

Nonverbal Communication and Psychology: Past and Future

Marvin A. Hecht and Nalini Ambady ¹

In this article, we explore the relationship between the study of nonverbal communication and psychology. The study of nonverbal communication originated in the 1950's primarily as a cross-disciplinary effort on the part of psychiatrists, linguists, and anthropologists. This was followed in the 1960's and 1970's by an explosion of empirical research, books, and popular media attention. In the 1980's psychologists began to regularly incorporate nonverbal communication variables into new research. Attention to nonverbal cues waned, however, as the cognitive revolution gained momentum. In this decade, there is a resurgence of interest in nonverbal communication, particularly among those who study emotion, psychophysiology, and person perception. The future of nonverbal communication may lie where it started; as an interdisciplinary endeavor.

Psychology is defined as the scientific study of the mind and behavior (Gray, 1991). This includes how people think, communicate, and behave toward each other. The study of nonverbal communication includes communication that is effected by means other than words (Knapp & Hall, 1997) such as: posture, gesture, tone of voice, facial expression, touch, and personal space. It seems natural that nonverbal communication would be a topic of great interest and importance to psychologists. Yet the relationship between nonverbal communication research and mainstream psychology has varied greatly over the years. This article explores how the relationship between these fields has changed over time, and speculates on what might happen in the future. To some extent the history and nuances of psychology will be simplified. For the purposes of this discussion, it will not be assumed that nonverbal communication must be intentional in order to be considered communication.

1. Marvin A. Hecht (Ph.D, Boston College) is Assistant Professor in the Department of Psychology at Louisiana College, Pineville, LA 71359 (hecht@socpsych.lacollege.edu). He completed his post-doctoral work with the second author at Harvard University. His research interests include nonverbal communication, social interaction, gender, power, and personality. Nalini Ambady (Ph.D, Harvard University) is Assistant Professor in the Department of Psychology, Harvard University, 33 Kirkland St, Cambridge, MA 01238 (na@wjh.harvard.edu). Her research interests include the accuracy of social and personality judgments, cross-cultural communication, conflict resolution, interpersonal influence in dyadic relationships, and nonverbal communication. An initial version of this paper was presented at the annual meeting of the Eastern Communication Association, Baltimore, MD, May 1997. We would like to thank Marie Radford for extending an invitation to be a part of the conference and part of this symposium, as well as the anonymous reviewers who contributed to the development of this paper.

Antecedents of the Psychological Study of Nonverbal Communication

The father of modern psychology is generally seen as William James who, in 1890, published a book called the *Principles of Psychology* (James, 1890). It is interesting that this early textbook contained a great deal of theory about emotion that was not fully explored until much later (see Arkin, 1990). Instead, early work in experimental psychology explored such phenomena as object perception, the flow of consciousness, and learning processes. Some early thoughts about nonverbal communication also came from Charles Darwin who, in 1872, published *The Expression of the Emotions in Man and Animals* (Darwin, 1872). This was one of Darwin's less successful books in terms of its quality and ultimate impact on the field (Fridlund, 1994). Still, the ideas in this book regarding emotional expression and nonverbal behavior were intriguing and were not fully explored until many years later (see Ekman, 1973).

While the foundations for the study of nonverbal communication in psychology were laid in the late 1800s in James' and Darwin's work, these ideas remained dormant for some time while psychology became fascinated with behaviorism. Behaviorism, emphasizing the study of overt behavior and learning, became prominent in the 1920s through its proponents John B. Watson and then later in the 1940s and 1950s by B. F. Skinner. But behaviorism never touched on human nonverbal behavior, for two reasons. First it involved the study of behavior at a more general level of abstraction (actions, goals, and rewards) than the more molecular cues studies in nonverbal communication. Second, it was thought that the principles of learning and behavior were best examined in lower animals such as rats and pigeons, and studies of humans were relatively rare.

While psychologists were exploring behaviorist principles, the study of nonverbal communication was begun in 1955 by a group of interpersonal psychiatrists, structural linguists and anthropologists who met in Palo Alto to jointly analyze a film. The group included Adam Kendon, Albert Scheflen, and Ray Birdwhistell (Leeds-Hurwitz, 1987, as cited in Kendon, 1990). Their joint expertise led to an analytic method called context analysis, in which all observed behaviors are transcribed in excruciating detail onto a coding sheet that resembles a musical score. Context analysis was later used to study such events as the structure and sequence of human greetings, social behavior at an outdoor party, and the function of posture during family therapy.

