This paper provides a theoretical perspective for dealing with the initial entry stage of interpersonal interaction. The seven axioms and 21 theorems presented suggest a set of research priorities for studying the development of interpersonal relationships. The paper concludes with a discussion of some of the problems to be considered if the theory is to be extended beyond the initial stages of interaction.

When communication researchers have conducted empirical research on the interpersonal communication process, they have tended to employ social psychological theories as starting points. Theories relevant to such areas as person perception, social exchange, and interpersonal balance have frequently been employed as frameworks from which to derive testable hypotheses about the interpersonal communication process. While it is true that Newcomb's (1953) balance formulation and subsequent research on the acquaintance process (Newcomb, 1961) do include communication-relevant constructs, his theory does not focus on several important aspects of interpersonal communication. Obviously, Asch's (1946) work in the area of person perception and subsequent developments in that area (Kaplan & Anderson, 1973) are also relevant to the study of interpersonal communication. However, here too we find that these formulations do not directly focus upon the interpersonal communication process.

The present model seeks to remedy this situation by employing communication-relevant constructs which, in turn, lead to the formation of hypotheses which directly involve communication behavior. In constructing the theory, we have elected to focus our attention on the initial phases of interaction between strangers. Our hope is that through subsequent research and theoretical extension, the model can be used to make predictions about and explain interpersonal communication phenomena which occur later in relationships. In our explication of the model, we have attempted to include previous research findings which lend support to our axioms and theorems.

DEVELOPMENTAL STAGES

Before we consider specific constructs and their relationships with each other, we feel it useful to provide some idea of the possible stages by which the communication transaction might be viewed. For purposes of the discussion, it is assumed that the persons involved in the communication transaction are strangers. We have labeled the first stage of the transaction the entry phase. One reason for the use of the term "entry" is that when strangers are faced with each other in a particular situation, their communication behaviors are, in part, determined by a set of communication rules or norms. Some rules are implicit; persons may not be able to verbalize them or indicate where they acquired them. Other rules are quite explicit and the individual might be able to indicate verbally what the rule is and where he acquired his knowledge of the rule. For example, two persons might both say "please" when asking someone to pass them something. One person might indicate that he said "please" because it "is the polite thing to do," while the other person might indicate that he said "please" because it is "natural" and not necessarily "polite." From this example it would seem that the first person is more aware of the "rule" which guided his behavior. Of course, it would also be possible for a person to be more or less certain about the appropriateness of a particular behavior. Some persons consistently have to concern them-
selves about the "appropriateness" of their behavior in particular situations, while others do not. These individual differences would suggest that the learning of rules and norms appropriate to situations, whether through direct instruction or social modeling, is not uniform for all individuals.

Findings to be discussed later indicate that during the entry phase, communication content is somewhat structured. For example, message content tends to be focused on demographic kinds of information. The amount of information asked for and given by the interactants tends to be symmetric. During the latter phases of the entry stage, persons begin to explore each other's attitudes and opinions. The kinds of attitude issues explored are of rather low consequence or low involvement. By the end of the entry phase, the interactants have a fairly confident estimate of whether or not they will develop their relationship toward a more intimate level.

The second phase of the communication transaction we have labeled the personal phase. This phase begins when the interactants engage in communication about central attitudinal issues, personal problems, and basic values. This phase could begin after a few minutes of interaction; however, in most informal communication situations, the personal phase does not appear until the individuals involved have interacted on repeated occasions. While there are almost always rules and norms which regulate communication behavior in most situations, when interactants have moved to the personal phase, communication is more spontaneous and less constrained by social desirability norms. During this phase, persons may talk about socially undesirable aspects of their personalities and social relations. In the entry phase, such information is not usually sought or given.

The final phase of the transaction we have called the exit phase. During this phase decisions are made concerning the desirability of future interaction. Frequently, these decisions are discussed and plans for future interaction made. At a more macroscopic level of analysis, the exit phase of a relationship may occur over several interactions. Divorce is probably a good example. In most instances, it is probably the case that the final physical act of parting is preceded in time by a series of interactions and decisions which produce the final behavior. Knapp, Hart, Friedrich, and Shulman (1973) have begun to study the kinds of non-verbal behaviors which occur during the exit phase of a particular communication transaction. Their data suggest several behaviors which signal the end of a particular encounter.

