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on Interpersonal Attraction in a Work Setting,

Face-to-Face Business Negotiations

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Abstract

The purpose of the study is to investigate the relationship between conversational behaviors and interpersonal attraction. Fifty-eight American business people participated in Kelley's (1966) negotiation simulation. The negotiations were tape recorded, and paralanguage, content, and linguistic structure variables were coded and analyzed using correlation, factor analysis, multiple regression, and a structural equations approach. The results of the study suggest that the buyers' attraction to the sellers is positively influenced (1) by sellers' jovial behaviors and (2) by variations in the sellers' speech rate, but it is negatively influenced (3) by a direct information-seeking style and (4) by the sellers' use of an inclusive "we." Together, these four variables explained 58 percent of the variation in the sellers' attractiveness as rated by buyers.

Explorations of the Effects of Conversational Behaviors

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Three fundamental kinds of social "glue" hold groups of people (organizations) together: (1) family ties (common genes), (2) social/economic interdependence and exchange (Homans, 1974), and (3) interpersonal attraction (Berscheid, 1997).[1] All three forces exert influence in a variety of formal and informal organizational settings and processes, e. g., interviews and hiring decisions, buyer-seller transactions and relationships, channels of distribution, mergers, acquisitions, joint ventures and other forms of strategic alliances, leadership and supervisor/subordinate relations. The focus of this study is on the last sort of "glue," interpersonal attraction.

Researchers have long attempted to understand the factors influencing attraction between people. The vast body of literature on interpersonal attraction falls generally into two broad categories. First, a considerable amount of research has examined the role of *physical attractiveness* in interpersonal attraction. The second category receiving substantial inquiry is the *similarity* of individuals, particularly in terms of their attitudes, as it determines interpersonal attraction.

Despite the impressive accomplishments of researchers in the area, substantial gaps still exist. The comments of Berscheid (1985, p. 415) in a most comprehensive review of the literature twenty-five years ago still hold true:

> A disinterested critic would undoubtedly find the most notable characteristic of the current portrait of interpersonal attraction to be unevenness. Entire portions of the canvas remain virtually blank, and it cannot be said that these undeveloped areas of inquiry are peripheral to the subject. ...

Our study is directed toward two areas unaddressed in the literature. First, few studies have considered the antecedents of interpersonal attraction in work settings other than personnel interview situations. The *context* of our study is *buyer-seller negotiations* .

However, the primary intent of our study is to begin to fill a second, much larger gap than those identified by Berscheid (1985). Indeed, how is it possible that so many people interested in interpersonal attraction have ignored the *behaviors* of the actors in the *process* of interpersonal

interactions? We certainly agree with her explanation that the literature gaps often result from theoretical and methodological biases in the field. Obviously, pictures as stimuli and paper and pencil attitudinal measures and descriptions can easily lead to manipulations of physical attractiveness or similarity in laboratory experiments with college sophomores.

A notable exception to our generalizations about the literature are the findings of Sunnafrank (1983), which indicate that interpersonal, face-to-face discussions are more important determinants of attraction than pre-measured attitudinal similarity. Furthermore, research on negotiation in organizations has considered the process of negotiation (Bazerman. Loewenstein, & White, 1992; Bazerman & Neale, 1983). For example, Bazerman and Neale (1983) have suggested that the perceptions of a negotiator can affect the process and, ultimately, the outcome of the negotiation. Similarly, in an empirical examination, negotiators were found to alter their decision making processes based on their perceptions of the outcome (Bazerman, Loewenstein, & White, 1992). While these researchers are concerned with perceptions about the negotiation, our focus in this study is on how the behavior of the negotiator, in particular the person in the seller role, affects the negotiation.

So, in this study, we focus on the behaviors of business people in a different work setting from most studies. The context of our study is a face-to-face, simulated business negotiation. This study contributes to the literature on negotiation in organizations by examining how the behaviors of negotiators influence the negotiation process. By understanding whether the seller in interpersonally attracted to the buyer, we gain further insight to the interactions involved in negotiations. Thus, we posit that a seller's behavior directly influences his/her attractiveness. Sellers' conversational behaviors are recorded and then compared systematically to the buyers' attractiveness ratings of those same sellers.

The observation and analysis of the behaviors in interactions is a more difficult undertaking. Martin and Turner (1986) advocate exploratory methods as particularly well-suited for dealing with data gathered by observing face-to-face interactions. In the marketing literature, the comments of Neslin and Greenhalgh (1983, p. 368), "The process models are often complex and thus difficult to operationalize," and of Soldow and Thomas (1984, p. 84), "Face-to-face communication has an elusive quality that makes it particularly resistant to constructing an adequate process model, " well justify our approach.

BACKGROUND

A brief review of the interpersonal attraction literature reveals the pertinence of examining the effect of communication behaviors on attraction.

Physical Attraction

The role of physical attractiveness in interpersonal attraction represents one of the most studied topics in the area. In general, the majority of research on physical attraction reveals that persons who are physically attractive are more attractive to others, receive preferential treatment, and benefit from positive attributions based on their good looks. Some research has indicated a ceiling effect for attractiveness. For example, exceptionally attractive people are less likely to be selected as "someone others want to meet" (Gallucci, 1984), and more often have negative or egocentric qualities attributed to them (Gallucci and Meyer, 1984).

Others have suggested that first impressions are crucial determinants of attractiveness and evaluation (e.g., Schmidt 1976; Farr 1973; Avery and Campion 1982; Morrant 1981). Obviously, appearance has an impact on first impressions, but Huston and Levinger (1978, p. 123) argue:

> First impressions gathered at a distance are influenced not only by the other's physical appearance, but also by the other's pattern of behavior. Nonetheless, researchers have devoted little attention to how the behavior of someone we watch affects our attraction toward them.

Similarity

The role of similarity in interpersonal attraction has advanced to the point where "... it is accepted that similarity is a general determinant of attraction" (Berscheid 1985, p. 455), particularly in the area of attitude similarity, as pioneered by Byrne and his associates (1997 and 1971 for reviews). More recently Montoya and Horton (2004, page 696) add, "One of the most robust phenomena in social psychology is the similarity-attraction effect." Most recently others have pointed out that perceived similarity, as opposed to actual similarity, is the key driver of the persistent similarity-attraction relationship (Klohen and Luo, 2003 and Montoya, Horton, and Kirchner 2008).

Researchers have also attempted to establish factors that affect the similarity-attraction association. One stream of research found that while attitude similarity increases attraction, the attraction is fleeting (Sunnafrank, 1984, 1983; Sunnafrank and Miller, 1981); its influence decreases once subjects have engaged in initial, get-acquainted conversations. This stream of

research argues that the positive association between attitude similarity and attraction "occurs only when normal acquaintance conversations are not allowed to take place" (Sunnafrank, 1984, p. 373). Clearly implied, but not commented on directly by Sunnafrank, is the influence of the conversation on attractiveness, i.e., the face-to-face interaction process → interpersonal attraction. Aside from the work of Sunnafrank and Miller, typically researchers studying similarity and physical attractiveness do not permit subjects to interact during the experiment. For example, in the aforementioned literature on physical attractiveness, researchers often showed subjects a photograph of an attractive or unattractive target person and obtained the subjects' responses to the photos.

Linguists have described how language use may affect an entire interaction (Fisher , 1978, and Tannen and Wallat, 1982, physician-patient; Walker, 1982, legal; Prince, Frader and Bosk, 1982, physician-physician; Neu, 1985, negotiation; and Grinshaw, 1990, conflict). However, they have not often considered interpersonal attraction as a dependent variable. The primary contribution this study makes to the literature on interpersonal attraction is the measurement of a wide range of verbal and nonverbal cues and their effects on interpersonal attraction.

CONSTRUCTS, VARIABLES, AND HYPOTHESES

Twenty-five variables were included in the study, and are grouped into three categories: (I) content, (2) linguistic structure, and (3) paralanguage variables.

