

External Variable and Systems Approaches in Nonverbal Communication Studies: Comparisons

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Introduction

The interest in nonverbal behavior or communication is not new. It is traced back to the Ancient Rome where the rhetoricians like Quintilian and Cicero were concerned with gestures in relation to public speeches (Golden, Berquist, & Coleman, 1989). More recently but still long ago, so-called “elocutionists” in Britain were also concerned with how to effectively use bodily movement (what Ekman and Friesen called “illustrators”). However, these investigations were more speculative than systematic studies. Darwin’s *The expression of the emotions in man and animals* in 1872 is considered the first systematic analysis on now-called nonverbal behavior or communication.

Since Darwin’s publication on nonverbal behavior, a lot of systematic investigations on nonverbal behavior and communication started and were accumulated across disciplines, including psychology, psychiatry, sociology, anthropology, communication, and so on. The current specific areas of interest include: (a) paralanguage; (b) facial expression; (c) kinesics; (d) visual behavior; and (e) proxemics (Harper, Wiens, & Matarazzo; 1978).

Methodologically, the research on nonverbal behavior has long been dominated by one approach until recently – namely, scientific, quantitative, objective approach based on logical positivism, heavily borrowed from the natural scientific method. It has been and is still now a trend in human sciences.

However, just as natural scientists recognized shortcomings of the traditional scientific methodology and invented an alternative methodology, so did human scientists in general and nonverbal behavior investigators in particular during 1950’s and 1960’s. The alternative approach is currently called “systems approach,” which was first proposed by Bertalanffy (1968). In studies of nonverbal behavior, Birdwhistell, an anthropologist, and Scheflen, a psychiatrist, first collaborated on human nonverbal behavior based on systems theoretical logic. The traditional and the alternative approaches are the two major approaches in sciences, including natural, behavioral, and social sciences. It is also the case in communication studies in general and nonverbal communication studies in particular.

In this paper, I will examine and compare the traditional scientific approach, sometimes

called "external variable approach" in nonverbal communication studies, and the alternative "systems approach," frequently called "structural approach" as well, focusing more on the latter approach. First, I will briefly review the external variable approach. Second, I will turn my attention to the systems approach, including historical development of the approach in other disciplines and in nonverbal behavior studies. Finally, I will discuss several contrastive features between the two approaches toward a synthesis.

External Variable Approach

The term, "external variable approach," derives from researchers' tendencies to rely on (a) the identification of the quantifiable variable conceivably related to nonverbal behavior, which is also quantified, such as gender, personality, emotion, and so forth, and then (b) correlates nonverbal behavior with those variables statistically, mostly under laboratory circumstances, controlling for other effects.

This approach has been taken by mostly psychologists, experimental social psychologists, and biologists to some extent, and has dominated nonverbal behavior studies. When it comes to nonverbal communication research, the former two have played significant roles. Historically speaking, in psychology, psychologists adopted the methodology used in natural science, which had been believed the only way to be scientific (Schefflen, 1979). It is called "behaviorism" in psychology.

In this behaviorism tradition, everything is reduced into observable pieces, and explained in S-R, S-O-R, or action-reaction terms. Nonverbal behavior and communication in this approach has dealt with nonverbal behavior as an index or indicator of something else. Scherer and Ekman (1982) isolate three types of research. The first is what they call "externalization or expression traits and states," mostly done by psychologists. Here nonverbal behavior is considered as expression of (a) personality, (b) action tendencies, (c) emotion, and so on. Second, nonverbal behavior is treated as a cue of (a) person perception, (b) impression formation, (c) deception, (d) relationship formation, and so on. These works have been mostly done by social psychologists. Finally, nonverbal behavior is correlated with the intraindividual organization of action, including the execution of plans and strategies. Duncan and Fiske (1985) identify one more area of this tradition. It is the research that correlates one type of nonverbal behavior with other type of nonverbal behavior (e.g., correlation between rate of gazing and rate of smiling).

The first three categories (i.e., Scherer and Ekman's identification) are typical of this approach, that is, they deal with the relationship between behavior and communicative meaning, and outcome of such behavior, but not communication as a process. That is to say, using the logic of S-R, they are concerned with how each individual responds to or attributes certain nonverbal behaviors. The unit of analysis here is each individual, and the

concern is not with communication itself.

The last category is, however, concerned with communication or interaction to some extent. But it still deals with action-reaction relationship. In other words, each behavior is reduced into individuals' action and reaction: Sender A transmits a message through behavior to Receiver B, and Receiver sends another message through behavior in response to Sender A's behavior. The concern is who does some behavior to whom. That is to say, to reduce behavior into individuals terms (i.e., either sender or receiver).

