Nonverbal behavior in clinician–patient interaction

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Abstract

Empirical studies on nonverbal communication in clinician–patient interaction are reviewed for both the psychotherapeutic and medical settings. Nonverbal behavior is considered both as the consequence of antecedent variables, such as individual or relationship characteristics, and as a predictor of clinical effectiveness and patient outcomes. The concept of rapport is considered in relation to nonverbal behavior, both theoretically and empirically. Also, the relevance of a patient’s nonverbal behavior to the diagnostic goals of the clinical visit is demonstrated by research on nonverbal cues to psychopathology, Type A/B personality, and pain. Although the topic of nonverbal behavior and clinician–patient interaction has had a promising start, much research is still needed, especially that which experimentally manipulates either antecedent variables or nonverbal behavior itself to demonstrate cause and effect relations.

Key words: Nonverbal behavior, Clinician–patient interaction

I do not like thee, Dr. Fell;
The reason why I cannot tell;
But this I know, and know full well,
I do not like thee, Doctor Fell!

_Mother Goose_

When this bit of doggerel applies to patients’ feelings about their physicians or psychotherapists, most likely it was less what the clinicians said and more how they said it that led to the unexplained affective state. Such dislike, furthermore, is likely to have consequences for the medical and/or psychotherapeutic outcome for the patient concerned, for the reputation of the clinician, and for the overall efficacy and costs of the healthcare system.

The purpose of this paper is to provide an overview of the role of nonverbal behavior in the clinician–patient interaction. By clinician–patient interaction we mean any professional contact between medical practitioners or psychotherapists and their patients. By nonverbal behavior (or communication) we mean facial expression, gaze, body movement and gesture, voice quality, and quasiverbal vocal behaviors such as interruptions, facilitators, hesitations, and speech errors. The importance of studying clinician–patient nonverbal communication derives from: (a) the rapidly accumulating research in nonclinical settings showing the importance of nonverbal behavior to the outcomes of a wide variety of interpersonal interactions and (b) the special features of the clinician–patient interaction.

These features include the fact that the outcome of clinician–patient interactions are often a matter of life or death, recovery or illness, happiness or misery. These outcomes are of great and immediate concern to us as patients, as clinicians, and as those close to patients or clinicians. Given the enormous costs of health care and the impact of these costs on the nation’s economy, healthcare outcomes have become everyone’s concern.

It has long been acknowledged that the communication between psychotherapists and patients is crucial to patient outcomes; indeed, communication is often assumed to be the very core or essence of psychotherapy. This understanding of the centrality of communication, with the corollary recognition of the importance of empirical research on communication processes, has come much more slowly to medicine. For many years, an obsession with expert knowledge...
and technology seemed to relegate mere human interactions to the sidelines. Interpersonal interaction was either an irrelevant distraction or was so easy to understand that special training and scientific study were not needed.

The situation in medicine has changed dramatically with the adoption of the biopsychosocial model (Engel, 1977), the accumulating empirical evidence that communication processes cannot be separated from the overall quality of care (Roter & Hall, 1992; Street & Wiemann, 1984), and a widespread belief in both lay and professional circles that the medical profession has a low regard for the personal side of health and healthcare. Now, medical educators are trying to teach young physicians that “the remarkable scientific advances in medicine have not changed the fact that physicians’ core clinical skills are interpersonal” (Novack, Volk, Drossman, & Lipkin, 1993, p. 2101).

In both psychotherapy and medicine, early researchers audiorecorded clinical interactions and then studied the transcripts produced from these recordings. This “dry record” led to a study of the words without music. In medicine, it is still much more common to study verbal content than nonverbal behavior (Buller & Street, 1992; Roter, Hall, & Katz, 1988). As knowledge of nonverbal aspects of communication in nonclinical settings developed, it became clear that many of the same processes may be at work in clinical settings. Variables of likely relevance include architecture and interior design; physical attractiveness, clothing, and other aspects of the interactants’ appearance; and interpersonal distance, posture, gaze, facial expression, body movement, gesture, touch, and tone of voice (for an overview of research on nonverbal communication, see Knapp & Hall, 1992). Nonverbal communication is characterized by great subtlety, a fact that brings interesting methodological challenges, both because the phenomena are difficult to describe and because interactants are often unaware of their own and others’ nonverbal behavior. Nonverbal behavior provides a great deal of information very quickly, with obvious implications for its impact in human relations (Ambady & Rosenthal, 1993).

In 1979, Howard Friedman presented an analysis of why nonverbal communication is important in physician–patient interaction. Now, 15 years later, we find his analysis still to be timely and to be relevant with few adaptations to psychotherapy interactions as well. Friedman (1979) described the role of sensitivity and expressiveness in both the patient and the clinician. Patients are especially alert to the clinician’s nonverbal cues because patients are anxious and uncertain—they need clarification and insight regarding troubling physical or emotional experiences. Patients also look for cues beyond the manifest content of spoken words in hopes of discerning the clinician’s “real” feelings about them or evidence of factual information being withheld. Patients may also be especially attentive to the clinician’s cues because of their relative lack of power and control (see Fiske, 1993). Patients’ nonverbal expressions and behaviors are important because these reveal the emotional impact of disrupted health and because they are diagnostically useful to the clinician. Clinicians’ nonverbal behavior is important because it contributes greatly to rapport and trust, as well as to the likely mediation of expectancy and placebo effects.

The study of nonverbal communication is still greatly underdeveloped. In the present article we try to indicate gaps and future directions along with our summary of findings. We distinguish nonverbal behavior as: (a) predictable from antecedent variables (i.e., a dependent variable) versus (b) predictive of consequent variables (i.e., an independent variable). We do this separately for both the psychotherapeutic and the medical context. We then discuss the central construct of rapport. Rapport depends on both the verbal and nonverbal behavior stream occurring in the clinician–patient dyad (Hall, in press). We also provide illustrations of the relevance of patients’ nonverbal behavior to the diagnosis of psychopathology, Type A/B personality, and pain. The great majority of results reported here come from observational rather than experimental studies and are therefore correlational in nature. Because of this, conclusions about cause and effect can be tentative at best. The very important issue of experimental versus correlational research is discussed in the conclusion of this article.