Surprisingly few studies have considered the influence of conversational content (i.e., what is said) on interpersonal attraction. Alternatively, some attention has been paid to nonverbal behaviors (e.g., Huston and Levinger 1978; RaIl, Greenspan and Neidich 1984; Goldband 1981; McGinley, Blau and Takai 1984; Harrigan and Rosenthal 1983; Walker and Campbell 1982; Parsons and Linden 1984; Simmons 1993). In their review of the employment interview literature, Avery and Campion (1982) conclude that both nonverbal and verbal behaviors influence interviewers' ratings, the latter to a greater extent. Alternatively, Lee, McGill and Uhlemann (1988) report that nonverbal cues do influence attractiveness but verbal cues do not.

Certainly, there is a longer history of trying to use nonverbal behaviors as *measures* of interpersonal attraction itself – e.g., eye contact (Argyle, 1967, and Rubin, 1970) and other forms (Hess, 1975, and Mehrabian, 1972). But, work has barely begun that considers nonverbal

behaviors as possible causes of attraction. Our own choice of independent variables is limited by our data, audio tape recordings of conversations. However, our data do yield rich measures of both verbal and what most consider nonverbal behaviors in the three categories described below.

In the sections to follow, we develop hypotheses regarding relationships between behaviors and attractiveness. However, because little work has been done in this area, the support for our hypotheses is sketchy, at best. Thus, our study is exploratory. Descriptions of the categories and specific variables follow. The sellers' behaviors that were analyzed and the variable definitions are presented in Table 1.

Insert Table 1 about here

CONTENT VARIABLES

Angelmar and Stern's (1978) content analysis schema was selected as one the bases of this study because of its strong theoretical underpinnings and its relevance to the topic of buyer-seller negotiations. However, during the coding and reliability check processes, the schema was modified substantially. A comparison of Angelmar and Stern's schema and our coding system is presented in Table 2. Consistent with Graham (1985), normative appeals, rewards, and punishments simply were not used often enough to code reliably. Angelmar and Stern (1978) found in examining *written* communication (as we did in examining face-to-face communication), that differentiating between threats and warnings was not worthwhile, and promises and commitments were found to be indistinguishable. Their categories of recommendations were also collapsed into one variable, prescriptions.

Insert Table 2 about here

Questions

We found it useful to extend Angelmar and Stern's (1978) schema, incorporating approaches of linguists to code three types of questions: request for clarification, which we define as a request for the speaker to repeat, restate, and/or explain an utterance; request for information; and initiation, which is a statement requiring a response.

A request for clarification suggests that the seller did not quite understand the buyer, but that the buyer's point is important enough that the seller wants to hear it repeated. Thus, a request for clarification indicates an interest in what is being said, and such attention is likely to be viewed in a positive way by a buyer.

H$_1$:   A high percentage of requests for clarification is associated with higher interpersonal attraction.

A request for the buyer to provide information also indicates an interest in his or her comments. A seller's request for information lets the buyer know that the seller believes that what buyer is saying is important and warrants consideration. In this manner, information questions are a building block in integrative or problem-solving negotiations; and sellers using a problem-solving approach will be seen in a more positive light than those taking an exploitive approach.

H$_2$:   A high percentage of requests for information is associated with higher interpersonal attraction.

The third type of question coded is an initiation, which we define as a statement requiring a response. That is, rather than asking directly, "How do you usually handle delivery?" The speaker might say, "I don't know how you usually handle delivery." The intent is the same, to learn about delivery, but the form of the statement is different. Moreover, the intent of initiations is often clear only within the context of the conversation. Standing by itself the latter statement might be interpreted as either self-disclosure or as a question (i.e., initiation form). Such indirect questions might be seen as more polite (i.e., less demanding) in tone, or perhaps as a less efficient, "beating-around- the-bush" kind of approach. So, lacking previous studies upon which to base a single hypothesis, we state two:

H$_{3a}$: A higher percentage of initiation is associated with higher interpersonal attraction.

H$_{3b}$: A high percentage of initiations is associated with lower interpersonal attraction.

Self-Disclosures

While self-disclosure has been associated with attraction (Argyle, 1967; Cozby, 1973), some authors have suggested that the attraction is affected by the intimacy of what is being disclosed (Huston and Levinger, 1978). Cozby (1973) asserts that high levels of disclosure about intensely intimate topics create anxiety, rather than attraction, in the listener. Based on more recent studies Norton, Frost, and Ariely (2007) report that more information provided by interactants can lead to lower levels of interpersonal attraction.

In this study, the self-disclosures likely to be encountered are not the highly personal, anxiety-causing type discussed by Cozby. Rather, they are less intimate, revealing information that pertains to the negotiation simulation (e.g., "Right now, the color televisions aren't our priority"). In a negotiation, buyers tend to reciprocate with information about their own subjective expected utilities. Indeed, reciprocity in verbal and nonverbal behaviors is well documented among American interactants (Pruitt, 1981).

Finally, Hund, Olson and Markley (1986) report differing effects for solicited versus unsolicited self-disclosures, the latter leading to lower attractiveness ratings. Consistent with their findings, we predict:

H_{4a}:   A higher percentage of self-disclosures in response to questions will be associated with higher interpersonal attraction.

H_{4b}:   A higher percentage of unsolicited self-disclosure will be associated with lower interpersonal attraction.

Admonitions

Admonitions occur when a seller predicts that negative consequences will result from a buyer's actions (e.g., "If we can't agree on this, then I'm calling it quits"). By definition, admonitions are negative, and the effect that they have on the listener is likely to be negative. Angelmar and Stern (1978) posit that admonitions (which they call threats) "increase the cost of noncompliant behavior" (p. 95), indicating that because of the strength of threats as an overt influence tactic, the buyer's attraction to the seller may be substantially reduced. In their description of a customer-oriented sales approach, Saxe and Weitz (1982) suggest avoiding manipulative and high pressure influence tactics. In addition, buyers were found to be less

satisfied with a negotiation when sellers used more admonitions (Graham, Neu and Rodgers, 2009).

H_5:   A high percentage of admonitions is associated with lower interpersonal attraction.

Commitments

Commitments are the seller's guarantee to do something that the buyer wants done. A promise to do what the buyer wants is "music to the buyer's ears. " While an admonition increases the cost of noncompliant behavior, a commitment "attempts to decrease the cost of compliant behavior" (Angelmar and Stern, 1978, p. 95). Because the seller is promising to do something the buyer wants, a commitment positively influences the attraction of the seller to the buyer.

H_6:   A high percentage of commitments is associated with higher interpersonal attraction.

Prescriptions

Prescriptions occur when a seller recommends or commands that a buyer take a certain action. Prescriptions differ from admonitions in that no negative consequences are included. However, prescriptions are still overt influence tactics designed to alter the buyer's utilities in the direction of the seller's.

The buyer may see through the manipulative attempt and ignore the recommendation, and the seller's attractiveness to the buyer may concomitantly be reduced. Further, because the use of commands has been found to occur largely in caretaker talk (adults to children, teachers to pupils), which is marked by its *asymmetry,* it is expected that the use of commands in a negotiation will also indicate an asymmetrical relationship. Buyers may be dissatisfied with the asymmetrical relationship, resulting in lower attractiveness ratings of sellers by buyers.

H_7:   A high percentage of prescriptions is associated with lower interpersonal attraction.

LINGUISTIC STRUCTURE VARIABLES

From linguistic and sociological studies of various types of interactions, we know that salient information about the interaction is not necessarily contained entirely within the overt, stated message. Analyses of patterns in conversation, i.e., the conversation structure, have shown that *how* something is said can convey meaning just as important to our understanding of an interaction as the **what** of the message.

Certainly the reality of any particular situation provides much of the context for making decisions about meaning, and so does all previous communication between actors. Gumperz (1979) has posited that humans, in the course of interaction, also indicate context for interpretation of verbal communications through the use of contextualization cues. He explains:

> Our hypothesis is that conversational inference, i.e., the process by which speakers interpret what is intended by a conversational contribution, is in part determined by a system of conventional discourse-level verbal and non verbal signals. These signals, termed "contextualization cues," serve to signal the way in which any conversational contribution is to be understood, in light of the participants' expectations and the situation at hand (p. 2).