A Time of Research

The mid-1960's saw an explosion of research in many areas of nonverbal communication. For instance, Argyle and Dean (1965) studied eye contact and

how it related to conversational distance. Exline and his colleagues examined patterns of looking while speaking and looking while listening (Exline, Gray, & Schuette, 1965). Hess produced several interesting studies on pupil dilation published in *Scientific American* (Hess, 1975). Sommer (1969) studied the environment and personal space. Rosenthal (1967) discovered that expectations made by teachers and researchers can influence their outcomes, and that subtle nonverbal cues may play an important role in this process. Mehrabian (1969) studied the nonverbal cues of liking and immediacy.

During this initial period of research there was a great deal of excitement regarding the power of nonverbal cues. Early empirical work was geared to making the argument that nonverbal behavior should not be ignored. Many studies were published which demonstrated that nonverbal communication affected people's reactions, since this was an important message in and of itself at the time. However in the rush to collect data, an important element had been left out. Theoretical models and/or integrative studies were relatively rare, leaving a large body of interesting but seemingly unrelated information.

By the 1970's a number of scholarly volumes in psychology appeared summarizing the growing body of research, such as Weitz's (1979) *Nonverbal Communication* and LaFrance & Mayo's (1978) *Moving Bodies*. The *Journal of Environmental Psychology and Nonverbal Behavior* (now *Journal of Nonverbal Behavior*) was also founded in 1978. At around the same time, the general public seemed to take a strong interest in nonverbal communication as well. Journalists wrote a number of popular books on nonverbal communication (Koivumaki, 1975). A report in the *New York Times* describing the work of the early pioneers evolved into a book (Davis, 1973). Other popular books included *Body Language* (Fast, 1970) which focused on how to use nonverbal communication to attract other people, and *How to Read a Person Like a Book* (Nierenberg & Calero, 1971) which examined nonverbal behavior in negotiation situations.

Ironically, while the popularity of these books did much to increase public awareness, they may have delayed the acceptance of the initial wave of nonverbal communication research for the rest of the psychological community. Popular books vastly oversimplified the research findings, going way beyond what could be accurately concluded (Koivumaki, 1975). This led to bogus statements and recommendations, such as the idea that people who fold their arms across their chest are closed-minded, or the idea that people who unzip their jackets are literally opening up (Nierenberg & Calero, 1971). Another false idea was that one can manipulate one's own body language to influence others to make others more attracted without their realizing it (Fast, 1970). Research since then has found that context matters a great deal when interpreting any one nonverbal gesture

(LaFrance & Mayo, 1978) and that consciously manipulating nonverbal cues can often backfire (Ekman, 1985).

In this time of heightened popularity of nonverbal communication, it became increasingly difficult to be considered a "serious" researcher while studying nonverbal communication. Another obstacle came soon afterwards: the cognitive revolution.

The Cognitive Revolution and its Impact

In the late 1970s and early 1980s, coinciding with the event of developments in computer and information processing technology, psychologists began to construct models of behavior using an information processing metaphor. The cognitive revolution affected all areas of psychology, not just the study of brain (Gardner, 1985). In 1980, the *Journal of Personality and Social Psychology* named a new section of its journal *Attitudes and Social Cognition*. A new journal, *Social Cognition*, was founded in 1982. The focus shifted from behavior to thoughts and internal processes. People were no longer seen as actively behaving or operating on their environment. Instead, they were viewed as epistemologists who actively constructed their environment, made attributions, and searched for causal relations (Ross & Nisbett, 1991).

Coinciding with this paradigm shift, for many areas of psychology there was a shift away from questions about when a particular phenomenon happened, to how and why it happened. For example, researchers studying helping behavior shifted away from studying various conditions under which people help (a when question) to studying what factors motivate helping, egoism or altruism (a why question). Attitude researchers turned away from studying the conditions necessary for holding a certain attitude to examining why attitudes are important in terms of the functions they serve. In methodological terms, there was a shift away from studying variables that moderated an effect to discovering the underlying mediating or causal variables (Baron & Kenny, 1986).

In the midst of this new emphasis on causes and processes, the emerging field of nonverbal communication was again dealt a setback. Questions of a causal nature require a theoretical model as a basis.

There were some theories in nonverbal communication, such as Argyle and Dean's (1965) intimacy equilibrium model, and Henley's (1977) theory that social power was the motivation underlying particular nonverbal behaviors. However, neither of these theories was able to serve as a comprehensive model for predicting or explaining nonverbal behavior. As a result, the study of nonverbal communication was swept aside as the cognitive revolution gained momentum.

Another reason that nonverbal communication may have been left out of the cognitive revolution was due to the notion that nonverbal communication is

relatively automatic, not requiring thought. It became difficult to tie a supposedly thoughtless process to a paradigm that was concerned primarily with thinking. The fact that certain nonverbal cues may stimulate thinking was not pursued in psychology either. While presently there is a renewed interest among cognitive psychologists toward examining unconscious and automatic processes (Cohen & Schooler, 1997; Uleman & Bargh, 1989) which bodes well for the study of nonverbal communication, at the time there did not seem to be a good fit between the fields.