To summarize, there are two important aspects of this approach. First, it started with the concern of individual behaviors, but not communication per se. Hence, Ekman and Friesen (1969), for example, try to categorize all behaviors into five classes. They deal with not only nonverbal behavior which has communicative functions, but also one without communicative functions, such as brushing teeth and driving a car and so forth. Second, the researchers on nonverbal communication who take this line of research strategy tend to conceive of communication as dividable into several components, especially into persons terms: sender and receiver. The unit of analysis in this model therefore becomes the individual (i.e., sender/encoder or receiver/decoder), rather than communication process as a whole.

The fact that this approach is primarily concern with the relationship between individuals and nonverbal behaviors and that the unit of analysis is the individual leads to excluding some behaviors from nonverbal communication. There are two major conceptualizations concerning relationship between communication and behavior. On one extreme, it is proposed that all behaviors that a receiver decodes is communication, which is called "receiver or decoder perspective." The phrase, "One cannot not communicate (Watzlawick, Beavin, & Jackson, 1967)," explicates this approach. On the other extreme, it is argued that nonverbal behaviors with intention become communication – "sender or encoder perspective." In sender perspective, intentionality or awareness of the sender is a criterion whether that behavior is communication or not. Psychologists and social psychologists tend to take "sender approach."

However, sender perspective does not take a receiver, an important component of communication as a process, into account. Burgoon(1994), a communication scholar, who takes this approach, proposes a compromise between the two extremes, which she labels "message perspective" and defines nonverbal communication as:

those behaviors other than words themselves that form a socially shared coding system; that is, they are typically sent with intent, typically interpreted as intentional, used with regularity among members of a speech community, and have consensually recognizable interpretations. (p.231)

This definition excludes several nonverbal behavior as not being communicative: (a) idiosyncratic behavior; (b) unintentional behavior; (c) irregular behavior; and (d)

unrecognizable behavior.

Despite the fact that it is a useful definition, it has difficulty as well: What if a receiver happens to interpret idiosyncratic, unintentional, irregular, and /or unrecognizable behavior? Could you say that communication did not occur? Or does not that behavior influence the following interactions? These questions are legitimate and lead us to another view of communication, which will be discussed in the next section.

Systems (Structural) Approach

The conceptual difficulty in defining communication and nonverbal communication in the external variable approach lies in the fact that its primary concern is not with communication per se and that it reduces communication into the individuals' S-R (or intrapersonal as in emotion and personality) or action-reaction (or interpersonal) terms.

Another conceptual difficulty of the traditional external variable approach is, according to Scheflen (1979), who is a main contributor of the systems approach, its tendency of "reification." If researchers cannot make causal explanations regarding a phenomenon with which they are dealing, the rule of thumb in the approach is to make up an unobservable construct which exists out of phenomena so as to make sense of phenomena in cause and effect relationships. Several kinds of personality are good examples of this tendency. Specifically, referring to the situation in psychotherapy, Scheflen (1966a) points out that:

The trouble was that we were dealing with in methods based upon psychodynamic inference applied to processes that could not be observed directly. (p. 263)

As a result of this, the synthesis has been extremely difficult, because each researcher insists on his or her own beliefs which cannot be evidenced due to unobservable constructs s/he made.

An alternative perspective therefore came out of these three dissatisfactions with the traditional view. The alternative perspective suggests the following:

- (a) Rather than dealing with the individuals' behaviors in S-R or action-reaction terms, behavior should be understood in terms of a synthesized or integrated hierarchical system.
- (b) As opposed to the primary concern with behaviors, which are always reduced to individual traits, the focus should be put on communication processes. More specifically, how is communication or interaction made possible? And finally,
- (c) researchers should only pay attention to observable behaviors and neglect unseen objects, or black-box-inference.

These include both methodological and epistemological challenges to the traditional approach. The historical development of this approach helps to clarify how the systems approach organizes these into a theoretical whole. Thus, I will delineate the historical development of those ideas.

Historical Sketch—The development of systems perspective¹

The dissatisfaction with the traditional scientific approach, including the external variable approach, was not only the matter in human sciences including communication, but also the matter in natural sciences as well. In fact, natural scientists first questioned the validity of reductionism. They realized the necessity of an integrative systems or holistic view of phenomena. In this line of logic, the Newtonian paradigm was therefore replaced by the Einstein one. Bertalanffy (1950), a structural biologist, introduced “general systems theory.”