Nonverbal Behavior: Antecedents and Outcomes

Psychotherapy

The importance of nonverbal behavior in psychotherapy and counseling settings has not been overlooked (Gladstein, 1974; Heimann & Heimann, 1972), although attention to this communication channel lags behind research on verbal behavior in psychotherapy. For example, Wiener, Budney, Wood, and Russell (1989) reviewed a selected portion of studies of nonverbal behavior in psychotherapy and concluded that there was a dearth of research studies using a hypothesis-testing approach. Educators in training programs have been strongly encouraged to include specific modules on nonverbal communication in the curriculum (Kagan & Krathwohl, 1967; Weiner, 1975). The vast majority of studies on nonverbal behavior have focused on cues that predict positive evaluations of therapists’ empathic qualities, that is, nonverbal cues that are believed to be essential in providing a beneficial therapeutic environment. In addition, anecdotal reports describe nonverbal behavior in psychotherapy (Scheflen, 1966). However, with respect to nonverbal behavior in the psychotherapy setting much remains unknown.

Antecedents of Nonverbal Behavior

In a few studies, investigators have examined the characteristics of therapists or counselors to determine how these characteristics predict therapeutic skill. Unfortunately, this work has been meager and results have not been promising. For example, researchers found that student evaluations of counselor expertness were negatively related to level
of counselor training and experience (Schmidt & Strong, 1970). The undergraduates, however, were not clients and tended to focus on the presentation style of the counselor, particularly counselors’ more global nonverbal behavior (i.e., appears attentive, had warm facial expression). Other investigators have focused on counselors’ skills in sending nonverbal messages (encoding skills) and sensitivity to client nonverbal behavior (decoding skills), asking whether greater sensitivity in encoding or decoding nonverbal messages leads to more favorable impressions. No evidence was found that either encoding or decoding skills were related to judges’ evaluations of counselor empathy, genuineness, or expertness (Hill, Siegelman, Gronsky, Sturniolo, & Fretz, 1981). Similarly, good and poor decoders, differentiated by scores on the Profile of Nonverbal Sensitivity (PONS test; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979), did not differ in ratings given them by clients or observers, nor in frequencies of nonverbal cues indicative of empathic qualities (Lee, Hallberg, Kocsis, & Haase, 1980). However, good decoders on the PONS test did receive higher supervisor’s ratings of effectiveness (Rosenthal et al., 1979). Finally, whereas counselor gender would be an obvious variable for consideration in studies of the counseling dyad, there are only a few studies in which gender has been studied. In their study on touch (described later), Alagna, Whitcher, Fisher, and Wicas (1979) found that the effect of touch was greater for opposite-gender dyads.

**Nonverbal Behavior as a Predictor**

Early studies on the therapeutic style of the provider concentrated on verbal behavior, and several measures were developed based on the content of the therapists’ verbalizations with respect to the degree of empathy, warmth, genuineness, and so forth (Carkhuff, 1969; Goodman, 1972; Strupp, 1960; Truax & Carkhuff, 1967; see reviews in Kiesler, 1973, and Matarazzo, 1978). During the last two decades attention has been directed toward the nonverbal component of the therapy encounter, with the major focus on the therapist, rather than the client, again emphasizing empathic qualities.

One clear limitation in the literature on therapists’ nonverbal behavior is the predominance of analogue studies (80% of studies reviewed) compared with studies of actual therapy consultations. This disadvantage restricts conclusions that can be drawn regarding the generalizability and validity of findings. Consistent evidence has been found in analogue research for several types of nonverbal behavior, and these results can provide the groundwork for investigations of actual therapy encounters. The summary of results provided here is based primarily on analogue studies, but where possible, findings from actual therapy sessions are included. Nearly all the studies on nonverbal behavior have been conducted in the counseling field. There are two typical paradigms used in either analogue or actual therapy studies. One is a natural history approach in which the frequencies of therapists’ movement and postures are related to assessments of therapists’ skills in being, for example, empathic, facilitative, warm, effective, and genuine. The other approach is more experimental and involves manipulation of specific nonverbal behaviors to determine their role in communicating positive qualities of the therapeutic interaction.

**General orientation to the client.** The orientation of interactants to each other provides both a general background in which to interpret specific nonverbal behaviors and a set of specific behaviors related to the degree of psychological closeness between interactants that can influence the interaction itself. Orientation includes the distance between interactants, the degree to which they face one another, and positions of arms and legs. In a psychotherapy setting the therapist can facilitate client engagement by offering an open, warm, trusting environment in which significant therapeutic work can be accomplished. Immediacy is a term often used to refer to behaviors that describe a positive, involved relation between interactants and includes such cues as close proximity, forward lean, open arm and leg postures, facing one another, eye contact, and postural relaxation (Andersen, 1985; Mehrabian, 1972). Many of these behaviors have quadratic relationships; for example, “too much” or “too little” distance between interactants can be regarded as equally negative. The definition of too much or too little cannot be delineated precisely because interactant variables such as age, gender, ethnicity, topic, and status greatly influence orientation cues, as well as many other nonverbal cues.

Several investigators have been concerned with the counselor’s overall orientation to the client. For example, both patient and control groups rated close compared with far interaction distances as indicative of the therapist’s greater liking for the client (Kelly, 1972). However, Dinges and Oetting (1972) showed that a very close distance produced higher anxiety ratings by judges, especially female judges. In studies involving systematic manipulations of behavior, researchers found that the most important cues for expressing empathy, genuineness, and respect were forward trunk lean, close distance, and eye contact (Haase & Tepper, 1972; Hermansson, Webster, & McFarland, 1988; Tepper & Haase, 1978).

There are only a few studies concerned with positions of counselors’ arms and legs. Not surprisingly, given the emphasis in the popular media, maintaining an open-arm posture rather than a closed one (folded arms) produced ratings of greater empathy and warmth (Smith-Hanen, 1977). Psychiatric nurses in actual therapeutic sessions who were judged as highly empathic exhibited significantly less leg movement (swinging crossed leg, shifting position) than nurses who were judged as less empathic (Hardin & Halaris, 1983). Frequency of movement also seems to be a critical variable influencing evaluations of counselors. More active counselors were judged as more warm, energetic, trustworthy, responsive, and agreeable (Fretz, Corn, & Tuemmler,
Therapists generally moderate their behavior on the basis of the type of client. Therapists exhibited different frequencies of certain nonverbal behaviors when interacting with psychiatric patients versus controls, that is, increased smiling, head orientation, hand tapping, and foot movements (Fairbanks, McGuire, & Harris, 1982). Finally, with respect to positioning and movement in the counseling setting, positive associations have been reported between empathic qualities and interactional congruence (postural sharing between client and therapist) (Charny, 1966; Maurer & Tindall, 1983; Trout & Rosenfeld, 1980).

On the basis of these studies, we would expect that the most beneficial therapist-to-client orientation behaviors include maintaining a distance of approximately 4 ft, forward lean, open-arm posture with moderate arm movement (e.g., hand gestures), less leg movement, and a high degree of postural congruence between therapist and client.