The cognitive revolution continues today as it evolves in the form of sub-fields within separate disciplines in psychology (e.g., cognitive development, animal cognition, social cognition). Many jobs in social psychology are being re-configured as jobs in social cognition, and some universities (such as the Massachusetts Institute of Technology) have a department of cognitive science but no longer a psychology department. A number of psychologists who studied nonverbal communication full-time in the 1960s or 1970s have since shifted to focus more on social cognition in their research, or they have dropped their nonverbal communication research entirely. Thus the amount of research focusing exclusively on nonverbal communication has remained relatively flat since the 1970s. One consequence of this is that while the *Journal of Nonverbal Behavior* has been able to maintain its initial publication rate of four issues a year, it has not undergone a major expansion.

There is still cause for hope, however. In the remaining sections, reasons for optimism about the psychological study of nonverbal communication in the next millennium will be discussed.

The Future of Nonverbal Communication and Psychology

The first cause for optimism is that the pioneering work on nonverbal communication made it acceptable to include nonverbal variables in psychological study as a dependent or independent measure. For example, researchers who study topics such as empathy, expectancies, or deception now regularly examine nonverbal cues. Even areas of psychology that have traditionally not looked at nonverbal cues (e.g., the study of attitudes) now include nonverbal communication in their experiments (e.g., Hrubes, & Feldman, 1997; Marsh, Hart-O'Rourke, & Julka, 1997). Thus the number of nonverbal studies in premiere psychology journals is increasing (Hall, 1992). For example, recent studies in the *Journal of Personality and Social Psychology* include smiling and Olympic athletes (Fernández-Dols, & Ruiz-Belda, 1995), touching as a function of hierarchy (Hall & Veccia, 1990), and judged and behavioral coordination (Capella, 1997). Today many researchers are studying nonverbal communication

as one facet of a larger human dynamic, such as power, deception, anxiety, or prejudice. As a result of the increased recognition of nonverbal behavior, for the first time there is a chapter on nonverbal communication in the current edition of the *Handbook of Social Psychology* (DePaulo & Friedman, 1998).

It is also interesting to examine which journals are leading this trend. Certain psychological journals seem to include more nonverbal studies than others. To examine this trend, journal titles were analyzed and coded for the number of articles on nonverbal communication they contained. The journal titles were derived from an extensive literature review conducted as part of two large meta-analyses, one on gender differences in smiling (LaFrance, Hecht, & Noyes, 1994), and one on immediacy cues and liking (Tickle-Degnen, Hecht, Harrigan, Ambady, & Rosenthal, 1997). References were also included from a review of touching research by Stier & Hall (1984). Finally, every journal reference from the new chapter on nonverbal communication in the *Handbook of Social Psychology* (DePaulo & Friedman, 1998) was coded. This collection of citations, therefore, includes almost every aspect of nonverbal behavior, and while it is not a random sample, it does provide an approximate idea of which journals have the most nonverbal content. In the above meta-analyses and reviews, the search was not restricted to psychology journals, but included other fields such as communication and medicine.

Table 1 shows the journals listed in descending order in terms of frequency of nonverbal articles. Journals that were represented only once or twice are not listed. Overall, the table indicates that nonverbal communication is studied in a wide variety of fields, nationally as well as internationally. It was expected that the *Journal of Nonverbal Behavior* would be near the top (it is second) because by definition all studies have to do with some aspect of nonverbal communication. What is really striking is the number of nonverbal articles in the sample from the *Journal of Personality and Social Psychology*, widely considered to be the premiere journal in the field of social psychology. The number of articles from this monthly journal exceeds the *Journal of Nonverbal Behavior*, which is only published quarterly. Other psychology journals with frequent nonverbal studies are *Personality and Social Psychology Bulletin* (the next most prestigious journal in social psychology), *Journal of Counseling Psychology*, and several other developmental, gender, and personality related journals. In the field of communication, the journals that most frequently publish articles on nonverbal communication include *Human Communication Research* and *Communication Monographs*. On the whole, the table shows that there are a wide variety of journals that publish nonverbal articles. This was not the case in the early 1960s before the field became popular.