The six linguistic structure variables we included in this study are "discourse-level **verbal***" signals.

Hedges

Hedges are words or phrases that cause "fussiness." Little research has been undertaken on the effect of hedges on interpersonal attraction. However, studies on the effect of hedges on assessments of the competence, authoritativeness, and attractiveness of the speaker in courtroom situations have found that speakers using lower levels of hedges are perceived as more competent, authoritative and attractive (Erickson, Lind, Johnson and O'Barr, 1978; Hosman and Wright, 1987). Similarly, research on employment interviews reveals that interviewees who use more hedges are not rated as highly as those who use fewer hedges (McGovem and Tinsley, 1978); thus, interviewees using hedges are perceived as less attractive to interviewers.

Hedges convey the speaker's uncertainty about a statement or are used to qualify statements in an interaction, limiting their strength. Hedges may lead the listener to conclude that the speaker is not sincere or knowledgeable about his or her statements, inhibiting the speaker's attractiveness to the listener. We examined the influence of two types of hedges on interpersonal attraction: approximators, which we defined as words or phrases that affect the propositional

content of an utterance, but not the speaker's commitment to it; and shields, defined as words or phrases that affect the speaker's commitment to an utterance.

H8:   High levels of (approximators and/or shields) hedges are associated with lower interpersonal attraction.

Repairs

We defined repairs as the verbal correction of any "problems" that occur in speaking such as false starts and hesitations. Here, three types of repairs are collapsed into one variable: (1) substantive other-repair, in which the listener repairs something the speaker says; (2) substantive self-repair, in which the speaker repairs something he or she said; and (3) non-substantive repair, in which the speaker repeats portions of words, whole words or phrases.

Generally, repairs have been found to negatively influence interpersonal attraction. The work by Erickson et al. (1978) revealed that hesitations, a form of repair, are "powerless" and that persons whose speech included them were perceived as less credible and less attractive. Also, Hosman and Wright (1987) found that persons using a high number of hesitations are perceived as less authoritative and less attractive. Similarly, speakers with a high number of speech errors are perceived as being more deceitful and, therefore, less attractive (Mehrabian, 1972, 1981).

H9:   Higher levels of repairs are associated with lower interpersonal attraction.

Use of "We"

The study includes two kinds of uses of "we": (1) exclusive "we" and (2) inclusive "we. " The exclusive "we" is used to indicate the speaker and another party not present in the interaction (e.g., "We need to sell some appliances to your company"). The inclusive "we" is used to indicate the speaker and the other(s) present in the interaction (e.g., "Maybe we can figure out something that would be better for both of us").

In the exclusive "we" condition, the buyer is subtly being told that he or she is separate from the sellers group. Using "we" to describe the seller and those he or she represents may alienate the buyer from the seller. This alienation may leave the seller less attractive to the buyer.

When the seller uses "we" to include him or herself and the buyer, the buyer may feel uncomfortable with the overly familiar tone the seller is using. Thus, the buyer becomes less attracted to the seller. These two relationships can be summarized in the following hypotheses:

H_{10a}:   A high rate of use of the exclusive "we" by the seller is associated with lower interpersonal attraction of the seller to the buyer.

H_{10b}:   A high rate of use of the inclusive "we" by the seller is associated with lower interpersonal attraction of the seller to the buyer.

Presumptive "You "

We define the use of presumptive "you" as when the seller "defines" the buyer's reality for him or her by relating a story told in the second person. By replacing the buyer's views with the seller's own interpretations, the seller is suggesting that the buyer's view of reality may be not quite right. The buyer might interpret this invasion as a presumptuous infringement of his or her "conversational rights." Thus, the use of the presumptive "you" decreases the attractiveness of the seller.

H_{11}:   A high rate of the use of presumptive "you" by the seller is associated with lower interpersonal attraction.

PARALANGUAGE VARIABLES

Substantial research has been conducted on paralanguage variables, which can be defined as vocalizations "not typically included in the phonological description of language" (Duncan and Fiske, 1977, p. 5), and that may regulate conversational flow (Dew and Ward, 1993). We have included eleven paralanguage variables in this study, ranging from simultaneous talk, in which the participants both speak at the same time, to unfilled pauses, in which neither participant speaks.

Simultaneous Talk

Siegman and Feldstein (1978) examined the relationship between personality factors and initiation of simultaneous talk, which are instances when both persons in an interaction speak at the same time. The researchers found that participants who initiated more simultaneous speech

were more relaxed, complacent, secure, and not overly dependent on the approval of others. Participants who were more apprehensive, self-reproaching, and tense initiated simultaneous talk less often. Further, interruptions have been associated with more interest and involvement in the conversation (Siegman and Feldstein, 1978). Finally, in a laboratory experiment in which subjects' conversations with interviewers were either interrupted or not interrupted, subjects reported that they felt that the interviewer respected them more in the interruption condition (Goldband, 1981). The author concluded that the interruptions positively affected the interactions. Higher interest and involvement in a conversation indicates that one is attracted to another and is interested in what they have to say. These findings lead to the hypothesis:

H_{12a}: Higher levels of simultaneous talk is associated with higher interpersonal attraction.

Conversely, instances of simultaneous talk have been found to be inversely related to a partner's satisfaction with the interaction (Graham, 1990). Additionally, Graham et al. (1994) found that the more a seller's speech overlapped the buyer's in a negotiation, the less the buyer was satisfied with the interaction. In fact, this variable alone explained almost half of the variation in the buyers' satisfaction. These findings are consistent with those of linguists investigating different social settings --frequent interruptions negatively influence interpersonal relations (cf West, 1980). These findings suggest a competing hypothesis:

H_{12b}: Higher levels of simultaneous talk are associated with lower interpersonal attraction.

Pines

The effect of conversational pauses on interpersonal attraction has received limited consideration empirically, and findings are mixed. Siegman and Feldstein (1978) conducted experiments measuring whether two types of pauses were noticeable to a listener in an interaction: juncture pauses, which they describe as devices connecting two clauses in speech, and hesitations, which are unfilled pauses. They found that the juncture pauses were far less noticeable to the listener than unfilled pauses. In addition, the authors argue that unfilled pauses reveal uncertainty on the speaker's part about what she or he is going to say next and may occur when what the speaker must say is problematic for the speaker. The authors found that such

unfilled silences are more noticeable than filled or juncture silences. One could conclude from this study that juncture pauses increase interpersonal attraction because the conversation remains active; any pauses are "filled" by junctures. Moreover, the study would also lead one to conclude that unfilled pauses result in lower interpersonal attraction because the conversational gaps highlight the awkwardness of the interaction. Parsons and Linden (1984) found fewer pauses to be correlated with higher applicant qualifications in a study of job interviewing. Finally, in their study on perceptions of powerful speech, Hosman and Wright (1987) revealed that in a courtroom situation, speakers were found least attractive to listeners when they used a high number of unfilled pauses.

Two types of pauses were considered in this study: filled pauses, which occur when the participants filled conversational pauses with noncontent utterances such as "ah, " "urn, " or "you know; " and unfilled pauses, which are silent periods of 10 seconds or longer. We sought to contribute to the findings on pauses by testing the relationship between these two types of pauses and interpersonal attraction.

H_{13a}:   Higher incidences of filled pauses are associated with higher
             interpersonal attraction.

H_{13b}:   Higher incidences of unfilled pauses are associated with lower
             interpersonal attraction.

Speech Rate

In a series of three experiments conducted by Mehrabian and W1lliams (1969), the authors found that higher speech rates were associated with a speaker's increasing attempts to be persuasive. Further, the researchers found that higher speech rates were also associated with increased perceived persuasiveness of the communications. In other words, people who wish to be persuasive speak faster and are, in turn, perceived to be more persuasive. Similarly, people with faster speech rates have been described as more credible and more persuasive, as well as more competent and socially attractive (Pearce and Conklin, 1971; Street, Brady and Putman, 1983). Finally, rate of speech was found to be highly correlated with general attractiveness (Oksenberg, Coleman and Cannell, 1986).