By employing these descriptive categories we do not mean to imply that the phases are exhaustive or necessarily exclusive. Moreover, there are probably conditions under which the entry phase will be of relatively short duration and the interactants will move rapidly to the personal phase. Of course, it is also possible that because of certain information gained during the entry phase, the interaction will be terminated and the personal phase skipped entirely. All of these possibilities will be discussed in greater detail. By employing certain constructs, we feel that we can provide adequate explanations for these kinds of phenomena.

AXIOMS

Verbal Communication and Uncertainty

Central to the present theory is the assumption that when strangers meet, their primary concern is one of uncertainty reduction or increasing predictability about the behavior of both themselves and others in the interaction. This assumption is consistent with Heider's (1958) notion that man seeks to "make sense" out of events he perceives in his environment. By uncertainty we mean at least two things. First, at the very beginning of a particular encounter, there are a number of alternative ways in which each interactant might behave. Thus, one task for each interactant is to attempt to predict the most likely alternative actions the other person might take. Moreover, the individual interactant must then select from his own available response alternatives those which might be most appropriate to the predicted action of the other. However, before such response
selection can occur, the individual must reduce his uncertainty about the other; that is, narrow the range of alternatives about the other's probable future behavior. He must attempt to develop predictions about the other before the other acts. In the first sense of uncertainty reduction, the individual is engaged in a proactive process of creating predictions.

The second sense of uncertainty concerns the problem of retroactively explaining the other's behavior. For example, a target person might say something or act in a particular way which induces the other interactant to ask himself or others, "I wonder what he meant by that?" In almost any situation, there are a number of plausible alternative attributions one might make for a particular communicative act. The problem here is for the individual to reduce the number of plausible alternative explanations for the other person's behavior. Thus, in our view, uncertainty involves both prediction and explanation components.

The view of uncertainty explicated above follows from Heider's (1958) seminal attribution work and is consistent with later attribution formulations. Jones, Kanouse, Kelley, Nisbett, Valins, and Weiner (1972), Kelley (1967), and Kelley (1973) generally take the view that we strive to make our own behavior and the behavior of others predictable, and we try to develop causal structures which provide explanations for our own behavior as well as the behavior of others. Within this framework, interpersonal communication behavior plays at least two different roles. First, we must attempt to develop predictions about and explanations for our own and others' communication behavior; that is, communication behavior itself is something which we endeavor to predict and explain. Second, communication behavior is one vehicle through which such predictions and explanations are themselves formulated. Attribution theorists have been quick to point out that such predictions and explanations generally yield imperfect knowledge of ourselves and others. However, it is significant that such imperfect knowledge does guide our total behavior toward others. Thus, crucial to an understanding of a given individual's communication behavior is a knowledge of the kinds of predictions and explanations the individual has for the behavior of the person with whom he is interacting.

Such theorists as Adams (1965), Altman and Taylor (1973), Homans (1961), and Thibaut and Kelley (1959) have argued that reward/cost ratios determine whether or not an interaction will continue. Following from their position, one might argue that since uncertainty reduction is rewarding, the notion of rewards/costs is coterminous with the uncertainty construct. This analysis is somewhat faulty for the following reasons. While uncertainty may be rewarding up to a point, the ability to completely predict another's behavior might lead to boredom. Boredom in an interpersonal relationship might well be a cost rather than a reward. Moreover, since it is difficult to stipulate on an a priori basis just what is likely to be rewarding in a particular relationship, we feel that the reward/cost notion is of limited value in the construction of theory designed to predict rather than to retrodict interaction outcomes. Thus, we feel that uncertainty reduction is a more fruitful organizing construct than is reward/cost.

There are data which support the assertion that at the beginning of the entry phase uncertainty is relatively high and is subsequently reduced as a function of time. For example, Lalljee and Cook (1973) found that as interactions between strangers progressed, filled pause rate decreased while speech rate increased. Pause rate and speech rate were employed as two empirical indicators of uncertainty. In addition, it was found that a measure of anxiety, the non-ah speech disturbance ratio, did not decrease as the interaction progressed. This latter finding was interpreted as lowering the plausibility of the rival hypothesis that the decrease in pause rate was directly related to anxiety reduction.

The preceding discussion of the uncertainty construct and the empirical evidence provided by Lalljee and Cook (1973) suggests the following axiom:

**AXIOM 1:** Given the high level of uncertainty present at the onset of the entry phase, as the
amount of verbal communication between strangers increases, the level of uncertainty for each interactant in the relationship will decrease. As uncertainty is further reduced, the amount of verbal communication will increase.