Table 1
Frequency of Nonverbal Articles in Selected Journals (Please Give Date Ranges)

Journal Name	Frequency
<i>Journal of Personality and Social Psychology</i>	137
<i>Journal of Nonverbal Behavior</i>	49
<i>Personality and Social Psychology Bulletin</i>	26
<i>Journal of Counseling Psychology</i>	26
<i>Child Development</i>	17
<i>Human Communication Research</i>	15
<i>Developmental Psychology</i>	13
<i>Journal of Personality</i>	12
<i>Sex Roles</i>	12
<i>Journal of Experimental Social Psychology</i>	11
<i>Journal of Consulting and Clinical Psychology</i>	9
<i>Journal of Social Psychology</i>	9
<i>Perceptual and Motor Skills</i>	9
<i>Communication Monographs</i>	8
<i>Journal of Applied Social Psychology</i>	8
<i>British Journal of Social and Clinical Psychology</i>	7
<i>Journal of Research in Personality</i>	7
<i>Psychiatry</i>	5
<i>European Journal of Social Psychology</i>	4
<i>Journal of Applied Psychology</i>	4
<i>Journal of Social and Personal Relationships</i>	4
<i>Psychological Reports</i>	4
<i>Representative Research in Social Psychology</i>	4
<i>Social Psychology Quarterly</i>	4
<i>International Journal of Psychology</i>	3
<i>Journal of Communication</i>	3
<i>Japanese Psychological Research</i>	3

The second cause for optimism is that in addition to the fact that nonverbal communication is being re-integrated into many areas of psychology, there has also been a re-emergence of certain fields that are inherently nonverbal in their focus: emotion, psychophysiology, and person perception. Each of these are discussed in turn.

First, research on emotion is becoming very popular. Attitudinal researchers and social cognitive psychologists now recognize that many thoughts are affect-laden, and therefore emotion is an important variable to study. Some eminent researchers who have been working in the emotion field for years have finally begun to be recognized. For example, Paul Ekman recently won a lifetime contribution award from the American Psychological Association. There have also been special issues on emotion in mainstream journals (e.g., Arkin, 1990) and tributes to Darwin (Ekman, 1973). There is an active journal entitled *Motivation and Emotion* that is well respected in the field of emotion, and the American

Psychological Association has announced a new journal entitled *Emotion*. Recent books and chapters on emotion also summarize work on emotional intelligence (Goleman, 1995; Mayer & Salovey, 1997) and emotional contagion (Hatfield, Cacioppo, & Rapson, 1994).

Another emerging field that employs nonverbal cues is the field of social psychophysiology (Blascovich, 1990; Cacioppo & Petty, 1983). A typical study examines how fine-grained physiological measures such as heart rate and skin conductance vary in different social situations. Part of the battery of physiological measures collected in a typical study include traditional nonverbal cues such as smiling and nodding. Other measures, such as facial EMG (Fridlund, 1991), lie at the boundary between "internal" physiological responses and "external" nonverbal cues. Social psychophysiology is also used to study interpersonal relationships, including patterns of negative affect reciprocity in marriage (Levenson, & Gottman, 1983) and how these patterns effect the likelihood of divorce (Markman, 1981).

Lastly, personality researchers, who study the accuracy of person perception, are increasingly looking to nonverbal cues as potential moderators of accuracy. In a typical study, participants observe another person for a short period of time, and then make ratings of that person (Kenny, 1994). The goal is to see whether naive judges can accurately evaluate the personality of another person under various conditions. Research has shown that people are indeed accurate at greater than chance levels at detecting other's thoughts and feelings (Ambady & Rosenthal, 1993; Borke & Liebler, 1992; Snodgrass, Hecht, Ploutz-Snyder, 1998). As part of this type of study, researchers often code specific nonverbal cues to examine what accounts for the accuracy. For example, in a study of teachers (Ambady & Rosenthal, 1993), it was found that one variable that was significantly predictive of positive teaching evaluations was frequent gesturing.

Some Reservations About the Future

While all of the recent attention on psychology and nonverbal communication seems encouraging, at the same time there are some aspects of the present resurgence that leave some reservations. First, as a consequence of the focus on integrating nonverbal behavior with the particular psychological dynamic being studied, the number of psychologists studying nonverbal communication as a topic on its own has decreased greatly since the 1970s. Today, very few psychologists focus exclusively on nonverbal communication. Most psychologists who study nonverbal communication today are known primarily as health psychologists, emotion researchers, gender researchers, personality psychologists, etc. It could be argued that nonverbal communication *should* only be studied within a

particular domain--but the splintering across domains may be holding back the development of an integrated theory of nonverbal communication.

Another potential problem with the re-emergence of nonverbal research in emotion and psychophysiology in particular has to do with some underlying assumptions of research on emotion. For example, emotion researchers examine nonverbal cues from the perspective that they represent external manifestations of people's internal affective state (Ekman, 1992). From this perspective, the function of smiling is to express pleasure or happiness. The contrasting perspective is that facial expressions stem from social and interpersonal needs, and evolved to serve more of an interpersonal communicative function than an expressive one (Fridlund, 1994). This debate has produced some of the most interesting and creative classic experiments in psychology to date. Two experiments, both published in the *Journal of Personality and Social Psychology*, are worth describing into more detail (Fridlund, 1991; Kraut & Johnston, 1979).