Specific nonverbal indices of empathic qualities. Investigators have examined the impact of specific behaviors on judges' impressions of counselor empathy and effectiveness. Nonverbal behaviors generally interpreted as indicating positive affect (smiling and head nodding) resulted in higher ratings of counselor empathic qualities (D'Augelli, 1974; Fretz et al., 1979), as did eye contact (Haase & Tepper, 1972; Seay & Altekruse, 1979; Tepper & Haase, 1978; Tipton & Rymer, 1978), and hand gestures associated with speech (Siegel & Sell, 1978). These same affiliative behaviors (nodding, smiling, eye contact) also resulted in more positive evaluations of counselor attractiveness and persuasiveness (Claiborn, 1979; LaCrosse, 1975; Schmidt & Strong, 1971). Eye contact was shown to be positively related to ratings of counselor respect and genuineness (Kelly & True, 1980).

Empathic qualities are exhibited in more subtle cues as well. For example, using only photographs of therapists' faces while they interacted with actual clients, judges accurately evaluated therapist empathy, genuineness, and warmth (Shapiro, Foster, & Powell, 1968). Clients and counselors may use different cues to judge the value of the interaction. Counselor and client nonverbal behaviors were found to be correlated with measures of the degree of therapeutic work accomplished and the degree of support felt by clients (Hill & Stephany, 1990). Therapist nodding was associated with client feelings of support and accomplishment of therapeutic work, whereas therapists perceived more therapeutic work accomplished when clients' speech errors were greatest (Hill & Stephany, 1990).

With respect to physical contact, the predominant belief in psychotherapy practice and education is that therapist-client touching is considered taboo and often thought to be disruptive to the therapeutic process (Weiner, 1975; Wolberg, 1967). In an analogue and an experimental study, touch resulted in positive effects, although in a quasicoun-
that nonverbal cues (eye contact, gestures, forward lean, smiles) are more salient than verbal cues (for example, psychological jargon, interpretations, self-disclosure, and reflections).

To summarize, specific therapist nonverbal behaviors that may further the therapeutic process include a moderate amount of head nodding and smiling; frequent, but not staring, eye contact; active, but not extreme, facial responsiveness; and a warm, relaxed, interested vocal tone. Touching the client appears to have some benefit, provided the touching is brief and involves the client's more public body surfaces (hand, shoulder, upper back). With regard to touching, the client's gender, ethnicity, and age may significantly alter the interpretation of touching by the client.

In conclusion, our current knowledge of the effects of counselors' nonverbal behaviors or skills in enhancing the therapeutic relationship is far from complete. One of the most critical areas of missing information is the role of nonverbal behaviors in actual therapy settings. Granted, these are more difficult studies to conduct, but such studies will provide us with more definitive ideas about the effects of nonverbal behavior in a helping environment. Another gap is that we know considerably more about therapists' nonverbal behavior than we do about clients' behavior or the interaction of therapist and client nonverbal behaviors.

The Medical Setting

As stated earlier, the two-way flow of nonverbal cues between provider and patient is now recognized as highly important in medical training and medical practice (Lipkin, Quill, & Napodano, 1984; Novack et al., 1993; Roter & Hall, 1992; Simpson et al., 1991; Zinn, 1993). This recognition has also long existed in the nursing profession, which has traditionally believed that optimizing interpersonal relations and seeing to the patient's psychosocial health are integral to the role functions of the nurse (e.g., Blondis, 1977; Clement, 1987; Oliver & Redfern, 1991; Salyer & Stuart, 1985).

Medical educators are urging physicians to adopt the rapport- and empathy-building behaviors that have been identified as relevant in both psychotherapy and medical settings. These include attentive listening and not talking too much, avoiding excessive note-taking and chart reading, establishing eye contact, leaning forward, establishing an appropriate interpersonal distance, encouraging the patient to speak by using facilitators such as smiles, nods, and "uh-huh" responses, and showing affect. Educators also point to the clinicians' need to be good observers of the patient's nonverbal cues. Quill (1989), in an article on barriers to doctor-patient communication, identified "verbal–nonverbal mismatch"—discrepancy between the patient's words and nonverbal signals—and negative emotions in the patient as two barriers that the physician can overcome by careful observation of the patient followed by appropriate verbal and nonverbal responses.

Though interest in the topic of nonverbal behavior is high, the quantity of empirical research is still small. In a review of communication studies in medical practice, Roter, Hall, and Katz (1988) noted that among 61 studies that used live observation or electronic recordings of physician–patient dialogue, those that coded nonverbal cues were too few for inclusion in their meta-analytic summary (Hall, Roter, & Katz, 1988). In the years since the Roter and Hall reviews, not much has changed. Most studies of provider–patient communication are based on audiotapes that are analyzed for verbal behavior using a variety of coding strategies such as the Roter Interaction Analysis System (Roter, 1977), a content analysis system based on Bales' Interaction Process Analysis. Other criticisms of the existing literature include its generally atheoretical nature, its emphasis on observers' coding of the physician's behavior without adequate concern for the patient's reactions and interpretations, emphasis on first or single medical encounters, and lack of research on the two-way and contingent (i.e., sequential) nature of physician–patient interaction (Street, 1990). Another area of debate, although not one that focuses specifically on nonverbal behavior, concerns the merits of quantitative versus qualitative approaches (e.g., Heath, 1986; Mishler, 1984). The present review is based only on quantitative studies. In the following sections, we discuss nonverbal behavior both as a consequence of antecedent variables and as a predictor of other outcomes in physician–patient encounters.

Antecedents of Nonverbal Behavior

Role. Verbal interruptions between physician and patient are of considerable interest because of their possible relation to issues of power and dominance within the interaction (Henley, 1977). Research on the relation of physician and patient roles to interruptions is inconclusive thus far; West (1984) found that physicians interrupted patients more than vice versa; Irish and Hall (1994) found the opposite; and Street and Buller (1987) found no difference. Street and Buller (1987, 1988) also found that physicians exceeded patients on social touching, verbal facilitators such as "uh-huh," "mmmm," and "really," pauses during their own speech, and illustrative gestures, but used fewer adaptors (self- and object-touching) than patients. The temporal pattern of nonverbal actions also differed between physicians and patients; physicians were likely to groom themselves as they began a verbal interchange, whereas patients exhibited more hard-to-self touching when responding to physicians (Harrigan, 1985). The physician appeared to be more relaxed and controlling in the interaction, whereas the patient exhibited more signs of being distressed or ill at ease.