This axiom posits a reciprocal causal relationship between the amount of verbal communication and the level of uncertainty reduction; i.e., reduction in uncertainty level feeds back to determine the amount of verbal communication. The previously cited Lalljee and Cook study which allowed for two-way exchange found that the number of words per minute uttered by interactants increased significantly over a nine minute period. However, a study by Berger and Larimer (1974) revealed that when feedback was not allowed between strangers, the number of words per minute uttered decreased significantly over a four minute period. In this study, subjects were led to believe that they were talking to a person in another room whose picture they possessed. Actually, the pictures had been previously scaled for physical attractiveness (high, moderate, or low). While no differential effects were found for the physical attractiveness variable, across all conditions there were significant decreases in verbal output over time. The present formulation would suggest that since the subjects did not receive any feedback from the targets, the subjects' levels of uncertainty about the targets remained at a high level. The persistent high level of uncertainty about the target persons reduced the amount of communication directed toward them.

The Communication Environment and Uncertainty

The basal level of uncertainty a person has about a stranger can be modulated by the communication situation itself. For example, the street of a large city provides an observer with relatively little information about the persons walking along it. By contrast, an observer at a political rally for a particular candidate may be able to infer, with a high probability of being correct, the political attitudes of those present at the rally. In situations where uncertainty levels are reduced by the situation itself, conversations are likely to begin by focusing on content areas related to the situation.

Two persons meeting for the first time at a political rally might well open a conversation by discussing the particular candidate and expressing their views about him. In other circumstances, the same two persons might begin a conversation by focusing upon each other's backgrounds. Thus, we recognize that uncertainty level may be influenced by the communication situation itself.

Nonverbal Affiliative Expressiveness and Uncertainty

For the same reason that high uncertainty levels at the beginning of the encounter lower the amount of verbal communication during that period, uncertainty also acts to lower nonverbal expressions of affiliation. There are a number of empirical indicators of nonverbal affiliative behavior which have been shown to be positively correlated with each other. For example, in a factor analytic study of various verbal and nonverbal dimensions in an initial interaction situation, Mehrabian (1971a) found significant positive correlations between such variables as total statements per minute, percent duration of eye contact, head nods per minute, positive verbal content, head and arm gestures per minute, and pleasantness of vocal expressions. These and other variables loaded on a factor labeled affiliative behavior. A second study by Mehrabian and Ksionzky (1971) found much the same pattern of factor loadings for the same variables as those used in the Mehrabian study. It is interesting to note that in both of these factor analyses, distance between the interactants was not associated with the affiliative behavior factor.

In comparing the results of these two studies with the results of other prior research on the distance-liking relationship, Mehrabian (1971b) points out that several experimental studies have supported an inverse relationship between liking and physical distance; persons who like each other tend to stand closer to each other. Mehrabian explains this apparent inconsistency by arguing that in both the factor analytic studies cited above, the distance between the interactants was averaged over the duration of the interaction. Studies which show liking to be associated with
smaller interaction distances usually use initial distance between interactants as the primary dependent variable.

The above discussion of the nature of the nonverbal affiliative expressiveness dimension and its relationship to level of uncertainty suggests the following axiom:

**AXIOM 2:** As nonverbal affiliative expressiveness increases, uncertainty levels will decrease in an initial interaction situation. In addition, decreases in uncertainty level will cause increases in nonverbal affiliative expressiveness.

**Uncertainty and Information Seeking**

Given the relatively high level of uncertainty existing at the onset of the entry phase, one would expect persons in the situation to interrogate each other in order to gain information which might be instrumental in uncertainty reduction. Thus, one might expect interactants to engage in more question asking in the initial phases of the interaction. Moreover, the kinds of questions asked during the beginning of the entry phase might be ones which demand relatively short answers. For example, requests for such information as one's occupation, hometown, places of prior residence, and so on, generally call for relatively short responses. It seems that if an individual gives a relatively long response to such questions, he is generally judged somewhat negatively, especially when a detailed answer to the question was not explicitly called for. The predominance of short-answer questions during the early stages of the entry phase allows interactants to sample a number of different attributes in a relatively short time.

The preceding line of argument leads to the following axiom:

**AXIOM 3:** High levels of uncertainty cause increases in information seeking behavior. As uncertainty levels decline, information seeking behavior decreases.

Data reported by Frankfurt (1965) support the relationship posited in Axiom 3. In this study, the number of questions asked to another in a simulated communication situation declined through time.