An alternative perspective is that a fast-talking seller, particularly in a negotiation, might be perceived as speaking quickly to try to slip something by the buyer. Such an attempt at being

persuasive might backfire, and be perceived as decidedly unpersuasive. Perhaps a fast speech rate alone is not what increases the attractiveness of the speaker, but it is a variation in speech rate, from an average rate to a faster one that makes the speaker attractive to the listener. In fact, in the same study by Mehrabian and Williams (1969) discussed above, the researchers found vocal activity to be slightly more persuasive than a faster speech rate. This finding suggests that a variation in the speech rate will increase the attractiveness of the speaker.

H_{14}:   Increased variation in speech rate (higher and lower) is associated with
            higher interpersonal attraction.

Volume

As with speech rate, increased volume of speech has been associated with both the intention to be persuasive and persuasive communications (Mehrabian and Williams, 1969; Packwood, 1974). People who speak louder are perceived to be more knowledgeable and competent (Petty and Cacioppo, 1981). Further, Oksenberg et al. (1986) found that louder speech volume was correlated with the general attractiveness of the speaker.

However, a consistently loud speech volume could be annoying to a listener, thus decreasing rather than increasing the speaker's attraction. Therefore, we hypothesized that a variation in speech volume would increase the seller's attractiveness to the buyer:

H_{15}:   Increased variation in speech volume (higher and lower) is associated with
            higher interpersonal attraction.

Speech Pitch

The research on the relationship between speech pitch and interpersonal attraction is quite limited. However, in their research on speech characteristics and persuasiveness, Mehrabian and Williams (1969) found that greater variability in pitch was associated with the intention to persuade and persuasive communications. Similarly, in studies on simulated employment interviews, interviewees using speech with greater variability in pitch were rated higher than interviewees who spoke in a monotone voice (Avery and Campion, 1982).

Oksenberg and associates (1986) found that higher variation in voice pitch was associated with greater general attractiveness. However, the authors point out that the experiments used female participants only, who may more readily accept high pitch voices than male subjects. The

researchers specify that their findings may not hold for male subjects. Further, while the researchers found that the average pitch was correlated with attraction (i.e., .61 and .56 in two experiments), the correlation of variation in pitch with attraction was considerably higher (i.e., .95 and. 77 for the same two experiments). Thus, we would expect that variation in pitch would be associated with higher interpersonal attraction.

> H_{16}:   Increased variation in speech pitch (higher and lower) is associated with higher interpersonal attraction.

Laughter

Laughing and smiling have traditionally been associated with warm, relaxed interactions and feelings of pleasure (Mehrabian, 1981). Research in employment interviews reveals that interviewees who smile more are rated higher by interviewers than those who do not smile (lmada and Hakel, 1977, Young and Beier, 1977). McAdams, Jackson, and Kirshnit (1984) report that laughter was associated with interpersonal attraction. .

Researchers have found that the incidence of smiling and laughing in an interaction are highly correlated (Duncan and Fiske, 1977), thus there is precedence for us to consider the incidence of laughing in this experiment. Duncan and Fiske (1977) identify two types of laughing in their extensive work on interpersonal interactions, the laugh rate while speaking and the laugh rate while not speaking. However, these researchers did not test how these different kinds of laughter influence interpersonal attraction. We are extending their work by examining both relationships:

> H_{17a}:   Increased incidences of laughing while not speaking are associated with higher interpersonal attraction.

> H_{17b}:   Increased incidences of a seller laughing while speaking are associated with higher interpersonal attraction.

RESEARCH METHODOLOGY

Participants

The participants in the negotiation simulation were 58 U.S. businesspeople, all with at least two years of business experience (mean = 7.8 years). The average age of the participants

was 31.3 years. To gain some estimate of the participants' negotiation experience, each was asked, "What percentage of your work involves contact with people outside your firm?" The mean of the responses was 51.5 percent.

Laboratory Setting

Wide agreement exists that interpersonal attraction is an important aspect of negotiations (Thompson, 1990). In the negotiation game (developed by Kelley, 1966, and used by Pruitt and Lewis, 1975; Lewis and Fry, 1977; and Clopton, 1984), a dyad (one retailer/buyer and one wholesaler/seller) bargains for the prices of three commodities. The game has mixed-motive qualities; that is, the joint profits for both players vary, as well as profits for individual players. Differing amounts and types of background information can be included with the basic pay-off matrices, depending on the focus of the research. In this study, however, there was no experimental manipulation. The game is simple enough to be learned quickly, but complex enough to provide usually about one-half hour of face-to- face interaction. The simulation, instructions, and instruments used are identical to those presented in detail in Graham (1986).

Dependent Variable – Interpersonal Attraction

Berscheid (1985, p. 418) cautions: "As a psychological construct, attraction thus deserves conceptual respect as an inferred state that cannot be straight forwardly identified with any one or two measuring devices, including those that rely upon verbal self-report." Our approach to managing this measurement problem has been like most others, to conceive interpersonal attraction as an attitude-like construct. As such, the three 5-point items included in our attitude scale on the post-simulation questionnaire reflect, roughly, the traditional three components of attitude-cognitive (i.e., "How interested were you in the person with whom you were paired?"), affective (i.e., "How comfortable did you feel with the particular person with whom you were paired?"), and behavioral intentions (i.e., "How interested would you be in seeing the person with whom you were paired again?"). In the last respect, ours is quite similar to Byrne's (1971) question to his subjects, "How much would you enjoy working with the stranger?" This last question also implies another important aspect of attraction, the prospect of future interaction (e.g., Tyler and Sears 1977).

Data Development – Process Measures

An important contribution of this paper is the use of observational methods in the derivation of the process measures. Several steps are necessary in the conversion of conversations to numbers which can then be used in statistical analyses. First, each simulated negotiation was audiotape-recorded. Next, the tapes were transcribed, including coding of the linguistic structural and paralinguistic variables. Third, the content analysis was done. Fourth, the reliability of the coding was checked. Finally, behaviors of each seller were counted for statistical comparisons to the outcome measure.

Transcriptions. All negotiations were audiotaped and transcribed by one of the principal researchers using a modified version[2] of the notational system developed by Jefferson (Schenkein, 1978). The Jefferson system permits an in-depth analysis of how participants in conversations structure their talk. As transcription required approximately 40 minutes for each minute of talk (with an average negotiation being 30 minutes long, so that more than 580 hours were required to transcribe the data), this is a major practical difficulty with conducting this kind of research. See the Appendix for examples of the transcription notational system.[3]

Variable Coding. As described in an earlier section, a modified version of Angelrnar and Stern's (1978) content analysis schema was used. Additionally, six linguistic structure and eleven paralanguage variables were coded. Again, one of the principal researchers coded all the interactions.

Reliability. The reliability of the 3-item attractiveness measure proved to be adequate, Cronbach $\alpha =$. 78.

The coding reliability was assessed using the approach outlined by Angelmar and Stern (1978). Reliability checks were performed by two different researchers; one considered the linguistic structure and paralinguistic variables, the other examined the content analysis. Each had previous experience in coding transcripts using similar schema. As can be seen in Table 1, in almost all cases agreement among the coders was well within the standards discussed by Angelmar and Stern. Upon close examination, the larger discrepancies (i.e., clarifications) appear to be the result of errors made by the checkers, not by the principal coder.

Data Analyses

Hypotheses Testing. Correlation coefficients for each of the variables with the attractiveness index are presented in Table 1.

Data Exploration. Next, an exploratory factor analysis was conducted of the sellers' behaviors (1) to check for a latent structure in the schema and (2) to examine the consistency and coincidence of measures taken at the three levels of analysis – content, linguistic structure, and paralanguage. The 25 variables were factor analyzed using a principle component factor solution with varimax rotation.

Then, a stepwise regression was conducted to determine which behaviors explain interpersonal attraction using the factors suggested from the factor analysis, and the other remaining behavioral variables.