Correlations between physicians' and patients' nonverbal behaviors were observed in Street and Buller (1987, 1988), with positive correlations suggesting matching or reciprocity for most variables examined—for example, verbal interruptions, illustrative gestures, body orientation, and gazing
away. Evidence of reciprocity was also found in Hall, Roter, and Rand (1981), where judges’ ratings of electronically filtered speech samples (on scales such as anger and anxiety) were positively correlated between physician and patient. Little evidence emerged for reciprocity in analogous ratings of typed transcript, suggesting that physician–patient matching or reciprocation may be a largely nonverbal phenomenon.

Although such correlations suggest direct mutual influence, the exact causal patterns are not known. Contrary to the popular conception of medical visits as affectively neutral, they appear instead to be dynamic and affective on both sides. Most provocative is the possibility that the patient influences the physician as well as the physician influencing the patient. An obvious question concerns the impact of a cycle of nonverbal reciprocation on the quality of care; for example, does a patient who conveys irritation or emotional detachment through nonverbal cues produce a physician who is equally irritated or detached and who then cuts the visit short, fails to explain medication side effects, or reduces the patients’ motivation to comply with medical advice?

**Gender.** In West’s (1984) study of interruptions, there was an important qualification to the overall finding that physicians interrupted more than patients: for the few female-physician dyads in the sample, patients interrupted physicians more, which was interpreted as disrespect for female physicians. However, Irish and Hall (1994) found only qualified support for such an effect, and, moreover, they suggested alternative interpretations for interruptive behaviors (see later).

Gender has also been examined in relation to verbal facilitators, affect conveyed through filtered speech ratings, speech disfluencies, acoustic measurements, smiling, nodding, and touching. Harrigan, Gramata, Lucic, and Margolis (1989) found no significant physician sex differences in amplitude, pitch, speech rate, or disfluencies. In Hall, Irish, Roter, Ehrlich, and Miller (1994), ratings of filtered speech showed a number of effects, the most striking of which revealed an excess of unfriendliness, interest, anxiety, and boredom in the speech of female physicians addressing male patients, and an excess of boredom and dominance in the voices of the male patients in those interactions. Hall et al. discussed these effects in terms of role or expectation strains in interactions between female physicians and male patients. In that same study, female physicians were also found to use more verbal facilitators than male physicians, to smile more (highest with male patients), and to nod more (highest with female patients).

Other group differences. Shreve, Harrigan, Kues, and Kangas (1988) found that patients with “hidden” or secondary agendas were more likely to use hand-to-body touching both during the revelation of the secondary agenda and during the greeting phase of the visit. Hooper, Comstock, Goodwin, and Goodwin (1982) found that patients who were more well-dressed and neat received more “nonverbal attention” (gaze and body position) from physicians, whereas their age and ethnicity did not have an effect. This research fits with a small analogue literature on appearance variables: Hadjistavropoulos, Ross, and von Baeyer (1990) found that photos of more attractive patients were attributed lower pain and less negative affective experiences by physicians. Nordholm (1980) found that health professionals endorsed the same “physical attractiveness stereotype” about patients—attributing better overall qualities to more attractive individuals—that has been amply documented in nonclinical studies (see Knapp & Hall, 1992).

To summarize the evidence on antecedents of nonverbal behavior, the most numerous findings to date are for physician and patient gender. With the exception of Hall et al.’s (1994) findings for filtered speech ratings, these results tend to corroborate other studies that find female physicians to be more positive and/or responsive than male physicians in their verbal communications (e.g., Roter, Lipkin, & Korsgaard, 1991).

Findings for patient appearance are also promising and could provide important links to the large social psychological literature on physical attractiveness and social stigmas. Because nonclinical studies provide much evidence relating nonverbal behavior to affiliation and liking (e.g., Andersen, 1985), and because physicians’ liking of patients varies both between physicians and between patients within physicians (Hall, Epstein, DeCiantis, & McNeil, 1993), there are strong reasons to believe that nonverbal cues indicative of liking, attraction, interest, and approach play a crucial but as yet unappreciated role in the process of medical care. One possible direction for such an avenue of research is in the development of unobtrusive (nonverbal) indicators of patient and provider reactions and attitudes, which could be used as a complement to standard paper-and-pencil measures. For example, Hall, Irish, Roter, Ehrlich, and Miller (in press) found that, particularly among female patients, greater satisfaction appeared to be reflected in a more friendly and calm voice tone.

**Nonverbal Behavior as a Predictor**

Nonverbal communication during the medical encounter, and to a lesser extent physicians’ skills in nonverbal communication (assessed in a testing situation), have been related to several outcome variables, most commonly patients’ satisfaction with their care. Greater satisfaction has been associated with greater physician nonverbal interest, less time reading the patient’s chart, less touch by the physician, more physician immediacy (e.g., forward lean), more nods and gestures by physicians, and closer interpersonal distance with the physician (Bensing, 1991; Larsen & Smith, 1981; Roter, Hall, & Katz, 1987; Smith, Polis, & Hadac, 1981; Weinberger, Greene, & Mamlin, 1981). In addition, therapeutic qualities (warmth, interest, empathy) of physicians have been assessed on the basis of nonverbal behaviors displayed (Harrigan & Rosenthal, 1983). For example, physicians who directly faced their patients, engaged in a moderate level of eye contact, and maintained an arm posture indicative of a readiness to act were regarded as more empathic, interested, and warm (Harrigan, Oxman, &...
Rosenthal, 1985). Thus it appears that physician nonverbal cues associated with immediacy or positive involvement (touch being a possible exception) enhance the patient’s positive feelings about the visit.

For the most part, correlations between nonverbal behavior and subsequent ratings or outcomes have not been examined for moderating effects of other variables. As an exception, Hall et al. (in press) looked separately at all combinations of patient and physician gender and found that for dyads involving one or more males, more verbal interruptions (by either party) were a negative predictor of satisfaction, suggesting that interruptions may have signified dominance or competition; on the other hand, for female–female dyads the relation between interruptions (by either party) and satisfaction was significantly positive, suggesting that interruptions may be a sign of participation or enthusiasm. Whitcher and Fisher (1979) also looked separately at male and female patients when evaluating the effects of a touch intervention by nurses. In that study, female patients responded much more favorably than male patients, with the male and female results tending to go opposite each other.

The combination of cues in different channels mattered in the satisfaction study of Hall et al. (1981); patients were most satisfied when the physician used more positive words but more negative voice tone, suggesting that this combination conveyed simultaneous acceptance and concern. Consistent with this, when physicians’ voices were more anxious, alcoholic patients were more compliant in the study of Milmo, Rosenthal, Blane, Chafets, and Wolf (1967).