**Uncertainty and Intimacy Level of Communication Content**

We assume, as does Goffman (1959), that persons generally prefer to have smoothly running interpersonal relationships. Goffman argues that persons frequently assist each other in their performances so that each performer will maintain "face." Given this assumption and the relatively high level of uncertainty existing at the beginning of the entry phase, we might ask what is the least disruptive way of reducing uncertainty about the other? One strategy might be to ask the other how he feels about a variety of political and social issues. The problem with this strategy is that persons may disagree on such issues which, in turn, may lead to disruptions of their relationship. A better strategy would be to ask for and give biographical and demographic information during the entry phase. Dissimilarities along these dimensions probably have a relatively trivial negative impact on the interaction system. However, similarities and dissimilarities in background characteristics might lead to the development of predictions of similarity or dissimilarity on more crucial attitudinal issues. Thus, not only might uncertainty be reduced, predicted similarities or differences might also determine: (1) whether or not the interaction system will continue to exist and/or (2) whether or not the interactants will engage in a discussion of more intimate issues. For if two persons predict that they have widely differing beliefs on intimate and consequential issues and if they wish to have a smoothly running interaction, they will probably choose to avoid discussions of the issues of potential conflict.

The preceding discussion suggests the following axiom concerning the relationship between uncertainty and intimacy level.

**AXIOM 4:** High levels of uncertainty in a relationship cause decreases in the intimacy level of communication content. Low levels of uncertainty produce high levels of intimacy.
In their discussion of social penetration theory, Altman and Taylor (1973) argue that intimacy level of communication content tends to increase through time. However, their explanation of this phenomenon rests on the notion that as a relationship becomes more rewarding and less costly, persons will become more intimate. Our explanation of the same phenomenon is that as persons continue to communicate with each other, their uncertainty about each other decreases. Decreases in uncertainty lead to increases in intimacy level of communication.

Taylor and Altman (1966) had both college students and navy recruits sort 671 conversational topics along an intimacy continuum. Generally it was found that topics falling into such categories as biographical, hobbies and interests, and current events received low intimacy ratings, while topics falling into the categories of religion, sex, and personal attitudes received higher intimacy ratings. Taylor and Altman suggest that the statements scaled in their study can be used as guidelines for developing rating systems to score the intimacy level of communication content. Sermat and Smyth (1973) followed Taylor and Altman’s recommendation and were able to obtain acceptable interjudge reliabilities of content intimacy in their study. However, Cozby (1973) has pointed out that the kinds of topics which Taylor and Altman scaled for intimacy value may be quite different from the kinds of communication content actually passed during an interaction. For example, according to the Taylor and Altman scaling study, talking about movies is a relatively low intimacy communication topic. However, there is probably a great deal of difference in perceived intimacy between a conversation in which the interactants talk about the movie “Mary Poppins” and one in which they exchange their views on “Deep Throat.” Thus, although the Taylor and Altman study may provide us with rather general guidelines about the intimacy level of communication content, more specific kinds of content within general topic areas must be assessed for intimacy value.

A study by Berger (1973) revealed that during the course of interaction between strangers, the amount of demographic (low intimacy) information asked for and given was highest during the first minute of interaction. After the first minute, statistically significant decreases in the amount of demographic information exchanged were observed; while the amounts of information asked for and given in such more intimate categories as “attitudes and opinions” and “other persons” increased. Studies by Cozby (1972), Ehrlich and Graeven (1971), Sermat and Smyth (1973), Taylor, Altman, and Sorrentino (1969), and Taylor, Altman, and Wheeler (1973) also support the development of intimacy through time.

These outcomes are in agreement with the observations of Altman and Taylor (1973) who suggest that the early stages of the development of a relationship are characterized by exchanges of “superficial” information. While we agree that most observers would tend to judge a conversation consisting of exchanges of biographical information “superficial,” we feel that the kinds of information asked for and given during the initial phases of the entry stage are crucial for the development of inferences about the persons rendering the information.

As Jones and Goethals (1972) have pointed out, primacy effects are more the rule than the exception in person perception research. There are conditions under which recency effects will obtain, but because of the prevalence of primacy effects, we are forced to conclude that information exchanged early in the interaction has functional significance for the actors involved. Knowing that a given individual is a college professor may well help to reduce uncertainty about his political and social attitudes. Obviously, many of the inferences drawn may be inaccurate. Nevertheless, persons do encode messages on the basis of such “imperfect knowledge.”

