rater was used to resolve the deadlock occurred approximately 10% of the time.

RESULTS

Mismatches were separated into two groups: 1) positive mismatches, in which senders rated their overall behavior as negative or neutral while receivers perceived them as positive and 2) negative mismatches, in which senders rated their overall behavior as neutral or positive while receivers perceived them as negative. Analyses were conducted separately for positive and negative mismatches.

The first prediction was that the communication mismatches that occur in the conversation of married couples would be associated with sender verbal-nonverbal incongruence. Pearson correlations were conducted between the number of positive or negative mismatches per couple that were associated with sender verbal-facial or verbal-vocal incongruence. As predicted, positive mismatches were significantly correlated with both verbal-facial ($r = .52, p < .01$) and verbal-vocal ($r = .38, p < .025$) incongruence. Likewise, as predicted, negative mismatches were also significantly associated with sender verbal-facial ($r = .84, p < .0005$) and verbal-vocal ($r = .74, p < .005$) incongruence. A Fisher's Z test for the difference between correlation coefficients indicated that there were no significant differences between the correlations between negative and positive mismatches with verbal-facial incongruence ($Z = 1.71$) or between the correlations between negative and positive mismatches with verbal-vocal incongruence ($Z = 1.46$). In percentage terms, the total number of both positive and negative mismatches associated with incongruence was 60%.

Data from positive and negative *matches* (in which sender and receiver agreed on how the sender was coming across) were also analyzed for incongruence in order to ascertain whether sender incongruence was in fact specific to mismatches. Findings indicated that, contrary to prediction, matches were also significantly associated with both verbal-facial and verbal-vocal incongruence. Positive matches were significantly associated with sender verbal-facial ($r = .74, p < .005$) and verbal-vocal ($r = .71, p < .0005$) incongruence. Likewise, negative matches were also significantly associated with verbal-facial ($r = .73, p < .005$) and verbal-vocal ($r = .85, p < .005$) incongruence. In terms of percentage, 62% of the total number of matches were associated with either verbal-facial or verbal-vocal incongruence.

The second prediction was that in communication mismatches in which there was sender incongruence, the sender's nonverbal behavior would correlate significantly with the emotional impact on the receiver while the sender's words would not. For positive and negative mismatches, correlations were computed between the number of times per couple that the receiver perceived the sender as positive or negative and the number of times the sender's face, voice, or words agreed with the receiver's score.

In all cases, it was found that, contrary to prediction, senders' words correlated significantly with receiver impact, while senders' facial expressions and voice tone did not. For positive mismatches with verbal-vocal incongruence, voice tone was not significantly associated with receiver impact ($r = -.14$), while words correlated significantly ($r = .58$,

$p < .05$) with receiver impact. Similarly, for positive mismatches with verbal-vocal incongruence, senders' words were significantly associated with receiver impact ($r = .69, p < .01$) while voice tone was not ($r = .21$). For negative mismatches with verbal-facial incongruence, senders' words were significantly correlated with receiver impact ($r = .75, p < .01$), while facial expression was not ($r = .35$). However, a Fisher's Z test for the difference between correlation coefficients indicated that the verbal (words) and facial correlations were not significantly different from each other ($Z = 1.26, p > .05$). For negative mismatches with verbal-vocal incongruence, senders' words were significantly associated with receiver impact ($r = .53, p < .05$) while sender voice tone was not ($r = .38$).

Data from positive and negative matches also were analyzed to determine whether any one specific channel correlated significantly with receiver impact when the sender was incongruent. Again, in cases of both positive and negative matches with sender incongruence, senders' words were significantly associated with receiver impact while senders' nonverbal behavior was not. For positive matches with verbal-facial incongruence, senders verbal behavior correlated significantly with receiver impact ($r = .89, p < .0005$), while senders' facial expression did not ($r = .04$). For positive matches with verbal-vocal incongruence, senders' verbal behavior correlated significantly with receiver impact ($r = .96, p < .0005$) while sender vocals did not ($r = .28$). For negative matches with verbal facial incongruence, sender verbal behavior correlated significantly with receiver impact ($r = .94, p < .0005$) while sender facial expression did not ($r = .00$). For negative matches with sender verbal-vocal incongruence, sender verbal behavior correlated significantly with receiver impact ($r = 1.00, p < .0005$), while sender vocals did not ($r = .02$).