Kraut and Johnston (1979) wanted to test whether smiles were more associated with emotion or with sociality. They conducted their study at a local bowling alley. They reasoned that if the emotional hypothesis were true, then bowlers who get a strike should start smiling as they see the ball knocking over the pins. On the other hand, if the sociality hypothesis were true, then bowlers would not start smiling until they turned around to face their friends. One observer was stationed at the end of the bowling line inside the pin setting equipment, while another observer sat behind the pit containing the bowler's friends. The results showed strong support for the sociality hypothesis. Across 116 observations, bowlers smiled 36 times while facing their friends, and only 4 times while facing the pins (Kraut & Johnston, 1979). Smiling was also unrelated to performance. Only one of the 4 smiles was after a good score, even though bowlers rolled a total of 26 strikes or spares. Kraut and Johnston (1979) concluded that smiling is more of a social act than an emotional one. They also conducted several follow-up experiments by conducting naturalistic observations of groups of people at Cornell hockey games, and of passersby in downtown Ithaca. Results showed that smiling could be predicted better by the presence of other people than by factors such as whether the team was winning or whether it was a sunny day or not.

Fridlund (1991) also conducted a now classic experiment on the sociality of smiling. At the time, most previous research on emotion used a methodology whereby people were shown emotion-provoking films while alone in a room, based on the idea that the resulting expressions would be relatively pure and free of external and social influences. Fridlund set up four experimental conditions which varied in their sociality. In all conditions, the participant watched a film designed to elicit pleasant feelings (puppies, babies, and sea otters playing, as well as a Steve Martin comedy sketch from *Saturday Night Live*). In the first, non-social condition, participants watched the film alone in a room (similar to

other emotion experiments). In another condition, participants watched the same film while a friend they had brought with them filled out some questionnaires in an adjacent room. In the third condition, the friend watched the same film as the participant, but in an adjacent room. Finally, in the most social condition, the friend watched the film in the same room with the participant. This was the only condition where the friends were actually together in the same room and was considered the most social condition.

The results of this study are fascinating. Fridlund (1991) found that smiling (as measured by Facial EMG) increased linearly as the sociality of the situation increased. That is, even though in three of the conditions, participants were actually alone, their level of smiling corresponded to the "psychological closeness" of their friend. Participants smiled more when their friend was filling out questionnaires than when no friend was present, and they smiled even more when they thought their friend was watching the same film next door. Participants smiled the most when the friend was actually in the same room with them. Moreover, this increased smiling was not due to happiness, which remained constant across the four conditions. Fridlund concluded that people smile readily in response to the presence of real or imagined others, and that even solitary facial behavior is not necessarily a result of emotion alone.

Fridlund's study did not distinguish between genuine and non-genuine smiles. Elsewhere, Ekman (1992) has demonstrated that smiles of genuine enjoyment involve not only the muscle which pulls the lip corners upward (*zygomaticus major*) but also the muscle circumferencing the eyes (*orbicularis ocularis*), producing crow-feet wrinkles at its the outer edges. Had Fridlund measured the orbicularis ocularis muscle as well, he might have found that genuine smiles were related to happiness. Perhaps it was primarily the non-genuine smiles then that varied with the sociality of the situation.

Other experiments will no doubt attempt to further delineate emotional and social motivations for nonverbal behavior. In the mean time, more experiments are needed which focus not just on sociality in general, but on particular social roles and relationships. For example, Hecht & LaFrance (1988) examined how being in a powerful role may give one the license to smile when happy or not smile if one does not feel happy. Psychiatrist Albert Schefflen also considered nonverbal cues important in social interaction, but many of these ideas remain empirically untested. For example, while Schefflen's work on postural mirroring and rapport (Schefflen, 1964) has been widely explored in the last 30 years (LaFrance, 1985; Capella, 1997; Bernieri & Rosenthal, 1991), his ideas about the role of nonverbal signals in initiating courtship (Schefflen, 1967) and in maintaining the social order (Schefflen, 1972) have been left relatively unexplored.

Further, despite the recent advances in nonverbal communication research, most introductory psychology textbooks ignore nonverbal communication. Some

texts include a small section or box on nonverbal communication, but the placement seems to be haphazard--sometimes it appears in the emotion section (e.g., Hockenbury & Hockenbury, 1997), the social behavior section (e.g., Gleitman, 1996), the language section (e.g., Bernstein, Clarke-Stewart, Roy, & Wickens, 1997), or some other section.