**Uncertainty and Reciprocity Rate**

The notion that a reciprocity norm acts to control information exchange in an interaction has been advanced by Gouldner (1960). Research in the area of interviewer-interviewee speech behavior
suggests that interviewees tend to match variations in the rate of interviewer speech behavior (Matarazzo, Wiens & Saslow, 1965). Furthermore, evidence supporting the proposition that the amount of information exchanged in an interaction tends to be reciprocal has been reported by Worthy, Gary, and Kahn (1969). While these studies support the existence of a reciprocity norm in interaction, the underlying explanation for the phenomenon is not clear.

In view of the present formulation and the previous argument that persons prefer smoothly running interactions to ones in which there is great stress (Goffman, 1959), it seems reasonable to assume that the easiest way in which to reduce mutual uncertainty would be to ask for and give the same kinds of information at the same rate of exchange. In this way, no one interactant in the system would be able to gain information power over the other. Moreover, it also seems reasonable to assume that as uncertainty is reduced, there is less need for symmetric exchanges of information at a rapid rate. That is, it becomes more possible for greater time lags to occur between speaking and listening. Once uncertainty is at relatively low levels, one person might be able to talk to another for long periods of time without fear of being accused of “dominating the conversation.” However, if a given individual plays the speaker for long periods of time during the entry phase, he would most probably be accused of dominating the conversation and the probability that the interaction would continue would be reduced. Thus, when uncertainty is high, reciprocity rate will also be high. As uncertainty is reduced, reciprocity rate decreases. Formally stated:

**AXIOM 5:** High levels of uncertainty produce high rates of reciprocity. Low levels of uncertainty produce low reciprocity rates.

Altman and Taylor (1973) have argued that the reciprocity construct is of limited value in the development of a theory of interaction development since there has been little in the way of explanation provided for the reciprocity phenomenon; i.e., merely asserting that a particular norm exists does not ipso facto explain its existence. However, we feel that the requirement for even uncertainty reduction in order to avoid asymmetries in information power distribution provides an explanation for the reciprocity norm’s appearance during initial interaction.

Jourard (1960) found evidence suggestive of a “dyadic effect” concerning the intimacy level of self-disclosure. In this study he found that persons who disclosed more to others reported that they also received high amounts of disclosure from others. Subsequent experimental evidence (Worthy, Gary & Kahn, 1969; Ehrlich and Greaven, 1971; Cozby, 1972; Sermat & Smyth, 1973) suggests that when an individual discloses intimate information to another, the other tends to reciprocate at that level of intimacy. Moreover, Sermat and Smyth (1973) found that when a confederate continued to demand higher levels of disclosure through the questions he asked the subject, while at the same time refusing to disclose intimate information about himself, the subject tended to lower his level of liking for the confederate. However, when the confederate matched the subject’s level of disclosure and then demanded disclosure at a higher intimacy level, the subject was more willing to meet the confederate’s disclosure request. These studies together with Axiom 5 suggest that early in a relationship it is crucial for the interactants to convey information evenly and at a fairly rapid rate and to disclose information which is at about the same intimacy level. Violations of one or more of these rules raise the probability of dissolution of the relationship.

**Similarity and Uncertainty**

Most social psychological theories concerned with friendship formation have employed the notion of similarity of some sort as an antecedent of liking. Byrne (1971), Duck (1973), Homans (1961), Newcomb (1953), and Newcomb (1961) have argued that similarities along such dimensions as attitudes and conceptual structure produce interpersonal attraction, while dissimilarity produces negative interpersonal affect. Byrne employs
a reinforcement framework to explain the similarity-attraction relationship. He argues that attitude agreements are rewarding and that such rewards lead to liking. By contrast, balance theorists (Heider, 1958) explain the similarity-liking relationship by arguing that shared affect toward an object will result in pressures toward liking. Recently, Duck (1973) has developed a “filter hypothesis” which asserts that different kinds of similarity are important for liking at different phases of the relationship. He suggests that at the early stages of a relationship, similarity of attitudes tends to be a strong determinant of liking; however, as the relationship progresses, conceptual similarity along both content and structural dimensions becomes the significant determinant of attraction. Duck employs Kelly’s (1955) theory of personal constructs as a conceptual basis for his predictions. He reports several studies, employing a modified version of the Role Rep Test, which show that friends do have significantly higher levels of conceptual similarity than randomly formed dyads.