Finally, the parameters of a structural equation model incorporating the behavioral measures, as well as measures of familiarity (see Berscheid, 1985; Norton et al., 2007) and similarity were estimated using a Partial Least Squares approach (see Fornell and Bookstein, 1982). This final step in the analysis was taken (1) to examine the importance of the behavioral measures relative to other constructs[4] and (2) to determine if the influence of behaviors mediates the relationships between the other constructs and attraction. Descriptions of the familiarity and similarity measures are provided below, and the model tested is presented in Figure 1.

Insert Figure 1 about here

(a) Familiarity was measured by adding together the responses of both buyers and sellers to the following question: "How well acquainted were you with your partner before this research took place?" (Well-acquainted = 5, and This was our first meeting = 1). The agreement between buyers' and sellers' responses was high (r = 0.94, p < 0.05).

(b) Typically, similarity is measured by comparing attitudes of subjects. We have taken a different approach here. We have used a unique (to our knowledge) approach that incorporates demographics, activities, and personality measures. Each negotiator was asked his/her sex:, age (as in Byrne 1971), and "How much of your work in your position involves people outside your firm?" Others have found that similarity of activities influences attraction (Werner and Parmelee

1979; Lyndon, Jamieson, and Zanna 1988). Each negotiator also completed the 20-item Jackson Personality Inventory (cf., Triki 1973) to measure generalized self-esteem (in our study, Cronbach α = .83) and a 6-item version of Eysenck's (1958) extroversion scale (see Byrne, 1971, and Suman and Sethi, 1985, in our study, Cronbach α = .65). Similarity scores were calculated for each dyad (i.e., similarity = -1 |buyer's score -seller's score|) for each of the five variables. Then, rather than simply standardizing and adding the five similarity measures, we used a formative indicator measurement approach as the most appropriate measure of global similarity. Indeed, an additive (or reflective indicator) measurement approach makes little sense, because why should we expect high internal consistency across five such disparate measures of similarity? (Indeed, for the five measures taken together, Cronbach α = .28.) Fornell and Bookstein (1982, p. 441) best describe the rationale for this measurement approach:

> ...unobserved constructs can be viewed either as underlying factors or as indices produced by the observed variables. That is, the observed indicators can be treated as reflective or formative. Reflective indicators are typical of classical test theory and factor analysis models; they are invoked in an attempt to account for observed variances or covariances. Formative indicators, in contrast, are not designed to account for observed variables; they are used to minimize residuals in the structural relationship.

RESULTS

Hypthesis Tests

Seven hypotheses were supported by our analyses. The prediction that a seller's use of commitments, which we defined as a guarantee to do something that the buyer wants, would increase the buyer's attraction to the seller was supported (H_6, r = .30, p < .10). As predicted, shields were found to be inversely related to attractiveness (H_8, r = -.25, p < 0.10). We also hypothesized that the seller's use of inclusive "we" would decrease the buyer's attraction to the seller (H_{10b}, r = -.45, p < .05). As predicted, unfilled pauses, or silent periods, negatively influenced attraction (H_{13b}, r = -.35, p < .05). The hypothesis that sellers' variation in speech rate would increase attractiveness was supported (H_{14}, r = .34, p < 0.05) Similarly, our prediction that the seller's variation in speech pitch would increase attraction was supported (H_{16}, r = *.38,p <* .05). Finally, the prediction that the seller's laughing while speaking would increase attraction was supported (H_{17b}, r = .43, p < .05).

Two other statistically significant correlations were found, but they were opposite in direction from what had been predicted. First, a seller's use of presumptive "you" was found to be positively related to attraction (H_{11}, r = .25, p < .10). Also, speech volume changes were associated with lower attraction (H_{15}, r = -.26, p < 0.10).

Factor Analysis and Regression Analysis

The principle components analysis identified eight separate factors. However, examination of the loadings suggests that four were interpretable and interesting; these we have labeled in Table 3 as (1) garrulous, (2) instrumental, (3) information-seeking style, and (4) jovial. These four factors accounted for 59.9 percent of the total item variance.

Insert Table 3 about here

To gain a clearer picture of the relative predictive power of the behavioral variables, two regression analyses were conducted, (1) with the four factors revealed in the factor analysis and then (2) the eight variables not included in the four factors were added in a second step-wise regression. The latter regression equation included two factors, information-seeking style and jovial behaviors, and two variables, inclusive "we," and slower speech rate. The results of the regression analyses are presented in Table 4. In the latter equation, the two factors and two variables explain 58% of the variation in the buyer's interpersonal attraction to the seller.

Insert Table 4 about here

The structural equation analysis provides several interesting results (see Table 5 and Figure 1). The influences of the behavioral measures appear to be *separate* from the familiarity (Norton et al., 2007) and similarity constructs. All six independent variables have statistically significant influences on attractiveness, yielding an R^2 of .80. Familiarity appears to have no effect on the behaviors. Similarity does appear to have one indirect effect on attractiveness, mediated through information-seeking. That is, the more similar sellers were to buyers, the lower the percentage of direct questions and silent periods.

Insert Table 5 about here

Finally, in the context of the model presented in Figure 1, one type of similarity appears to be substantially more important than the others. The latent variable weights for the similarity

construct were: self-esteem (.36), extroversion (.30), sex (.39), age (.15), and percent of work outside the firm (.64). Thus, an activity dimension (% of work outside the firm) was the most usefule measures of similarity in this study.

DISCUSSION AND CONCLUSIONS

Our study makes several unique contributions to the understanding of interpersonal attraction. Our findings clearly indicate that interaction processes (behaviors) in a face-to-face setting are important precursors of interpersonal attraction. The influences of behaviors appear to be separate and more important than familiarity or similarity. We have considered a much more comprehensive set of behaviors than was considered in previous studies. Tape recordings of behaviors in a relatively naturalistic setting (face-to-face communication between business people during a business simulation) is a rare source of data that provides an unusual degree of external validity. Also, our use of PLS and structural equation modeling differs from the more traditional experimental designs and allows for more appropriate (holistic) measures of similarity. Despite these strengths, our study does have some obvious limitations.

Study Limitations

Our laboratory simulation has shortcomings. Any laboratory study is open to criticisms related to external validity. How well Kelley's (1966) negotiation game represents actual business negotiations, and, therefore, its application to actual interpersonal attraction is problematic. Further, the convenience sample is also an important limitation.

Our measure of interpersonal attraction contained only three questionnaire items. Although the measure was adequately reliable ($\alpha = .78$), it could be argued that the measure was based on too few questions.

One might argue that another limitation of our study is the focus on audible verbal and nonverbal behaviors. Certainly, future studies should use videotaping to allow the inclusion of other kinds of nonverbal behaviors.

<u>Interpretation of Results</u>

        The purpose of this study was to determine which verbal and nonverbal behaviors influence interpersonal attraction. Previous studies in this area were limited, examining only a few different behaviors. We sought to analyze a full range of behaviors to gain a comprehensive view of their effect on interpersonal attraction. Of the 25 behaviors included, nine were found to be related to attractiveness. Most of these behaviors had not been considered in previous empirical studies on interpersonal attraction.

        Our work does extend the literature by including some of the behaviors incorporated in previous efforts. For example, while Oksenberg et al. (1986) found higher pitched speech to be correlated with general attractiveness, the researchers noted that only women comprised their sample and that women might be predisposed to accepting higher pitched voices. The researchers speculated that the findings may not hold for mixed sex samples. Our findings extend those of Oksenberg et al. (1986) by demonstrating a correlation between higher pitched voices and interpersonal attraction beyond female dyads; our dyads included rnale-male and mixed gender dyads, as well.

        Similarly, our findings regarding speech rate do not support previous research, which had described people with faster speech rates as more credible and more persuasive, as well as more competent and socially attractive (Oksenberg et al., 1986; Pearce and Conklin, 1971; Street et al., 1983). We found that variation in speech rate was important for interpersonal attraction, and that persons with a tendency toward slower speech rates were more attractive to their partners.