Behavioral and social scientists also formulated systems perspective in the area of human behavior studies. Benedict published the book, *“The patterns of culture,”* in 1946. The Gestalt Psychology, including Lewin’s (1951) field theory, was developed to explain the holistic perception individuals have. Information theory (Shannon & Weaver, 1949) and cybernetics (Wiener, 1948) are other examples of work based on systems concepts. Structural linguists have explicated language as a system.

When it comes to human communication studies, the last three have made significant contributions. Information theory first introduced communication as a process. Feedback processes of communication are explained by cybernetics. Kendon (1982) summarizes contributions of information theory and cybernetics to human communication or interaction as follows:

It [information theory and cybernetics] led to an interest in process, rather than outcome, to an interest in how interactants behaved simultaneously and thereby mutually regulated one another’s ongoing behavior; it led to an interest in the constant features of the interactive situation as well as an interest in change; it also led to an explicit recognition of the possible signal value of any aspect of behavior in the situation. (p. 452)

Structural linguistics has contributed to the realization of scholars in human sciences that the method structural linguists have used to explicate spoken language could be extended to nonverbal behavior and communication. Particularly Sapir (1949) and Pike (1967) suggested that “the methods of analysis developed for abstracting the language code employed in speech could also be employed for the abstraction of code systems in other aspects of behavior” (Kendon, 1982, p.453).

Moreover, structural linguistics, also called “descriptive linguistics,” has focused on the description of language, rather than focusing on cause and effect relationship, using unobservable constructs, as the traditional scientists do. It has sought to describe languages in hierarchical interrelationships of phonemes, morphemes, and morphemic constructions to each other: A set of phonemes, the smallest unit in a language, make a

¹ I referred extensively to Schefflen (1966a), Kendon (1982, 1990) for the historical review here.

morpheme at a higher level, a set of which in turn composes morphemic construction, including syntactic sentences. Methodologically, each component is specified in relationship to other components at the same level and to higher levels as well.

Symbolic interactionism, particularly Mead's (1934) idea of self, also contributed to the development of the systems approach to communication. Mead considers the self as "the emergent products of the process of interaction" (Kendon, 1982, p.445). It suggests that we cannot reduce communicative behavior into individuals term, and that the self is not independent of other components, including other people and environment.

Systems Approach to Communication and Interaction Studies

Upon the development of systems logic in both natural science and human sciences, there also emerged communication and interaction studies based on the systems logic. Birdwhistell (1952, 1970), an anthropologist, developed kinesic-linguistic analogy. He adopted the method invented in structural linguistics to describe languages to human's kinesic behavior. He created kinemes, kinemorphs, kinemorphic constructions, which respectively correspond to phonemes, morphemes, and morphemic constructions in linguistic analyses. The assumption that underlies this is that, as mentioned above, nonverbal communication could be understood and analyzed in a way in which languages have been analyzed.

Scheflen (1966b, 1972, 1973), a psychiatrist and collaborator of Birdwhistell, developed the methodological device called "context analysis," which originates in natural history method (McQuown, 1971) to analyze human, especially nonverbal interaction. Hall (1963, 1966) used systems approach to investigate, particularly but not exclusively, human's spatial behavior or proxemics.

Although a slightly different philosophical tradition, but considered as the systems approach, Goffman (1959, 1961, 1963, 1967, 1969, 1971, 1974, 1981), a sociologist, analyzed face-to-face interaction. Conversation analysis is compatible with this systems logic, but from a different tradition (i.e., ethnomethodology, Garfinkel, 1967), focusing on verbal aspect of human interaction. Duncan and Fiske (1977, 1985) also have explored face-to-face human interaction, with an emphasis on both quantitative (i.e., traditional action-reaction logic) and qualitative aspects in a complementary way. Finally, Kendon (1977, 1990), considered as a major elaborator of the systems approach to human interaction in contemporary era, has examined focused encounters (Goffman's terminology) with the systems analyses.

Conception of Communication in the Systems Approach

All of those referred to above take the same view of communication or interaction. That is, they conceptualize communication as an integrated whole system. It implies that they do not distinguish between verbal and nonverbal communication. Rather, they view both as interdependent upon each other. Scheflen (1966a) formally defines communication in

this view as:

an organization of abstractable structural units, standard, and shared by members of a common culture. These structural units are related in a hierarchy of levels. This system gives continuity, generation to generation. Each child born into the culture must learn these units and how to arrange them in order to communicate. (p.269)

Scheflen (1966b) also describes communication as follows:

Communication is a cultural system consisting of successive levels of patterning that support, amend, modify, define and make possible human (and maybe animal) relationship. (p.17)

These provide several important features of the systems approach to communication. First, this view emphasizes that communication system is culturally relative or contextually determined (Sapir, Pike, Durkheim). It suggests that communicative behavior is not universal across cultures.