There is an impressive amount of evidence (Berscheid & Walster, 1969; Byrne, 1971) to demonstrate a positive relationship between attitude similarity and interpersonal attraction. Moreover, Duck’s (1973) research supports a positive relationship between similarity of conceptual structure and friendship formation. In our view, both types of similarity act to reduce the level of uncertainty in a relationship; i.e., similarity of attitudes and conceptual structure produces decreases in uncertainty, while dissimilarities along attitude and conceptual dimensions raise uncertainty levels. Why do disagreements along attitude dimensions tend to raise uncertainty? After all, if a person holds an opinion opposed to mine, does that not reduce my uncertainty about him?

In order to answer the above question, we must consider the influence of affect direction on the number of alternative attributions generated about a person. Koenig (1971) has argued that when we dislike another person, social norms demand that we provide explanations for our dislike. When we like someone, however, we do not have to provide explanations for our liking. This phenomenon Koenig has labeled “justification”; i.e., we must justify our negative affect toward others. Koenig presents data which lend support to his justification hypothesis. Moreover, in research currently being conducted by Berger, a tendency has been found for persons to make more causal attributions for a disagreement between two persons than when the two persons show agreement. In these studies, subjects are presented with alleged conversations in which persons show either attitude agreement or attitude disagreement. Some studies have involved tape recorded conversations while others have used transcriptions of conversations. After the subjects read through or listen to the conversations, they are asked to list as many reasons (attributions) as they can for the agreement or disagreement shown by the persons in the conversation. Data from one of the studies indicate that subjects who were presented with a conversation in which disagreement occurred make more attributions than do subjects who are presented with agreeable conversations. These data suggest that as dissimilarity between persons increases, uncertainty in terms of number of alternative explanations for behavior also increases. Similarity reduces the necessity for the generation of a large number of alternatives for explaining behavior. The preceding line of argument suggests the following axiom:

**AXIOM 6:** Similarities between persons reduce uncertainty, while dissimilarities produce increases in uncertainty.

**Uncertainty and Liking**

As we noted in the previous section, a number of social psychologists have adduced evidence supportive of a positive relationship between similarity and liking. Furthermore, two main theoretical positions have been employed to explain this relationship: (1) reinforcement theory and (2) cognitive consistency theories. Earlier in this paper we suggested some inadequacies of the reinforcement approach to the study of interaction development. We have also argued that similarity-
dissimilarity is connected to uncertainty level. By making such a connection, we are subsuming the notion of similarity-dissimilarity and the related notions of balance under the broader conceptual umbrella of uncertainty. This formulation is consistent with the suggestion made by Berkowitz (1969) that "the striving for cognitive balance may actually only be a special case of a desire for certainty" (p. 96).

When persons are unable to make sense out of their environment, they usually become anxious. Moreover, Festinger (1954) has suggested that persons seek out similar others who are proximate when they experience a high level of uncertainty regarding the appropriateness of their behavior and/or opinions in a particular situation. Schachter's (1959) research on anxiety and affiliation tends to confirm this social comparison theory prediction for first born children. In view of the tendency to seek out similar others in order to reduce uncertainty, reduction of uncertainty by such means should tend to produce liking. This line of reasoning leads to the following axiom regarding the relationship between uncertainty and liking:

**AXIOM 7:** Increases in uncertainty level produce decreases in liking; decreases in uncertainty level produce increases in liking.

Taken together, Axioms 6 and 7 suggest that uncertainty level mediates between similarity and liking. It should be clear, however, that variables other than similarity-dissimilarity influence uncertainty level. Thus, an observed relationship between uncertainty level and liking may be due to similarity and/or the amount of communication that two persons have had with each other.

**THEOREMS**

From the preceding seven axioms, it is possible to deduce the following 21 theorems. Existing evidence relevant to the relationship posited by the theorem will be cited.

**THEOREM 1:** Amount of verbal communication and nonverbal affiliative expressiveness are positively related.

The relationship suggested by Theorem 1 has been verified in at least two factor analytic studies (Mehrabian, 1971a; Mehrabian & Ksionzky, 1971). In both studies such variables as total number of statements per minute and number of declarative statements per minute were found to correlate positively and significantly with such indices of nonverbal behavior as percent duration of eye contact, head nods per minute, hand and arm gestures per minute, and pleasantness of vocal expressions. The observed correlations among these empirical indicators of the amount of verbal communication and the amount of nonverbal affiliative expressiveness lend support to Theorem 1.

**THEOREM 2:** Amount of communication and intimacy level of communication are positively related.

While no study has directly related these two variables, the Lalljee and Cook (1973) finding that as an interaction progresses the number of words uttered per unit of time increases and the finding that intimacy levels of communication content increase with passage of time would suggest the relationship posited by Theorem 2.