        However, while the findings of the correlational analyses are a valuable contribution to the interpersonal attraction literature, our findings from the factor analysis and step-wise regression, demonstrating how the variables work together to influence attraction, are also important. They demonstrate the importance of examining the behaviors as an integrated whole, not as independent fragments. The findings highlight the significance of jovial behaviors in interpersonal interactions. The seller's use of jovial behaviors demonstrate his or her enjoyment in the interaction and in the buyer, enhancing the buyer's attraction to the seller. A sense of humor seems to be important.

        Our findings regarding separate information-seeking behaviors (clarifications, information seeking questions, initiations, and silent periods) are more complicated. Certainly, they are generally the opposite of those suggested in the literature and our hypotheses. Moreover,

among our negotiators there appeared to be two styles of asking questions, direct and indirect. That is, the negotiators who used a higher percentage direct questions (clarification and information questions) and more silent periods also tended to use lower percentages of indirect questions (initiations). (Please see Table 3.)

Also, information-seeking style (the factor) had an important influence on interpersonal attraction. Indirect questions (i.e., initiations) appeared to actually enhance interpersonal attraction, while the use of direct information-seeking behaviors had a decidedly negative impact on interpersonal attraction. The seller's questions seeking information and clarification and numerous periods of silence may suggest to the buyer that the seller is less interested in the interpersonal relationship than in gathering information to help him or her in the economic aspects of negotiation. Perhaps, the behaviors are seen as overtly manipulative and hinder attraction. This result, which is in contrast to an associated study (Graham, Neu and Rodgers, 2009) wherein it was discovered that a direct Style of information seeking was positively related to a seller's profits, raises a seemingly crucial question for future research.

The use of inclusive "we" was also found to negatively influence interpersonal attraction. A seller uses this form of "we" to encourage closeness and a sense that the negotiation involves the buyer and the seller as a team. However, perhaps the buyer finds this terminology too familiar and overtly manipulative. Finally, the finding of speech rate variation with a slower rate dominating suggests that the buyers felt more comfortable with a more cautious, careful pace to the interaction.

The overall explanatory power of our model is quite impressive. By observing only the sellers' audible behaviors, we have been able to explain almost 60 percent of the variation in buyers' ratings of sellers' attractiveness (i.e., adjusted regression R^2 = .58; PLS R^2 for four behavioral variables only = .64). Adding in the separate influences of familiarity and similarity, we can explain more than three-fourths of the variance in attractiveness. This is so in spite of our ignoring other factors, such as physical attractiveness and a plethora of variables previously studied.

Future Research

Our findings demonstrate the need for further research on the verbal and nonverbal behaviors that affect interpersonal attraction. Our study could be extended in several ways. First,

while correlational analyses are appropriate at this exploratory stage of inquiry, as the field advances, causal analyses become more important. Certainly, a greater understanding is needed regarding how attitude similarity and physical attractiveness interact with nonverbal and verbal behaviors in interpersonal attraction.

Also important are examinations of visual nonverbal behavior in addition to the audio nonverbal behaviors considered in this study. Such inquiry might ask which visual nonverbal behaviors (e.g., facial expressions, proxemics, or touching) influence interpersonal attraction and whether these behaviors work in conjunction with audible behaviors to affect attraction. For example, does the meaning of an admonition change if the speaker's posture and demeanor are relaxed or nervous? Finally, can our findings here be replicated with negotiators from other countries (see Dew and Ward, 1993)?

Although we have studied the determinants of interpersonal attraction in the context of the most fundamental commercial interaction, face-to-face negotiation, obviously other settings also deserve attention. Just how important is communication style in interviews, leadership activities, joint venture management, to name only a few?

Conclusion

According to journalist David Halberstam (1986) in *The Reckoning*, organizations can exist without interpersonal attraction. He reports: In the late 1930's, Henry Ford was vilified by his factory workers. Yet they stayed with the firm because the economic exchange of Henry's money for their labor was seen positively. Ford treated most of his top executives little better than his labor force. His derision drove his most promising executive, William Knudsen, to a key position at General Motors in 1921. Later, Knudsen became head of war production for Roosevelt in the 1940's. One of Knudsen's peers endured Ford's abuses another two decades, "Already emotionally beaten down by his father, Edsel became a sick man. He had remained loyal to his father and endured his humiliations while healthy ...In 1943, Edsel died" (p. 15). Yes, Ford's organization, held together by *economic exchange and family ties*, survived the founder's later years (1920 -1940), but just barely. Indeed, it is interesting to contemplate the effects on the firm, even the country, if, rather than merely surviving those decades, Ford Motor Company had actually thrived under a charismatic leader.

Our point is that interpersonal attraction is an important sort of social adhesive. Yes, it seems to result in part from similarity and familiarity. But, based upon the results of our study, ***how people behave*** toward one another appears to be an even more important determinant of interpersonal attraction. Certainly, people work for and with people they don't like, and people buy things from people they don't like. But, usually in neither case do they do so well or for very long.

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Buyer:	Anyway, =	
Seller:	= Anyway so you've u:h given a uh request for quotes on uh the items the TV set and typewriter and the vacuum cleaner =	V16, V16 V16 V3
Buyer:	= Right.	V4
Seller:	And uh we have uh adequate uh units in stock for one hundred of each unless you wanna increase that, u::h and I've worked up a ((louder)) (quote)	V16, V12, V16, V5 V3, V16 V21, V5
Buyer:	((softer)) {Okay} =	V20
Seller:	= Oka:y. U:h.	V16
Seller:	The: u:h I don't know if you have another- (.) ano:ther u:h (.) option of TV sets you've been looking at but uh our TV set u:h is little better than the Sony line and uh, u:h, ((lip smack)) our price on it is uh F considering that uh we're talking about * all three of these. (>) The price for all three of these. Of course I can't give you a price of F if: u:h (.) talking about just one- just television sets	V16, V11, V16, V10 V16, V12 V16, V9, V16, V5 V16, V12, V16, V7 V 16, V13 V16 V5
Buyer:	((softer)) {Okay} what are the (_))?	V20, V2
Seller:	Okay and uh typewriters aren't moving as fast as the television sets 'n I could give you price on E, (.) E for the television sets and uh let's split it right down the middle, E for the vacuum cleaners. So I- my TV sets are movin' fast and uh can't come down quite as far on those but uh for your size order (.) split right down the middle on price. 910.2) (whispering?)	V16 V5, V7 V11, V16, V13 V7, V11, V8 V5, V16, V9 V5, V6 V8 V17

TABLE 1
Behaviors Analyzed and Results

Symbol	Variable Name & Definition	Example(s)	Hypotheses	Marginal[a] Reliability	Mean (s.d.)	Correlation with ATT_s
	CONTENT VARIABLES (percentages[†])					
	Questions: Utterances that require a response:					
V1%	*Clarification:* Request for speaker to repeat, restate, and/or explain an utterance	A. I'd like immediate delivery. B. Huh?	$H_1(+)$	.67	.06(.05)	-.20
V2%	*Information:* Request for speaker to provide information	What price will you pay for TVs?	$H_2(+)$	.07	.16(.09)	-.20
V3%	*Initiation:* A statement requiring a response	I presume you had a pretty high markup on that.	$H_3(+/-)$	.18	.10(.06)	.06
	Self-Disclosures: Any information given by speaker A about her/himself. The two types can be distinguished only with reference to preceding talk of other speaker:	Right now, the black and white TVs aren't our priority.				
V4%	*Disclosures in response:* Information given in response to a question.		$H_{4a}(+)$	.08	.12(.06)	.05
V5%	*Unsolicited disclosures:* Information volunteered.		$H_4(-)$	.10	.25(.10)	-.03
V6%	**Admonitions:** Speaker A predicting a negative consequence will result from Bs action. The consequence may or may not be under the control of Speaker A.	If we can't agree on this one, then I'm calling it quits.	$H_5(-)$	.00	.02(.02)	.14
V7%	**Commitments**: A guarantee to do something which the listener would want done.	We'll service them free for a year, if you come up to our price	$H_6(+)$	.18	.15(.07)	.30*
V8%	**Prescriptions:** Speaker A recommends or commands B to take a certain action. (Differ from admonitions in that no negative consequences are included.)	Buy our TVs. You'll be able to resell them at a much higher price	$H_7(-)$	.05	.14(.06)	.03
TOTCON	**Content Total** (V1 + V2 + ... + V8)			--	94.9(48.0)	.12