DISCUSSION

The findings in this study bring into question two predictions based on interpersonal theory. First, while sender verbal-nonverbal incongruence was found to occur during misunderstandings, as predicted, it also was found to occur when spouses were communicating accurately, a finding not anticipated. Second, contrary to prediction, it was found that when senders communicated incongruently, receivers' impact ratings correlated significantly with senders' verbal language rather than senders' nonverbal behavior.

The finding that senders were incongruent regardless of whether there was a match or a mismatch suggests that sender verbal-nonverbal incongruence may be a much more naturally occurring phenomenon in communication than interpersonal theorists would expect, and that

couples can be incongruent but still communicate accurately. This parallels Noller and Gallois' (1988) finding that even spouses who are highly accurate communicators sometimes communicate incongruently, for example by sending a negative verbal message with a smile. In fact, it may not be sender incongruence per se that contributes to a mismatch, but whether the incongruent sender is aware of the channel carrying the message to which the receiver responds. For example, a husband, in uttering a negative sentence with neutral face and voice tone may nevertheless realize that it is his words that carry the emotional weight of his utterance. If his wife then responds to the negative meaning contained in his words (but not in his face and voice), he is not likely to be surprised by his response to her, and an accurate, although negative, communication will have taken place between them. Support for this possibility has been found in a study on communication awareness among married couples, in which high marital adjustment husbands were more aware than low marital adjustment husbands of how accurately they encoded messages (Noller & Venardos, 1986).

It thus follows that those senders who are more aware of what channel receivers are paying attention to are those who have more accurate communication with their spouses. This would explain how it was possible for couples in this study to communicate incongruently but still communicate accurately. One way to address this in future research would be to ask senders which channel they thought the receiver would respond to in making the impact rating.

The finding that receivers' ratings correlated more with senders' verbal language than nonverbal cues also contradicts an assumption from interpersonal theory that the nonverbal channel is the one that carries the emotional message when verbal and nonverbal signals conflict. Findings indicated that, in all cases of sender verbal-nonverbal incongruence except that of negative mismatches, senders' words correlated significantly with receiver impact while senders' facial expression and voice tone did not. Where negative mismatches were concerned, while senders' verbal behavior was significantly associated with receiver impact and their nonverbal was not, there were no significant differences between the verbal and nonverbal correlations themselves. This suggests that senders' nonverbal behavior may also have contributed to the impact on the receiver when a negative mismatch occurred. Negativity also may have been carried through senders' faces and voices as well as through their words.

The above findings would seem to bring into question assumptions made by interpersonal theorists regarding the relative importance of nonverbal and verbal sources of emotion. However, it is important,

before reaching this conclusion, to first examine the validity of the methodological practices used in this study that also might have contributed to the results. Specifically, there are several possible methodological reasons why senders' nonverbal behavior was not significantly associated with stated impact on receivers. One of the most obvious is that couples may have reacted to the presence of the video camera by toning down and constricting the nonverbal signals accompanying their words. Emotion ordinarily sent by nonverbal means could have been displaced into the verbal channel in reaction to a situation in which couples knew they were being taped. For example, a husband who felt self-conscious in front of the camera might have elected to show disagreement with his wife primarily with words, rather than with his face. In this manner, he would look "well-behaved" for the camera, but still manage to get his point across to his wife. This would be consistent with previous research which has shown that, compared with other nonverbal channels, the face is most adept at concealing emotion under certain circumstances (Buller & Burgoon, 1994; Ekman & Friesen, 1969; Zuckerman & Driver, 1985). In addition, as De Paulo (1992) notes, senders' nonverbal behavior is generally not totally out of their awareness. People can and do attempt to present themselves in certain ways by controlling aspects of their nonverbal presentation. Thus, it is possible that couples in this study were particularly motivated to control and perhaps downplay the intensity of their nonverbal signals.