**THEOREM 3:** Amount of communication and information seeking behavior are inversely related.

Indirect support for Theorem 3 can be derived from the Lalljee and Cook (1973) and the Frankfurt (1965) studies. As was noted above, Lalljee and Cook found significant increases in speech rate over a nine minute initial interaction period. Frankfurt reported data which supported the proposition that as an interaction progresses, the number of questions asked decreases. Taken together, these findings would suggest an inverse relationship between the amount of communication and the amount of information seeking behavior.

**THEOREM 4:** Amount of communication and reciprocity rate are inversely related.
While there are no data bearing directly upon the veracity of Theorem 4, the suggestions that as the relationship continues the amount of communication will increase and that greater time lags in reciprocity will be tolerated as the relationship continues both lend support to Theorem 4. However, the notion that reciprocity rate will decrease through time is one which needs to be verified empirically.

**THEOREM 5:** *Amount of communication and liking are positively related.*

Empirical support for the above proposition has been obtained by Lott and Lott (1961) and Moran (1966). In both of these studies it was found that persons who expressed liking for each other communicated more than persons who were strangers or persons who did not work together well. In his discussion of group cohesiveness and quantity of interaction, Shaw (1971) concludes that cohesiveness and amount of verbal interaction are positively related.

**THEOREM 6:** *Amount of communication and similarity are positively related.*

Data supportive of Theorem 6 have been presented by Schachter (1959). Following from Festinger's (1954) social comparison theory, Schachter found that persons preferred to affiliate with similar others. While Theorem 6 would seem to hold for initial interaction situations, there is some evidence that under certain conditions, dissimilarities between persons will produce increases in the amount of communication. Schachter (1951) found that the amount of communication directed toward a deviant in a group tended to increase through time. In highly cohesive groups to which the group task was highly relevant, the amount of communication directed toward the deviant tended to increase at first then to decrease. The discrepancy between these findings and the social comparison theory findings seems to involve the nature of the interaction situation. Schachter's (1951) deviation-rejection study involved a group of persons interacting for the purpose of producing solutions to a problem; i.e., the group was explicitly task oriented. By contrast, the findings related to social comparison theory seem to be more relevant to situations in which the "task" confronting the individual is one of establishing the appropriateness of his opinions and behavior. For purposes of the formulation, the relationship between amount of communication and similarity suggested by the data relevant to social comparison theory would seem to be most appropriate, since the present theory deals with initial interaction situations between strangers.

**THEOREM 7:** *Nonverbal affiliative expressiveness and intimacy level of communication content are positively related.*

**THEOREM 8:** *Nonverbal affiliative expressiveness and information seeking are inversely related.*

**THEOREM 9:** *Nonverbal affiliative expressiveness and reciprocity rate are inversely related.*

There is little, if any, direct or indirect empirical evidence bearing upon the above three theorems. Studies involving intimacy level of communication content, information seeking, and reciprocity rate have not related these variables to nonverbal indices of affiliative behavior. Thus, research is needed to determine whether empirical hypotheses derived from the above three theorems hold.

**THEOREM 10:** *Nonverbal affiliative expressiveness and liking are positively related.*

The previously cited Mehrabian factor analytic studies as well as the research in the area of visual interaction summarized by Exline (1971) tend to support the above theorem. Persons who are attracted to each other have higher levels of eye contact, greater numbers of head nods and hand gestures per unit of time, and more frequent displays of pleasant facial expressions than persons who dislike each other.

**THEOREM 11:** *Nonverbal affiliative expressiveness and similarity are positively related.*

We know of no studies which provide direct
support for Theorem 11, although it seems reasonable to assume that since liking and nonverbal affiliative expressiveness have been found to be positively related, similarity and nonverbal affiliative expressiveness should also be found to be positively related.

THEOREM 12: Intimacy level of communication content and information seeking are inversely related.

THEOREM 13: Intimacy level of communication content and reciprocity rate are inversely related.

There are no data which provide direct support for these two theorems. Altman and Taylor's (1973) social penetration theory and research suggest, however, that intimacy levels of communication increase through time, while information seeking attempts decrease. These tendencies lend some support to Theorem 12.

THEOREM 14: Intimacy level of communication content and liking are positively related.

One implication of Theorem 14 is that persons tend to disclose intimate information to persons they like and withhold intimate information from persons whom they do not like. In a review of self-disclosure literature relevant to this issue, Pearce and Sharp (1973) concluded that self-disclosure generally occurs within the context of positive relationships. However, these authors caution that there is some contradictory evidence which suggests that the relationship between disclosure and liking is probably a complex one.