Table 1 Behaviors Analyzed and Results (continued page 2 of 4)

Symbol	Variable Name & Definition	Example(s)	Hypotheses	Marginal[a] Reliability	Mean (s.d.)	Correlation with ATT$_s$
	LINGUISTIC STRUCTURE VARIABLES					
	Hedges: Any word or phrase which causes "fuzziness":					
V9	*Approximators:* Affect the propositional content of the utterance, but not the speaker's commitment to it.	"Sort of blue," "about a hundred units," "around Christmas," etc.	H$_8$(-)	.14	7.1(5.7)	-.09
V10	*Shields:* Affect the speaker's commitment to an utterance.	"I guess," "I think," "We can probably do that," "I don't know," "I have to check with my boss."	H$_8$(-)	.08	15.7(11.0)	-.25*
V11	**Repairs:** Any "problems" that occur in speaking; false starts, hesitations, etc. May also occur where no apparent "problems" exist. Three types collapsed to form one variable:		H$_9$(-)	.09	53.9(60.0)	-.17
	(1) Substantive other-repair, when the listener initiates a repair of something said by the speaker; this may be "filling in" for the speaker when the speaker stumbles or it may also be correcting content matter.	A: And we said...ud... B: ...We said 100 TVs. or A: Okay, that's 100 TVs. B: I believe we said 200.				
	(2) Substantive self-repair, when the speaker initiates a repair of something s/he said.	And I think you ... we should discuss delivery.				
	(3) Non-substantive self-repair, when the speaker repeats portions of words, whole words, or phrases.	I...I...th-think you're right.				
	Use of "we":					
V12	*Exclusive "we"* Indicates the speaker and another party not present in the interaction.	We need to sell some appliances to your company.	H$_{10a}$(-)	.11	27.8(71.7)	-.04
V13	*Inclusive "we":* Indicates the speaker and other(s) present in the interaction.	Maybe we can figure something out that would be better for both of use.	H$_{10b}$(-)	.21	13.2(8.0)	-.45**
V14	***Presumptive "you"*:** When one speaker defines the other's reality for her/him by inventing a story told in the second person. May be viewed as a presumptuous infringement on one's "conversational rights."	Now you always need TVs 'cause you're ...	H$_{11}$(-)	.07	3.8(4.7)	.25**

Table 1 Behaviors Analyzed and Results (continued page 3 of 4)

Symbol	Variable Name & Definition	Example(s)	Hypotheses	Marginal[a] Reliability	Mean (s.d.)	Correlation with ATT_s
	PARALANGUAGE VARIABLES					
V15	**Simultaneous Talk:** Instances when both negotiators are talking at the same time. Three kinds were collapsed together to form this category:		$H_{12}(+/-)$	.04	20.3(23.8)	-.12
	(1) Overlap: Stretches of simultaneity initiated by a "next" speaker just as the current speaker arrives at a possible transition place.	A: And I think we decided on 100 of that, //right/ B: //Hmhmm.				
	(2) Interruptions: Simultaneous speech that intrudes more than a syllable away from a possible turn-transition place.	A: When did //you want delivery? B: //I need them in a week.				
	(3) Simultaneous startup: When both speakers begin speaking at the same time	A: //And I think that ... B: //Okay, we'll do it for you.				
V16	**Pauses:** *Filled pauses:* Pauses filled with noncontent utterances.	"You know," "uh," "ah," "um," etc.	$H_{13a}(+)$	.07	59.3(49.2)	-.19
V17	*Unfilled pauses* (silent periods): Any period of silence of 10 seconds or longer.		$H_{13b}(-)$	.00	3.2 (2.5)	-.35**
	Speech Rate Changes: Stretches of speech were judged to be faster or slower than that speaker's average in the interaction:					
V18	*Slower*		$H_{14}(+)$	.00	1.9 (2.1)	.34**
V19	*Faster*		$H_{14}(+)$	.00	4.9 (3.4)	-.09
	Volume Changes: Portions of words, words, and stretches of talk were either louder or softer than that speaker's average in the interaction:					
V20	*Softer*		$H_{15}(+)$	.00	11.5 (9.5)	-.26*
V21	*Louder*		$H_{15}(+)$	.05	1.8 (2.0)	.13

Table Continues

Table 1 Behaviors Analyzed and Results (continued page 4 of 4)

Symbol	Variable Name & Definition	Example(s)	Hypotheses	Marginal[a] Reliability	Mean (s.d.)	Correlation with ATT$_s$
	PARALANGUAGE VARIABLES (continued) **Pitch:** Portions of words, words, and stretches of talk were either higher or lower pitched than that speaker's average in the interaction:					
V22	*Higher*		H$_{16}$(+)	.00	2.9 (4.8)	.38**
V23	*Lower*		H$_{16}$(+)	.00	.03 (1.2)	-.22
	Laughter:					
V24	*Laughter*: When a speaker laughed and did not speak.		H$_{17a}$(+)	.00	4.1 (4.5)	.21
V25	*Laughing*: When a speaker laughed and spoke at the same time.		H$_{17b}$(+)	.14	2.6 (3.0)	.43**

† Each content category count was divided by the total count of all content categories (TOTCON) i.e., v1% = V1/(V1 + V2 + ... + V8) – to provide a measure of control for the differing amounts of talk provided by each negotiator, as in Graham (1985b) and similar to Simms' (1993) approach.

[a] Marginal reliability – the difference between scores divided by the sum of scores.

*p < 0.10   **p < 0.05

TABLE 2
Bargaining Categories

Categories Used in the Present Study	Categories Used in Angelmar and Stern's (1978 Schema
Questions 　　a.　Clarification 　　b.　Request for information 　　c.　Initiations	Questions
Self-disclosures 　　a.　In response to others' questions 　　b.　Unsolicited	Self-disclosures
Admonitions	Threats and Warnings
Commitments	Commitments and Promises
Prescriptions	Recommendations and Commands
(Infrequent occurrence, therefore not included in the analysis)	Normative Appeals, Rewards and Punishments

TABLE 3
Exploratory Factor Analysis
(factor loadings)

Behaviors	Factor 1 Garrulous Behaviors	Factor 2 Instrumental Behaviors	Factor 3 Information-Seeking Style	Factor 4 Jovial Behaviors
Approximator-type Hedges (V9)	.69	.46	-.05	-.17
Shield-type Hedges (V10)	.58	.44	-.03	-.13
Repairs (V11)	.92	.07	.05	-.01
Use of Exclusive "We" (V12)	.89	.18	-.23	-.08
Simultaneous Talk (V15)	.96	-.03	-.07	.03
Filled Pauses (V16)	.58	.44	.13	-.18
Lower Pitch (V23)	.92	-.10	.01	-.09
TOTCON	.68	.18	-.08	.38
Unsolicited Self-Disclosures (V5%)	.14	.80	-.38	-.12
Admonitions (V6%)	.03	.70	-.12	.28
Prescriptions (V8%)	-.13	-.74	-.23	-.03
Clarification Questions (V1%)	-.12	-.01	.67	.10
Information Questions (V2%)	-.04	-.22	.83	.07
Initiation Questions (V3%)	-.10	-.42	-.60	-.15
Silent Periods (V17)	-.22	-.20	.59	.06
Higher Pitch (V22)	-.02	.05	.15	.89
Laughter without speaking (V24)	-.08	.44	.18	.60
Laughing while speaking (V25)	-.07	-.09	.01	.92
Self-disclosures in response (V4%)	.28	.05	.13	.03
Commitments (V7%)	.10	-.17	-.35	.04
Use of Inclusive "We" (V13)	.46	-.00	-.11	.01
Use of Presumptive "You" (V14)	.31	-.02	-.25	.04
Slower Speech (V19)	-.06	-.07	.01	.05
Faster Speech (V19)	-.15	.02	.16	.10
Softer Volume (V20)	.49	-.04	.32	.07
Louder Volume (V21)	-.16	.08	.25	.17