Physicians’ skills in nonverbal communication have been related to satisfaction, compliance, and physicians’ workload in the innovative research program of DiMatteo and colleagues (DiMatteo, Taranta, Friedman, & Prince, 1980; DiMatteo, Hays, & Prince, 1986). These researchers, using a standardized test of nonverbal decoding ability (the PONS test), found that physicians who were more accurate at judging interpersonal cues expressed by the body had more satisfied patients. They also found positive associations between physicians’ abilities to express nonverbal emotion cues in a posed task and patients’ satisfaction, patients’ success in keeping scheduled appointments, and the physicians’ workload (suggesting that physicians with good encoding skills may be more popular). It remains for future research to illuminate the processes by which physicians’ nonverbal decoding and encoding skills are translated into effective behaviors with patients during interpersonal interaction; a reasonable scenario is that good-decoding physicians use their heightened awareness of patients’ feelings and intentions to guide their own verbal and nonverbal responses, and that those physicians with better developed expression skills are best able to convey messages of empathy, warmth, concern, good cheer, supportiveness, or disapproval when appropriate. If the affectively neutral physician was ever an ideal, these results strongly indicate that it should not be. Relating to patients through expressive nonverbal cues appears to be an essential skill for the physician.

A final category of outcome is one with few studies but possibly far-reaching implications. Two studies have found that nonverbal behavior alone can influence judgments of clinical competence made by professional medical evaluators. In one of these, actors memorized the exact verbal responses of surgery students’ oral examinations and reenacted them, varying eye contact and rate of speech. These videotapes were then judged by a national panel of clinical surgery faculty representing 46 institutions. The nonverbal behavior manipulation made a significant difference in overall scores assigned to the examinations (Rowland-Morin, Burchard, Garb, & Coc, 1991). In the second study on this topic, brief excerpts of an actual patient–medical student interviews were rated for nonverbal behavior. These ratings were found to be significant predictors of the students’ overall grade on clinical competence given by their professors (Rosenblum et al., in press). The possible relevance of these findings for physician–patient relations, specifically attributions made by patients about physicians’ competence, is obvious. (For further discussion of the relation of taskrelevant and socioemotional behaviors in physician–patient relations, see Hall et al., 1988.)

The Construct of Rapport

The construct of rapport is valuable to the understanding of any interaction, but it is crucial to the understanding of clinician–patient interaction. In the following pages we deal with conceptual issues surrounding rapport and related concepts, and we summarize some empirical findings. However, our focus in this section will not be restricted exclusively to the clinical context. It will be useful to begin with some types of definitions of rapport.

Definitions

Three types of definitions of rapport should be distinguished: the sensitizing, the conceptual, and the operational.

Sensitizing Definitions

Sensitizing definitions are abstract definitions that point us in a general direction of meaning but lack conceptual clarity. Such definitions are useful for limiting the universe of discourse; for the construct of rapport a sensitizing definition might be “a good relationship.”

Conceptual Definitions

For many scholarly and scientific purposes, sensitizing definitions will not work for very long. We must become less vague in formulating our conceptual definitions. Conceptual definitions of rapport vary somewhat among researchers but the one we will use is that of Linda Tickle-Degnen (1989; Tickle-Degnen & Rosenthal, 1992). High levels of rapport are characterized by: (a) high levels of mutual attentiveness or involvement, (b) high levels of positivity or warmth, and (c) high levels of behavioral coordination. Behavioral coordination itself requires definition. Interactions are more be-
behaviorally coordinated as they become more patterned or synchronized in form and timing. Two major components of behavioral coordination are (a) "behavior matching" or similarity and (b) "interactional synchrony," which is characterized by interaction rhythm, simultaneous movement, and behavioral meshing (Bernieri, 1988; Bernieri & Rosenthal, 1991; Condon, 1982; Kendon, 1970).

Operational Definitions
Specific operational definitions of rapport may vary widely from study to study. Sometimes ratings by one or both participants serve as the operationalizations; sometimes ratings by outside observers are employed. Standardized instruments assessing moods or other states can also be employed (e.g., Barrett-Lennard, 1962; Truax & Carkhuff, 1967). None of these operationalizations is intrinsically better or worse than others, and it may often be desirable to employ several of them. One methodological issue should be noted, however. That issue has to do with the reliability of the operationalization. When a single participant (e.g., the patient) makes ratings there is nothing we can do to increase the reliability of the ratings—there is just one patient. However, when we employ external observers and the reliability of the ratings is in question, we can add observers to increase the reliability of the overall score on rapport. Increasing reliability typically increases the correlation of rapport with other variables.

Empathy
Though closely related to the concept of rapport, empathy is not quite the same thing. Empathy is usually defined conceptually as understanding another’s feelings and thoughts and, in addition, actually experiencing that other’s feelings and thoughts, at least to some degree (Harrigan & Rosenthal, 1986). Empathy is likely to be strongly correlated with rapport in the clinical context, but it differs on the dimension of mutuality. Rapport is a mutual construct; it is a description of an interaction that does not apply to clinician alone or to patient alone. Only dyads (or larger groups) can show rapport. Empathy, however, can be shown by just one of the participants. Because the empathic clinician is likely to be attentive to and positive toward the patient, behavior that will be reciprocated by the patient, there is likely to be a strong correlation between the empathy level of the clinician and the level of rapport of the dyad.

Positivity and Nonverbal Behavior

Some Meta-Analytic Results
A preliminary meta-analysis has been conducted that summarizes the relationship between specific nonverbal behaviors and positivity, one of the three characteristics of rapport (Tickle-Degnen, Rosenthal, & Harrigan, 1989), based on a wide range of settings, not only clinical. Interactional behaviors creating a more positive impression in the observer included smiling, head nodding, and forward lean, all with large effect sizes (median correlation of about .50), directed gazing and direct body orientation (median correlation of about .40), and posture mirroring and uncrossed posturing of the arms (median correlation of about .25). In general, the magnitudes of these relationships were substantially larger when the observer of the nonverbal behavior was an external observer rather than a participant observer. There was also a tendency for the magnitudes of these relationships to be higher for those studies showing greater ecological and internal validity.

Interactional Synchrony
Earlier we noted that behavioral coordination was one of three central criteria of rapport. Behavioral coordination itself was defined by two major components: (a) behavior matching and (b) interactional synchrony. Because behavior matching can be subsumed conceptually under interactional synchrony, it is the latter we describe here.