THEOREM 15: Intimacy level of communication content and similarity are positively related.

THEOREM 16: Information seeking and reciprocity rate are positively related.

THEOREM 17: Information seeking and liking are negatively related.

THEOREM 18: Information seeking and similarity are negatively related.

There is no evidence that bears directly upon the above four theorems. However, since Theorems 17 and 18 appear to be non-commonsensical predictions, further comment is in order. First, Theorem 17 suggests that as liking increases in a relationship, the amount of information seeking behavior will decrease. One operational indicator of information seeking suggested earlier was the number of questions asked per unit of time. It would seem reasonable to suggest that as a relationship develops through time, there is less need for questions to be asked. Frankfurt's (1965) findings support this suggestion. As the relationship develops, persons are more willing to proffer information about themselves without specifically being asked for it. Thus, if positive affect does develop in a relationship through the reduction of uncertainty then the necessity for extensive interrogation would also tend to decrease, thus producing a negative relationship between information seeking and liking. In the case of Theorem 18, we have suggested that similarity tends to reduce uncertainty and that reductions of uncertainty obviate the necessity for extensive verbal interrogation. Thus, we would expect to find that similarity and information seeking are negatively related.

THEOREM 19: Reciprocity rate and liking are negatively related.

THEOREM 20: Reciprocity rate and similarity are negatively related.

THEOREM 21: Similarity and liking are positively related.

While there appears to be little evidence bearing on Theorems 19 and 20, there is an incredible amount of support for the similarity-attraction relationship. Byrne's (1971) research relevant to the attraction paradigm not only demonstrates that attitude similarity produces attraction, Byrne, Clore, and Worchel (1966) found that persons are more attracted to others who are perceived to be from economic backgrounds similar to their own. In addition, Duck (1973) has found that conceptual similarity is positively related to friendship formation. It should be kept in mind, however, that the present theory explains the above empiri-
cal findings by employing the uncertainty construct as a mediating variable. This implies that if the effects of uncertainty were statistically removed from the similarity-attraction relationship, the similarity-attraction relationship would weaken significantly.

BEYOND INITIAL INTERACTION

For the present time, we have elected to confine our theory to the initial stages of interaction between strangers. Obviously, a full blown theory of interaction development would have to stipulate broader boundary conditions than the present one. We feel that one critical construct which might be part of such an extension is frequency of contact. The reason for our view is simply that in all probability, persons who do not have frequent contact with each other become uncertain about each other; i.e., as the time between contacts increases, persons' opinions, beliefs, and behaviors can change due to the influence of other persons and events. When two persons face each other after a long period of separation, they may have to go through a certain amount of biographic-demographic scanning behavior in order to “update” their “knowledge” of each other. Thus, because of the possible strong link between contact frequency and uncertainty level, an extension of the present formulation would have to take into account this relationship.

In a broader social perspective, Toffler (1970) has suggested that the rate of social change in the United States is increasing. One ingredient in the accelerated rate of change is the high level of mobility experienced by both individuals and families. If the rate of social change is indeed increasing and persons are becoming more mobile, then the necessity for going through the process explicated by the present model increases. Persons who experience frequent moves and the necessity of making new friends must go through the uncertainty reduction process more frequently than less mobile persons. The crucial social question is whether there is an upper limit of uncertainty that the individual can tolerate. If there is, then it would seem imperative that techniques be developed to help highly mobile persons form stable relationships with others as quickly as possible. For example, perhaps information about new neighbors could be provided to a family about to move into a new neighborhood. Advanced information about neighbors might aid the new family in their adaptation to the new environment. While this process may seem “artificial” and not very “spontaneous,” it could help the highly mobile family anchor themselves more quickly in their new environment.

We believe that the present formulation serves to bring together a diverse body of findings as well as to generate predictions for future research. Some of the theorems generated by the model have already received strong empirical support while others have not been subjected to direct test. Obviously, there are other relevant constructs which might be explicitly incorporated into the model. Some of these constructs will no doubt be derived from the failure of the present model to predict particular relationships. Thus, our view is that the present formulation is a first effort. Hopefully, subsequent research and reformulation will result in a more general theory of the developmental aspects of interpersonal communication.

NOTES

1. The procedure for explicating the axioms and theorems of the present theory is taken from Blalock (1969). Blalock suggests that assumed causal relationships be stated as axioms and statements of covariation stated as theorems.

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