A second methodological reason why senders' nonverbal behavior may not have correlated with receiver impact may involve the amount of interaction time given couples during the Talk Table procedure. Couples were required to interact for a full minute before the tape recorded message played asking them to rate themselves. Different amounts of interaction time were tested during pilot work and, based on feedback from pilot couples, it was determined that 60 second interaction sequences were the most ecologically valid. (Couples reported that they were unable to carry on meaningful conversations when they were interrupted more than once per minute by the tape recorder).

Since couples based their ratings of each other on one-minute sequences, raters also based their ratings of couples on the same one-minute sequences. Raters were thus required to summarize over 60 seconds worth of nonverbal behavior in order to make their rating decisions. Summarizing over relatively long time intervals may have led raters to overlook some of the subtleties in senders' nonverbal behavior that receivers took into account when rating senders. In particular, it is possible that raters overlooked some of the more subtle, "shorthand" nonverbal cues characteristic of long-term, established relationships (eg.,

a wink or a slight raise of the eyebrows) that replace the more exaggerated and complex nonverbal displays that predominate in a new relationship (Riggio, 1992). One way to eliminate this problem in future studies would be to continue to have couples rate themselves every minute. Additionally, however, they should ask receivers what aspect of senders' behavior they were responding to most when making the rating (face, voice, or words) and when during the interaction that behavior occurred. The videotape could then be used to determine whether raters agreed with receivers on their assessments or whether receivers were responding to something idiosyncratic in senders' behavior.

Certain methodological aspects of this study, such as the use of the video camera and the length of the interaction time, may have limited the generalizability of the results. However, it is also true that the methodology has a major strength that previous studies on verbal-nonverbal incongruence do not and that may have produced more ecologically valid findings. Specifically, while previous studies on the resolution of incongruent verbal and nonverbal signals have used staged interactions or posed behaviors (e.g., Argyle, Alkema & Gilmour, 1970; Fleming & Darley, 1991; Kahn, 1970; Mehrabian & Wiener, 1967; Noller, 1980; Reilly & Muzekari, 1979; Walker & Trimboli, 1989), this study used spontaneous, nonstaged interactions which more closely approximate naturally occurring dyadic interactions. Therefore, while senders' nonverbal behavior may have been less exaggerated than in previous studies which have directly coached production of nonverbal cues, it also was more true to life. As De Paulo (1992) notes, nonverbal cues which are spontaneously produced, as in the present study, are often less easily interpreted than when deliberately posed. This is consistent with previous research comparing nonverbal expression in naturally occurring and contrived interactions. Such research has found that nonverbal expressions of emotion in natural conversational contexts are more ambiguous and not easily separated from verbal language (Fujita, Harper & Wiens, 1980; Knapp & Hall, 1997; Motley, 1993; Tucker & Riggio, 1988). Similarly, in the case of unrehearsed marital interactions, Noller (1992) has found that couples' nonverbal behavior is less exaggerated and stereotyped when couples engage in free interactions than in interactions with standardized content. What this means is that nonverbal cues in naturally occurring dyadic interactions may not carry as much emotional weight as previously assumed and that verbal language is equally important in conveying emotion. The exception to this might be when one spouse deliberately sends an incongruent message, for example in the case of sarcasm. In this case, because the nonverbal message is

deliberately and consciously encoded, it is likely more obvious to the receiving spouse and may thus have more of an emotional impact.

The finding that receivers' ratings correlated more with senders' words than with their nonverbal behavior may have important implications for interpersonal theory, which suggests that emotional messages are conveyed primarily through nonverbal means. Interpersonal theorists have assumed that when verbal and nonverbal signals conflict, nonverbal signals carry the brunt of the emotional message. While this may be the case in laboratory-based studies in which nonverbal signals have been intentionally exaggerated, or in cases in which people are deliberately trying to deceive (e.g., Babad, Bernieri & Rosenthal, 1989; Zuckerman, De Paulo & Rosenthal, 1986), it may not be the case in naturally occurring interactions such as those in the present study. In such interactions, nonverbal signals may be ambiguous or fleeting and may act more as brief emotional "interjections" than entire emotional messages themselves (Motley, 1993; Riggio, 1992). The implications for interpersonal theory and for subsequent research are that nonverbal signals are best studied in terms of their verbal context and that verbal language is important in conveying emotion.

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