However, communication system is not totally unique, either. Communication system is shared within a particular community. In other words, communication is a cultural system. This "communication as culture" perspective is compatible with Hall's (1959) famous expression, "Culture is communication, communication is culture" (p.97). This is the second feature that Scheflen's definitions suggest.

Third, and related to the second, communication system is highly patterned, such that each member of a certain community can recognize or perceive particular combinations of structural units as meaningful gestalt or configuration. Thus, communication is a social process in that every member must share these patterns, if s/he wants to communicate with other members of a society.

Scheflen (1967) identifies two types of determinants of such patterned behaviors, both of which are not independent of each other. The first type is a cultural determinant, which Scheflen (1968, 1969) calls "program." Programs as a cultural determinant of behaviors provide how people organize behavioral units such that they function in an appropriate way. Programs include tradition, custom, rules, and so on. The second determinant is social organization. It includes gender roles, status, kinship, and so forth. Scheflen (1967) argues that "it is because of this cultural and social determinism that we must be leery when describing an interaction to explain any given behavior merely in personality or stimulus-response terms until we have uncovered the programmatic and structural aspects" (p.9).

As emphasized before, the systems or structural approach is antithetical to the traditional approach. In what follows, I will discuss several distinctive characteristics of the two approaches, which will also shed additional lights on other features of each approach I could not fully elaborate above.

Discussion

As is clear in the discussion thus far, there are many contrastive features in the two approaches. I will particularly but not exclusively, on several definitional contrastives. Toward the end of discussion, I will suggest the necessity of an integrative approach to human communication as well.

Verbal and nonverbal communication

The first contrastive feature between the external variable and systems approaches is a distinction between verbal and nonverbal communication. The external variable approach deals with nonverbal communication as if it occurs independently of verbal communication, while the structural approach incorporates both types of communication into the same umbrella under the name of "communication" (Schefflen, 1979). In other words, the scholars in the systems approach emphasize interdependent relationships between verbal and nonverbal communication (Key, 1980). By and large, those scholars tend not to distinguish between them. For example, Goffman never uses the term, "nonverbal communication," in his monographs. His concepts, "expression given," and "expression given off," however, implies some distinction between them.

"Expression given" is defined by Goffman (1959) as "verbal symbols or their substitutes which he uses admittedly and solely to convey the information that he and the others are known to attach to these symbols" (p.2). "Expression given off" is, on the other hand, defined as "a wide range of action that others can treat as symptomatic of the actor, the expectation being that the action was performed for reasons other than the information conveyed in this way" (p.2). The former implies verbal communication, while the latter nonverbal communication. But this distinction does not precisely correspond to the distinction the external variable approach makes (Cf. Burgoon's definition of nonverbal communication cited above).

Rather, Goffman emphasizes any human behavior and / or any human attributes could be communicative, regardless of verbal or nonverbal information. Thus such distinction is neither useful nor meaningful for the systems researchers.

Intention

For those who take the external variable approach to human communication, intention of speaker or sender is a criterion that differentiates communicative behavior from other behaviors. Intention is included in the definition because they need to emphasize roles of sender in communication processes. On the other hand, the systems perspective does not include intention as a criterion for communication. Rather, they argue all behaviors are potentially communicative. Schefflen (1967) specifically insists that:

The mere performance, then, of any traditional behavior forms a basis for social organization and is communicative without necessarily requiring any intent, any

specific signals or any use of speech. (p.9)

In stead of using intention as a criterion for communication, they, rather, use co-presence of others as one of the conditions for behaviors to be communicative. Kendon (1979) argues that "so long as one is in the presence of another, all of one's behavior is a source of information for another, all of the time" (p.70). He further argues that "people in one another's presence enter into systems of information exchange and reciprocal control" (p.71). Scheflen (1972) more specifically states that:

a person at a particular kind of transaction provides a rather stable source of behavior, and his presence provides a fairly consistent "environment" for the behavior of others who know him or know his role. (p.126) (emphasis omitted)

To emphasize co-presence of others requires to focus on another nature of communication as well : a dyad as the unit of analysis. Communication is a collaborative work between sender and receiver, not simply individuals' act and reaction. Scheflen (1964) demonstrates this point in relation to intention issue as follows:

Communication includes all behaviors by which a group forms, sustains, mediates, corrects, and integrates its relationships. In the flow of an interaction, communicative behaviors serve to give continuous notification of the states of each participant and of the relationships that obtain between them. (p.318)

Goffman's (1959) "working consensus" is done with this mutual notification between communicators. The co-presence of others shapes or defines how we behave and thus communicate.