Concluding Thoughts

In summary, it appears that the link between psychology and nonverbal communication has varied greatly over time. Currently, there is a resurgence of interest, and major journals are publishing nonverbal communication research by psychologists. However, only time will tell if this new interest continues, and whether both intrapersonal (emotional) and interpersonal (social) aspects of nonverbal communication will be studied. There is also an urgent need for more theoretical integration in the field. There is still no generally accepted theoretical model for explaining or predicting nonverbal communication. Psychologists sometimes look to Brunswick's (1956) lens model of interpersonal perception, but this model is not limited to nonverbal communication. Patterson's (1983) functional analysis was able to integrate a large number of nonverbal studies post hoc, but this model is not currently being used as a predictive tool.

As a whole, psychologists have not written many of textbooks on nonverbal communication. With some exceptions (Knapp & Hall, 1997; LaFrance & Mayo, 1978), the majority of textbooks are written exclusively by communication scholars (see, Burgoon, Buller, & Woodall, 1996; Hickson & Stacks, 1993; Leathers, 1996; Malandro, Barker, & Barker, 1989; Richmond, McCroskey, & Payne, 1995). Ironically, it may be that the future of nonverbal communication lies in the same arena as it started: as an interdisciplinary endeavor. Resources may need to be consolidated more to keep the field active and moving ahead; indeed this is a major reason for choosing to include this paper as part of this symposium--to promote cross-fertilization between fields. The previous review of publications indicates that articles about nonverbal communication appear regularly in both psychological and communication journals. Yet, for the most part, academics from both fields read and publish almost exclusively within their own discipline, leading the creation of parallel but non-overlapping tracks of research (Hall, personal communication, 1992). Psychologists may want to publish in *Human Communication Research*, and communication scholars may want to publish in the *Journal of Personality and Social Psychology*. To a small extent, this has already been happening (e.g., Cappella, 1997) but probably not at the level that one might expect given the similarity of overlap that exist between the two fields.

Being aware of each other's fields may also help to integrate theoretical findings. It would be futile in this short space to attempt to integrate psychological and communication theories, but a recent study may represent a step in the right direction. Manusov (1992) published a paper in *Communication Quarterly* which examined nonverbal synchrony and attributions, the latter being a topic of interest to social cognitive psychologists. Manusov (1992) had a confederate mimic a participant's posture during a social interaction, to evaluate whether this would increase liking, and in general it did. But then Manusov went a step further and examined the attributions participants made. If participants assumed that the mimicry was somewhat intentional, they mostly regarded the partner favorably and the synchrony as meaningful, but if it was seen as completely deliberate then participants experienced a negative reaction toward the confederate, claiming to be manipulated. This experiment is significant because it attempts to relate the nonverbal synchrony literature to social cognition.

In addition to reading and publishing in each other's journals, it may be useful to join the various professional organizations. For psychologists, the two main ones are the American Psychological Association (<http://www.apa.org>), and the American Psychological Society (<http://www.psychologicalscience.org>). The former is somewhat more clinically oriented while the latter is more geared to research. Organizations at the regional level include the Eastern, Midwestern, Southeastern, Southwestern, and Western Psychological Associations, as well as the New England Psychological Association and the Rocky Mountain Psychological Association. In communication, the major organizations include the International Communication Association and the National Communication Association. Regional associations include the Eastern and Western Communication Associations, and the Central States, Western States, and Southern States Communication Associations.

By saying that more interaction is needed is not to imply that psychologists and communication scholars don't have slightly different and unique approaches. Psychologists sometimes accuse communication scholars of not having enough theory. However, too often psychologists do not hold their theories lightly enough (Rosnow & Rosenthal, 1997), trying too hard to shoehorn their data to fit the mold of a particular theory. Psychologists tend to emphasize quantitative studies over qualitative studies but this too may be changing. Researchers in both fields need to recognize their differences and to realize that approaches can be complementary. There is too much work left to do in nonverbal communication for psychologists and communication scholars not to work together jointly.