TABLE 4
Results of Regression
Dependent Variable = Attractiveness of Seller (ATT$_s$)

| Variables	Betas
Four Factors (see TABLE 3) Model:	
Garrulous Behaviors	-.19
Instrumental Behaviors	-.09
Information-Seeking Style (direct)	-.49*
Jovial Behaviors	.52*
Adjusted R^2 = .30*	
Four Factors + All Other Variables (Stepwise Regression):	
Information-Seeking Style (direct)	-.49*
Jovial Behaviors	.49*
Inclusive "we" (V13)	-.39*
Speech Rate Changes, Slower (V18)	.34*
Adjusted R^2 = .58*	

*$p < 0.05$

TABLE 5
Descriptive statistics and Correlations Among Variables Included in the Structural Equation Model (Figure 1)

	Variable	Possible Range	Mean	(s.d.)	Correlations									
					(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
(1)	Familiarity	2 to 10	5.1	(3.2)	--									
	Similarity													
(2)	-in Self-Esteem	-80 to 0	-10.2	(9.1)	.094	--								
(3)	-in Extroversion	-6 to 0	-1.5	(1.3)	.161	.603**	--							
(4)	-in Sex	0 = different sex, 1 = same sex	0.45	(0.51)	-.087	.152	.055	--						
(5)	-In Age	--a	-5.3	(6.1)	.398**	-.210	-.036	-.385**	--					
(6)	-in % Work Outside Firm	-90 to 0	-37.0	(28.8)	-.031	.079	-.154	.249	-.052	--				
(7)	Jovial Behaviors	--a	3.0	(3.3)	.237	-.138	-.058	-.406**	.293**	.022	--			
(8)	Information-Seeking Style (direct)	--a	2.0	(2.6)	-.204	-.564**	-.188	-.305*	-.042	-.259*	.234	--		
(9)	Inclusive "We"	--a	13.2	(8.0)	-.061	-.020	-.080	-.077	-.022	-.300	-.064	-.039	--	
(10)	Slower Speech Rate	--a	1.9	(2.1)	-.006	.122	.233	.196	-.210	.247	.046	.154	-.138	--
(11)	Attractiveness of Seller	3 to 15	12.4	(2.1)	.545**	.260*	.213	.021	.230	.493**	.411**	-.314**	-.445**	.336**

a The possible range is unlimited.
$*p < 0.10 **p < 0.05$

Figure 1 Predictors of Interpersonal Attraction (PLS Parameter Estimates)

*p<0.05

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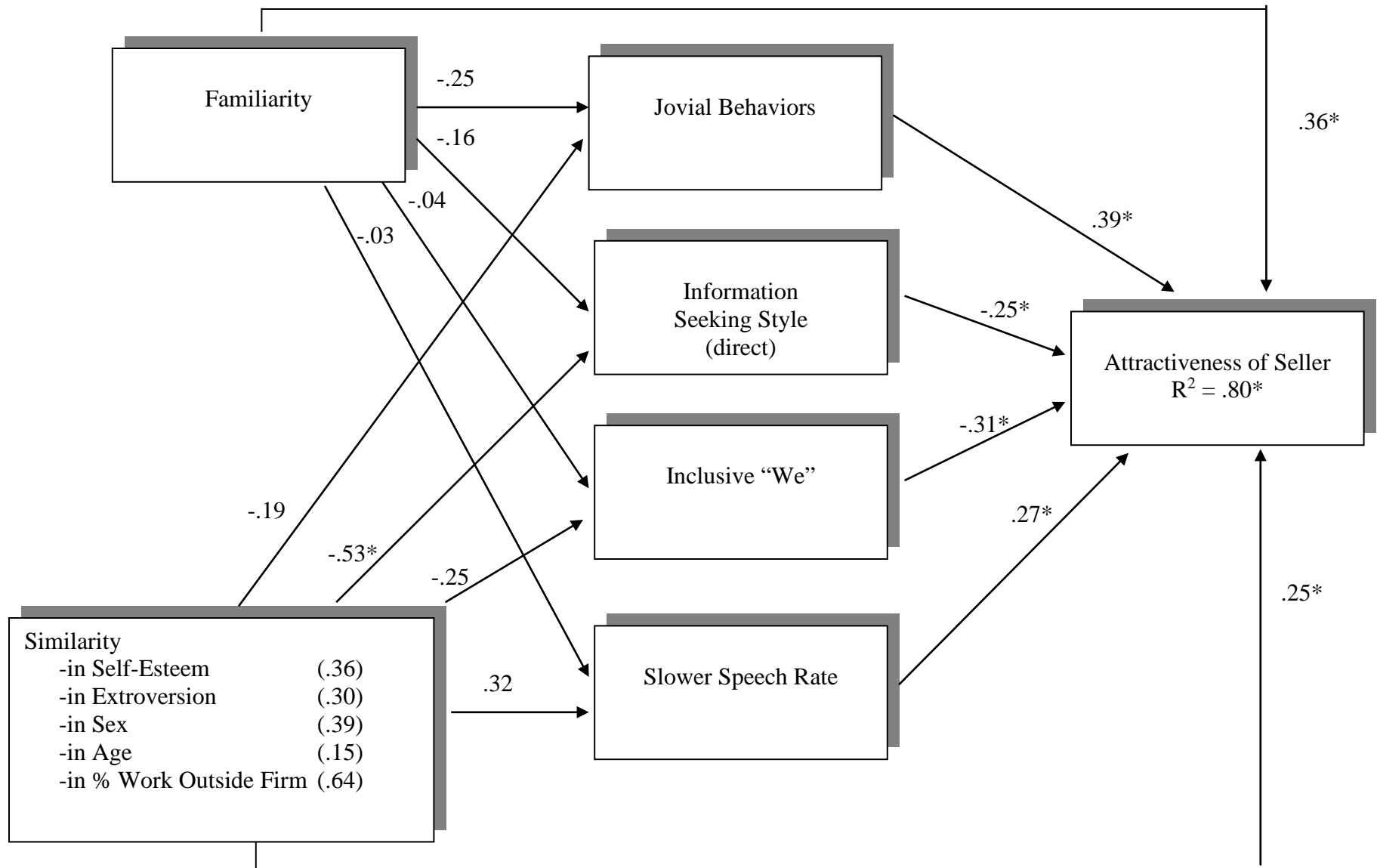
[1]   The reader will note that we have ignored coercion (e.g., the military draft or convict labor) as a fourth kind of social glue, because we judge that with the fall of communism, coercion in organizational settings is becoming obsolete.

[2]   The notational system was modified for use with Micropro's Wordstar for the IMB-PC.

[3]   Utterances may be multiply coded. A commitment, for example, may also give information about the speaker and may thus be coded as a self-disclosure.

[4]   Through space does not permit details regarding their development and associated results, we did consider this in this study three other casual factors: (1) cognitive dissonance theory (Festinger, 1957) suggests that interpersonal attractiveness is a reciprocal relationship, that is, attraction for A $\leftrightarrow$ attraction for B. We checked our data and found that seller attractiveness ratings and buyer attractiveness ratings were unrelated ($r = .226$, $p = .12$). (2) Social exchange theory (Homans, 1974) and others (Lott and Lott, 1968; Aronson, 1969) suggest that attraction to an other results from rewards given by the other. We found no relationship between the sellers' attractiveness and the profits achieved by buyers in the simulation ($r = .34$, $p = .43$). (3) Equity theory (Adams, 1965) suggests that inequity in the ratio of inputs to outputs in an interaction can adversely affect interpersonal attraction. In our simulation, we found no relationship between seller's attractiveness and the ratio of buyer's to seller's profits ($r = .173$, $p = .185$).