One feature of interactional synchrony is "interaction rhythm," a cycling of interaction tempos throughout the course of the interaction. This feature can be operationalized by having observers rate the degree of tempo similarity in the interaction, the degree to which the interactants appear to “march to the beat of the same drummer.” A second feature of interactional synchrony is "simultaneous movement," the co-occurrence of postures and movements. This feature can be operationalized by having observers rate the degree of movement that appears to begin or end at the same moment for both participants and/or the degree to which the same behavior occurs for both interactants. The third feature of interactional synchrony is "behavioral meshing," which can be operationalized by observers' ratings of the degree to which the interactants' behaviors are smooth and even, coordinated, and intertwining.

Interactional synchrony can be assessed by untrained observers from video clips ranging from a few seconds to a few minutes, making it an attractive, practical variable for use in the study of clinician–patient interaction (Ambady & Rosenthal, 1992; Koss & Rosenthal, 1994).

Interactional Synchrony and Positivity in the Doctor–Patient Interaction
In a study of physicians interacting with their patients, interactional synchrony was assessed separately from the positivity component of rapport (Koss & Rosenthal, 1994). Interactional synchrony was defined as the mean of ratings made by observers on the four variables of tempo similarity, simultaneous movement, posture mirroring, and coordination and smoothness. The mean of the six intercorrelations among these four variables was .82.

Positivity was defined as the mean of ratings made by observers on the 15 variables of harmonious, worthwhile, positive, friendly, cooperative, satisfying, involving, active, sensitive, focused, relaxed, not cold, not dull, not awkward, and not uncomfortably paced. The mean of the 105 intercorrelations among these 15 variables was .92.
Clearly, then, both the constructs of interactional synchrony and of positivity showed very high internal consistency among the variables that defined each of them. The critical question for the validity of both these constructs was whether they were in fact two constructs or whether interactional synchrony would be indistinguishable from positivity. To address that question the four variables defining interactional synchrony were correlated with the 15 variables defining positivity. The mean of the resulting 60 correlations was .57, very substantially lower than the within-construct intercorrelations that averaged about .90. Very similar results have also been obtained in research on nonclinical dyads by Bernieri, Davis, Rosenthal, and Knee (1994).

Given the ease with which both the constructs of positivity and of interactional synchrony can be operationalized by observers' ratings of very "thin slices" of interactional behavior, future investigators of clinician-patient interaction may well choose to employ both variables in their research.

Diagnostic Relevance of the Patient's Nonverbal Behavior: Three Illustrations

Most of the research reviewed thus far has emphasized the impact of clinicians' behavior on patients or observers. But, obviously, clinicians must read the patients' needs, emotions, and intentions—skills that the work of DiMatteo, reviewed earlier, strongly suggested are important for patients' welfare. Comparatively little research has looked at the impact of patients' behaviors on clinicians (Buller & Street, 1992; Street, 1990). However, studies on patients yield findings that are of great relevance. Three illustrations are offered here: clues to psychopathology, clues to the Type A/B behavior pattern, and clues to the experience of pain.

Psychopathology

Detecting nonverbal cues indicative of pathological states can greatly assist the practitioner in determining patient difficulties. Given the fact that 50% of primary care consultations involve treatment of psychosocial problems (Baker & Cassata, 1978) and the fact that physicians are often the first contact for patients suffering from difficulties requiring psychotherapy, awareness of nonverbal behavior associated with psychopathology is essential. In addition to diagnosis, other outcomes such as treatment choice, response, and effectiveness may often be determined by patient nonverbal behaviors. Our concerns in the present section are the implications of nonverbal behavior in the diagnosis of patient difficulties.

Nonverbal Behavior in Depression

Anyone who has observed a depressed individual is aware of the sad, downcast, and generally slowed-down behavior manifested in depressed states. Researchers have substantiated this characteristic pattern by showing evidence of decreased general movement, expressiveness, and interaction with others. In acute stages of depression, patients exhibit decreased speech, hand gestures, facial activity, and smiling (Buck, 1984; Ekman & Friesen, 1974; Ellgring, 1986; Fridlund, Ekman, & Oster, 1987; Waxer, 1976). There is less eye contact with others both when listening, where greater eye contact is expected, and when speaking, where decreased eye contact is expected (Hinchliffe, Lancashire, & Roberts, 1970; Rutter, 1973). Decreased verbal productivity and slow speech with delays in delivery and long silent pauses are not uncommon (Aronson & Weintraub, 1972; Pope, Blass, Siegman, & Raher, 1970), suggesting a low arousal or activation level. Depressed patients demonstrate significant impairment in displaying facial expressions, especially those involving happiness (Jaeger, Borod, & Peselow, 1986). As improvement occurs, there is an increase in many of these behaviors, most notably eye contact, smiling, general movement, and speech rate (Ekman & Friesen, 1974; Ellgring, 1986; Hinchliffe, Hooper, Roberts, & Vaughan, 1975). The depressed also show decrements in sensitivity to others' communication by failing to discriminate among facial expressions of emotion (Cooley & Nowicki, 1989) and exhibiting a negative bias when identifying emotions (Colussy & Zuroff, 1985; Gur et al., 1992) that parallels errors of logic described by Beck (Beck, Rush, Shaw, & Emery, 1979). The depressed may not always demonstrate a diminished sensitivity to others' communication, however. Bernieri and Gillis (1993) reported results indicating that depressed individuals were more accurate in judging the degree of rapport between two conversational interactants, and as theory of depression would suggest, the depressed focused significantly more often on the negative member of the pair. Finally, the impact of the depressed person's behavior on others cannot be overlooked. Infants of depressed mothers exhibited a depressed interaction style similar to that of their mothers (Field, 1984).

Nonverbal Behavior in Schizophrenia and Other Psychopathology

Nonverbal behaviors are important in other forms of psychopathology as well, although results are less clear than those for depression. Disruption of affect is a major source of difficulty in schizophrenia. Whereas clinical records abound with descriptions of schizophrenic patients' nonverbal behaviors (flat affect, grimacing, rigidity, inappropriate laughter), demonstrating these empirically is more difficult. A variety of abnormalities have been found: disturbances in speech-movement synchrony (Condon & Ogston, 1966), decreased rates of hand gestures (Ekman & Friesen, 1974), increased frequencies of continuous self-touching (i.e., hand-to-hand movements) (Grand, Freedman, Stein-gart, & Buchwald, 1975), less facial activity when speaking (Ellgring, 1986), and less partner-directed gaze (Rutter, 1976, 1977). Likewise, schizophrenic patients show decreased accuracy in decoding others' affect (Feinberg, Rifkin, Schaffer, & Walker, 1986; Zuroff & Colussy, 1986), as have other psychiatric patients (Rosenthal et al., 1979). These effects are not always found, however (Joseph,
Sturgeon, & Leff, 1992), and the critical variable seems to be the phase of schizophrenia or the overall length of hospitalizations, i.e., acute versus chronic (Morrison, Bellack, & Mueser, 1988).