References

- Ambady, N., & Rosenthal, R. (1993). Half a minute: Predicting teacher evaluations from thin slices of nonverbal behavior and physical attractiveness. *Journal of Personality and Social Psychology*, 64, 431-441.
- Arkin, R. M. (Ed.). (1990). Centennial celebration of principles of psychology [Special Issue]. *Personality and Social Psychology Bulletin*, 16(4).
- Argyle, M., & Dean, J. (1965). Eye contact, distance, and affiliation. *Sociometry*, 28, 289-304.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.
- Blascovich, J. (1990). Using electrodermal and cardiovascular measures of arousal in social psychological research. In C. Hendrick & M. S. Clark (Eds.), *Research methods in personality and social psychology* (pp.45-73). Newbury Park: Sage.
- Bernieri, F. & Rosenthal, R. (1991). Interpersonal coordination: Behavior matching and interactional synchrony. In R. S. Feldman & B. Rime (Eds.), *Fundamentals of nonverbal behavior* (pp. 401-432). Cambridge: Cambridge University Press.
- Bernstein, D. A., Clarke-Stewart, A., Roy, E. J., & Wickens, C. D. (1997). *Psychology* (4th ed.). Boston, MA: Houghton Mifflin.
- Borkenau, P., & Liebler, A. (1992). Trait inferences: Sources of validity at zero acquaintance. *Journal of Personality and Social Psychology*, 62, 645-657
- Brunswick, E. (1956). *Perception and the representative design of psychological experiments* (2nd.ed.). Berkeley, CA: University of California Press.
- Burgoon, J. D., Buller, D. B., & Woodall, W. G. (1996). *Nonverbal communication: The unspoken dialogue* (2nd ed.). New York, NY: Harper & Row.
- Cacioppo, J. T., & Petty, R. E. (1983). (Eds.). *Social psychophysiology: A sourcebook*. New York, NY: Guilford.
- Capella, J. N. (1997). Behavioral and judged coordination in adult informal social interactions: Vocal and kinesic indicators. *Journal of Personality and Social Psychology*, 72, 119-131.
- Cohen, J. D., & Schooler, J. W. (1997). *Scientific approaches to consciousness*. Mahwah, NJ: Erlbaum.
- Darwin, C. (1872). *The expression of the emotions in man and animals*. London, England: John Murray.
- Davis, F. (1973). *Inside intuition: What we know about non-verbal communication*. New York, NY: McGraw-Hill.
- DePaulo, B. M., & Friedman, H. S. (1998). Nonverbal communication. In D. T Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed, Vol. 2, pp. 3-40). New York, NY: McGraw Hill.
- Ekman, P. (1973). (Ed.). *Darwin and facial expression: A century of research in review*. New York, NY: Academic Press.
- Ekman, P. (1985). *Telling Lies*. New York, NY: Norton.
- Ekman, P. (1992). Facial expressions of emotions: New findings, new questions. *Psychological Science*, 3, 34-38.
- Exline, R. V., Gray, D., & Schuette, D. (1965). Visual behavior in a dyad as affected by interview content and sex of respondent. *Journal of Personality and Social Psychology*, 1, 201-209.
- Fast, J. (1970). *Body language*. New York, NY: M. Evans.
- Fernández-Dols, J.-M., & Ruiz-Belda, M.-A. (1995). Are smiles a sign of happiness? Gold medal winners at the Olympic games. *Journal of Personality and Social Psychology*, 69, 1113-1119.

- Fridlund, A. J. (1994). *Human facial expression: An evolutionary view*. San Diego, CA: Academic Press.
- Fridlund, A. J. (1991). Sociality of solitary smiling: Potentiation by an implicit audience. *Journal of Personality and Social Psychology*, 60, 229-240.
- Gardner, H. (1985). *The mind's new science: A history of the cognitive revolution*. New York, NY: Basic Books.
- Gleitman, H. (1996). *Basic psychology*. New York, NY: Norton.
- Goleman, D. P. (1997). *Emotional intelligence*. New York, NY: Bantam.
- Gray, P. (1991). *Psychology*. New York, NY: Worth.
- Hall, J. A. (1992). A note from the new editor. *Journal of Nonverbal Behavior*, 16, 3-4.
- Hall, J. A., & Vecchia, E. M. (1990). More "touching" observations: New insights on men, women, and interpersonal touch. *Journal of Personality and Social Psychology*, 59, 1155-1162.
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. Cambridge, England: Cambridge University Press.
- Henley, N. M. (1977). *Body politics*. Englewood Cliffs, NJ: Prentice Hall.
- Hess, E. H. (1975). The role of pupil size in communication. *Scientific American*, 233, 110-119.
- Hickson, M. L., III, & Stacks, D. W. (1993). *Nonverbal communication: Studies and applications* (3rd ed.). Madison, WI: Brown & Benchmark.
- Hockenbury, D. H., & Hockenbury, S. E. (1997). *Psychology*. New York, NY: Worth.
- Hrubes, D., & Feldman, R. S. (1997, May). *Nonverbal behavior influences inferences about attitude strength*. Paper presented at the annual conference of the American Psychological Association, Washington, D.C.
- James, W. (1890). *Principles of psychology*. New York, NY: H. Holt.
- Kendon, A. (1990). *Conducting interaction: Patterns of behavior in focused encounters*. New York, NY: Cambridge University Press.
- Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. New York, NY: Guilford.
- Knapp, M. L., & Hall, J. A. (1997). *Nonverbal communication in human interaction* (4th ed.). New York: Harcourt Brace.
- Koivumaki, J. H. (1975). "Body language taught here." *Journal of Communication*, 25, 26-30.
- Kraut, R. E., & Johnston, R. E. (1979). Social and emotional messages of smiling: An ethological approach. *Journal of Personality and Social Psychology*, 37, 1539-1553.
- LaFrance, M. (1985). Posture mirroring and intergroup orientation. *Personality and Social Psychology Bulletin*, 11, 207-218.
- LaFrance, M., Hecht, M. A., & Noyes, A. (1994, October). *Who's smiling now? A meta-analysis of sex differences in smiling*. Paper presented at the annual meeting of the Society for Experimental Social Psychology, Lake Tahoe, Nevada.
- LaFrance, M., & Mayo, C. (1978). *Moving Bodies: Nonverbal communication in social relationships*. Monterey, CA: Brooks/Cole.
- Leathers, D. G. (1996). *Successful nonverbal communication: Principles and applications*. Boston, MA: Allyn & Bacon.
- Leeds-Hurwitz, W. (1987). The social history of the natural history of an interview: A multidisciplinary investigation of social communication. *Research on Language and Social Interaction*, 20, 1-51.
- Levenson, R. W., & Gottman, J. M. (1983). Marital interaction: Physiological linkage and affective exchange. *Journal of Personality and Social Psychology*, 45, 587-597.
- Malandro, L. A., Barker, L. L., & Barker, D. A. (1989). *Nonverbal communication* (2nd. ed.). New York: McGraw Hill.
- Manusov, V. (1992). Mimicry or synchrony: The effects of intentionality attributions for nonverbal mirroring behavior. *Communication Quarterly*, 40, 69-83.