Information regarding nonverbal behavior for other psychological disorders is less clearcut. Depending on the degree of anxiety, we may see pacing, hand-wringing, frequent posture shifts, decreased eye contact, higher pitch, and uncoordinated speech (Jurich & Jurich, 1974; Mahl, 1987; Scherer, 1988; Siegman, 1987; Wexler, 1977), but empirical studies of anxiety are sparse and not easily comparable. Nonverbal behavior idiosyncrasies for clients with medication use). Overall, the most typical nonverbal cues a patient has experienced dysfunction (e.g., hospitalization, those suffering from schizophrenia, and the primary factor consistent data with regard to nonverbal behavior patterns in sequences such as suicide can result. There seem to be less consistent across age, gender, and culture, given that depressive interactive style that parallels their general inward psychopathology, there seems to be a more consistent and coherent pattern indicative of depression than of schizophrenia patients and those with somatoform disorders). (Weissman, Leaf, Tischler, 1988) from which serious consequences such as suicide can result. There seem to be less consistent data with regard to nonverbal behavior patterns in those suffering from schizophrenia, and the primary factor seems to be the length of time for which the schizophrenic patient has experienced dysfunction (e.g., hospitalization, medication use). Overall, the most typical nonverbal cues displayed by schizophrenic patients are stereotypic and idiosyncratic behaviors (such as rocking or grimacing) and less interactive movement. Of particular interest with regard to therapeutic interventions for schizophrenic patients is their difficulty in appropriately decoding others’ affect. Finally, the area of nonverbal behaviors indicative of psychopathology is one in which much work remains to be done with respect to diagnosis (e.g., differentiating dementia from depression, or drug intoxication from anxiety states) and treatment (e.g., social skills training for depressive and schizophrenic patients and those with somatoform disorders).

**Type A/B Personality**

Personality appears to play a role in the development of coronary heart disease, or CHD. Most research in this area has been directed toward the Type A/B distinction that was first identified by cardiologists over 30 years ago (M. Friedman & Rosenman, 1959). In spite of some recent negative findings, meta-analysis reveals a credible relation between Type A/B and CHD (Booth-Kewley & Friedman, 1987).

Why is the Type A/B construct relevant to our interest in nonverbal communication and medical care? The answer is that preeminent among the qualities ascribed to Type A individuals is a distinctive nonverbal behavioral style. Although adjectives too numerous to name have been used to distinguish Type A from Type B individuals (Hall, H. Friedman, & Harris, 1986), a brief portrait would depict Type As as much more aggressive, hostile, and impatient than Type Bs. Specific qualities include vigilant, tense and/or rapid facial and body movements, explosive speech, short speech latencies, and nonverbally expressed hostility. So central are these qualities to the conception of the Type A individual that the standard diagnostic instrument, the Structured Interview, includes such expressions among its scoring criteria. Thus, engaging in certain nonverbal behaviors is likely to yield a Type A diagnosis.

Several lines of evidence convince us that nonverbal behavior indeed has a meaningful relationship to CHD risk. First, putting the Type A construct aside, several studies have found relations between nonverbal behavior and CHD or its precursors (reviewed in Hall et al., 1986). The most common association is for loud, rapid, or explosive speech, all of which can be construed as cues to the hostility that is now seen as the most important element in the Type A behavior pattern (H. Friedman & Booth-Kewley, 1987). Second, a meta-analysis revealed that many of the behaviors claimed in the literature were indeed related to Type A status, whether Type A classification was based on the Structured Interview, which includes nonverbal cues in its scoring, or paper-and-pencil self-report measures, which do not have this confound (Hall et al., 1986). Most highly related are fast and/or accelerated speech, uneven speech rate, short speech latencies, loud and/or explosive voice, uneven loudness, hard or staccato voice, body movements suggesting restlessness, and cues suggesting energy, hostility, and annoyance. However, nonverbal behavior is more notably related to A/B diagnoses based on the Structured Interview (Hall et al., 1986).

Research not in the Hall et al. (1986) meta-analysis sheds additional light on the nonverbal behavior of Type A individuals. Hughes et al. (1983) observed people while waiting for the Structured Interview, during the interview, and during a relaxation period afterwards. In all three time periods, those who were labeled Type A based on the interview showed more arm movement, and during the two noninterview segments, they sat still less and did more moving about and exploring. This fits with the early observations of M. Friedman and Rosenman that Type A patients wore down the upholstery fabric on the front edges of their chairs. Thus, some of the 'Type A' nonverbal mannerisms are detectable during minimally stressful experiences (and not only under challenge, as is sometimes said), a finding also of Hall et al.'s (1986) meta-analysis.
Another study is notable because it applied an anatomically based facial coding system (the Facial Action Coding System, or FACS; Ekman & Friesen, 1978) along with more standard vocal measures in analyzing tapes of the Structured Interview (Chesney, Ekman, Friesen, Black, & Hecker, 1990). These investigators found that Type As used more glare and disgust facial expressions and had more syllabic emphasis, faster speech, and more loud and hostile voices. Because facial expressions are especially salient in interpersonal interaction, these results could prove especially useful in clinical practice.

Finally, H. Friedman and his colleagues (Friedman, Hall, & Harris, 1985; Friedman & Booth-Kewley, 1987) have suggested another important theoretical distinction involving Type As and Type Bs. In two studies, one using men with varying degrees of arterial dysfunction and one using men who had or had not experienced a heart attack, the investigators found statistical interactions between Type A status and expressive style in predicting health risk. The greatest health risk was not among Type As overall, but rather Type As who scored low on a self-report measure of expressivity; Type As who scored high on this measure, called "charismatic," were psychologically healthy and not at risk for CHD. Equally at risk was a group of Type Bs who were tense, repressed, and psychologically less healthy and who paradoxically scored high on the expressivity measure. Thus, some so-called Type Bs who are externally placid may in fact be at risk because of suppressed emotion. This is entirely possible considering that the Type A label is very imperfectly related to actual CHD risk, with many As never developing heart disease and some Bs doing so. Friedman's findings that expressive style is a significant moderator of the Type A/B–CHD relation may help to focus attention on the truly at-risk individuals.

Pain

The expression of pain is all too common in clinical practice. For thousands of years, no doubt, an important part of clinical skill has involved sensitivity to pain cues emitted by patients. Clinicians appraise physical pain as an aspect of the patient's experience and symptomatology; they also inevitably cause pain, both physical and psychological, in the process of delivering therapies and bad news to patients.