- Markman, H. J. (1981). Prediction of marital distress: A 5-year follow up. *Journal of Consulting and Clinical Psychology*, 49, 760-762.
- Marsh, K. L., Hart-O'Rourke, D. M., & Julka, D. L. (1997). The persuasive effects of verbal and nonverbal information in a context of value relevance. *Personality and Social Psychology Bulletin*, 23, 563-579.
- Mayer, J. D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implications* (p. 3-34). New York, NY: Basic Books.
- Mehrabian, A. (1969). Relationship of attitude to seated posture, orientation, and distance. *Journal of Consulting and Clinical Psychology*, 10, 26-30.
- Nierenberg, G. I. & Calero, H. H. (1971). *How to read a person like a book*. New York, NY: Hawthorn
- Patterson, (1983). *Nonverbal behavior: A functional perspective*. New York, NY: Springer.
- Richmond, V. P., McCroskey, J. C., & Payne S. K. (1995). *Nonverbal behavior in interpersonal relations* (3rd. ed.). Boston, MA: Allyn & Bacon.
- Ross, L. & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. New York, NY: McGraw Hill.
- Rosnow, R. & Rosenthal, R. (1997). *People studying people: Artifacts and ethics in behavioral research*. New York, NY: Freeman.
- Rosenthal, R. (1967). *Experimenter effects in behavioral research*. New York, NY: Appleton Century Crofts.
- Schefflen, A. E. (1964). The significance of posture in communication systems. *Psychiatry*, 27, 316 - 331.
- Sheflen, A. E. (1967). *Body language and the social order: Communication as behavioral control*. Englewood Cliffs, NJ: Prentice-Hall.
- Schefflen, A. E. (1972). Quasi-courtship behavior in psychotherapy. *Psychiatry*, 28, 245-257.
- Snodgrass, S. E., Hecht, M. A., & Ploutz-Snyder, R. (1998). Interpersonal sensitivity: Perceptivity or expressivity? *Journal of Personality and Social Psychology*, 74, 238-249.
- Sommer, R. (1969). *Personal space: The behavioral basis of design*. Englewood Cliffs, NJ: Prentice-Hall.
- Stier, D. S., & Hall, J. A. (1984). Gender differences in touch: An empirical and theoretical review. *Journal of Personality and Social Psychology*, 47, 440-459.
- Tickle-Degnen, L., Hecht, M. A., Harrigan, J. A., Ambady, N., & Rosenthal, R. (1997). *Nonverbal behavior as a determinant of favorableness of impressions formed: Eight meta-analyses*. Manuscript in preparation.
- Uleman, J. S., & Bargh, J. A. (Ed). (1989). *Unconscious processes*. New York, NY: Guilford.
- Weitz, S. (Ed). (1979). (2nd Ed.). *Nonverbal communication: Readings with commentary*. New York, NY: Oxford University Press.