In the past decade, knowledge of the nonverbal, especially facial, expression of pain has become well developed. Much of this research uses standard laboratory procedures for producing pain (as by electric shock or cold pressor tasks) and uses both pain patients and pain-free individuals as research subjects. The Facial Action Coding System (Ekman & Friesen, 1978) has been used successfully to describe movements of the face associated with pain.

A number of findings are likely to be relevant in clinical practice. Naive observers' ratings of pain are significantly related to self-ratings of pain made by patients experiencing authentic pain (Poole & Craig, 1992; Prkachin, 1992b). Observers can also discriminate between actual and posed pain (Prkachin, 1992b), which could be relevant to the problem of identifying patients making false claims about pain. However, when patients in a back pain clinic were subjected to painful manipulations of their legs and were told to exaggerate their expressions of pain, observers were easily fooled into rating the patients' pain as correspondingly greater (Poole & Craig, 1992). Also in that study, when the patients were told to suppress signs of pain, they succeeded only partially: observers' pain ratings were lower for suppressed pain than for freely expressed actual pain, but still higher than a baseline condition. Thus, even a determined effort may not completely eliminate pain cues.

A social learning perspective emphasizes secondary rewards gained from the expression of pain. As illustration, a comparison between patients with chronic and acute temporomandibular disorder (jaw movement pain) found no difference in self-ratings of pain. However, the chronic group showed significantly more facial indications of pain (based on the FACS) both when alone and when experiencing painful procedures (palpation of jaw muscle and cold pressor pain) (LeResche, Dworkin, Wilson, & Ehrlich, 1992). A finding such as this reveals the complexity of directly inferring a level of experienced pain from overt expressions.

Facial action coding reveals similarities, as well as differences, across types of pain. Using the FACS, Patrick, Craig, and Prkachin (1986) found that electric shocks produced cheek raise, upper lip raise, and eyes closed/blink responses, as had cold pressor pain in previous research. However, cold pressor pain also produced jaw drop, lips part, and lip corner pull responses, differences that could be related to the slow versus fast onset of the pain sensations in these two paradigms. The core pattern of pain movements, evident across cold pressor, electric shock, pressure, and muscle ischemia, seems to be based on the corrugator, obicularis oculi, and levator muscles. The net effect is to lower the brows, narrow the eye openings, raise the cheeks, raise the upper lip, and wrinkle the nose (Prkachin, 1992a).

Finally, an older research tradition has documented differences between ethnic/cultural groups in attitudes about pain and in pain expressions (see Chapman, 1984; Lipton & Marbach, 1984). Though this research has not focused specifically on nonverbal behavior, the findings are relevant. As an example, Jewish and Italian-American patients were highly emotive of pain, whereas Irish-Americans were more stoical in the classic study of Zborowski (1952). Clinicians should therefore be sensitive to cultural norms when appraising nonverbal cues to pain.

Conclusions

In this paper we have seen that, after long neglect, there has been an upsurge of research interest in nonverbal communication in general and in the clinician–patient interaction in particular. As in nonclinical settings, there is evidence that nonverbal behavior is influenced by the background characteristics of the participants. Also as well documented out-
side of clinical encounters, the clinician's nonverbal behavior contributes to the affective climate of the encounter. Greater involvement and immediacy are associated positively with either observers' or patients' reports of rapport, empathy, and satisfaction. Research designed to examine the moderating effects of patient and physician characteristics on such correlations is crucial, yet is still lacking for the most part. Such research would address whether different groups (based, for example, on age, gender, or ethnicity) respond similarly to the behavior of their psychotherapists and physicians.

Evidence of mutual influence in the nonverbal realm suggests the existence of positive and negative spirals in the emotional tone of a clinical visit. Relevant here is the reciprocation of overall regard found by Hall, Epstein, DeCian- tis, and McNeil (1993), who asked physicians how much they liked individual patients. More satisfied patients were liked more by their physicians and vice versa. We suspect that in short-term or intermittent relationships, such as those typically found between clinicians and patients, overall liking is strongly influenced by nonverbal cues. In our opinion, the purely affective side of clinicians' and patients' reactions to one another has been neglected compared to the examination of more task-relevant behaviors such as conveying information and asking questions.

Inevitably, considering the recency of attention to nonverbal communication in clinical settings, there are serious gaps. In the psychotherapy field, relatively little research has been conducted on real clinician-client interactions. In medicine, this is much less the case, but so few studies have measured nonverbal behavior that a definitive picture has yet to emerge. Moreover, patient outcomes other than satisfaction have rarely been examined in relation to nonverbal communication. Finally, in both psychotherapy and medicine, almost all studies are observational in nature (i.e., not involving experimental manipulation of independent variables), leaving enormous ambiguity about cause and effect.

As research accumulates, what will be most needed, from both a scientific and an applied perspective, is a systematic effort to carry out meta-analyses on the role of nonverbal cues in interpersonal, especially clinical, interactions (cf. Ambady & Rosenthal, 1992; Hall et al., 1986; Hall et al., 1988; Roter et al., 1988; Tickle-Degnen et al., 1989).

The meta-analyses needed are of two types. In the first, nonverbal behavior in the clinical context is regarded as the dependent variable predicted from some antecedent variable (e.g., the age, sex, status, personality, or pathology of the interactants). In the second, nonverbal behavior is regarded as the independent variable from which various outcomes (e.g., patient health or patient satisfaction) can be predicted. For each of these types of meta-analysis, subanalyses should be conducted in which: (a) the independent variables have been observed but not manipulated and (b) the independent variables have been manipulated experimentally (though we acknowledge that studies of this type will not be numerous for some time to come). The results of these subanalyses can be compared meta-analytically to help us judge the degree to which our independent variables are in fact causal factors (Rosenthal, 1991). Until these meta-analyses have been conducted, we will not discover what we really do and do not know about nonverbal behavior as dependent and independent variables in clinical interactions.

The nonexperimental nature of most research to date should make for considerable clinical and scientific caution about the application of the results. Although certain clinician nonverbal behaviors are associated with better outcomes, this does not necessarily mean that clinical and medical students should be taught to behave as did the clinicians with better outcomes (e.g., smile more, nod more, lean forward more). Because the research findings will have come mainly from studies in which the nonverbal behaviors were not manipulated experimentally, these behaviors could as well have been caused by, as been the cause of, patients' improved state. Even when experimental manipulations have been employed, if they have been employed in a laboratory analogue context, they must be specifically examined in a field context to evaluate the external validity of the results. In the end, if we believe we have developed a useful program for training clinicians to behave in specific ways to bring about better results, the training program we have developed must itself be evaluated experimentally.

REFERENCES


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