Viewing all behaviors as potentially communicative in the presence of others and communicators as a system is conceptually easier to define communication in general and nonverbal communication in particular, particularly given the difficulty in defining and measuring intention, as Knapp, Wiemann, and Daly (1983) indicate.

Shared Meaning and Code

The issue of shared meaning is not so distinctive between the external variable and the systems approach as the issue of intention, for both approaches consider shared meaning as a component defining communication. As cited above, Burgoon's definition (the external variable approach) includes explicitly "sharedness of meaning." Similarly, the systems approach defines communication in terms of patterned behaviors that imply sharedness of meaning in a given community, as well as of co-presence of others, as indicated just above. For the systems approach, those patterned behaviors are what makes communication possible in a certain society. Without these patternedness, "behaviors would be unpredictable and unreliable, and it would be impossible to sustain, mediate, and form human relationships, complete coordinated tasks, and transmit a common culture" (Scheflen, 1969, p.214).

Although these two approaches consider shared meaning as a communicative element,

these two approaches differ in how it should be investigated. The external variable approach presupposes certain behaviors have shared meaning or codes, or even universal meaning (i.e., universality of nonverbal behaviors). Furthermore, it presupposes that meaning is affective one, such as happiness, anger, and so on. As Ekman and Friesen (1969) review, by showing a picture of particular behaviors (e.g., smiling), researchers ask various respondents (e.g., people from different cultures) what this behavior means. More importantly, it presupposes that the shown picture is an identifiable unit of behaviors or a code, for example, smiling, crying and so on. These presuppositions are major characteristics in approaching to shared meaning in this tradition.

On the other hand, the systems approach does not have such presuppositions. Rather, it seeks shared meaning through an identification of the unit of behavior or a code, such as kinemes, kinemorphs, and kinemorphic constructions (i.e., common behavioral morphology). Thus researchers take all possible behavioral units into consideration until they identify common units of behaviors that appear continuously in relation to other behaviors in homogeneous setting (e.g., psychotherapy interview; but not across situations). Once they identified such units, they argue that these behaviors have common meanings in a given community. However, common meanings in this approach does not refer to affective meanings, such as happiness or anger. Rather, common meanings refer to communicative functions attached to behaviors that elicit mutually recognizable and predictable configurations or *gestalts* in a given society.

As already indicated and implied in the previous discussion, the two approaches also differ in universalism vs. relativism. Repeatedly mentioned, the external variable approach is characterized as its presuppositions of meanings. The assumption that underlies this is that behaviors have common meanings across contexts. The systems approach, on the other hand, takes the position that behavior should be understood in a given context, and that meanings attached to it are relative to the context. This difference reflects so-called "etic-emic" distinctions (Pike, 1967).

Toward a Synthesis

As discussed, there are several contrastive features between the two approaches. These differences are derived from their epistemological assumptions. As also described, the systems approach came out as an antithesis to the external variable approach. The systems approach, however, does not completely reject the idea of the external variable approach. Bertalanffy, a major systems theorist, argues that the systems approach is not a new idea that totally rejects the external variable approach, rather comes out with it accepted.

Both of scholars in the external variable and the systems approaches argue that both approaches are complementary to each other, rather than contradictory (Schefflen, 1966b; Scherer & Ekman, 1982). For example, the idea of "co-presence" advocated by the systems approach suggests more reasonable conceptualization of communication for the external

variable approach, than using intention or consciousness as a component of communication. More specifically, shifting attention from each individual to communicators as a system, the more sophisticated analyses at interpersonal level could be made. The intrapersonal level (e.g., emotion and personality) analyses with which mostly the external variable researchers have been concerned could be made possible with considerations of what the systems researchers have found at the interpersonal level, as well as what the external variable researchers have found. The integrated analyses have to be made in the future.

The suggestion of the study of what we call currently the "systems approach to communication or interaction" is traced back to Simmel's (1908) argument: the study of social interaction is the subject matter of sociology (Kendon, 1982). Not only neglected in sociology, but also dominated by other research traditions (i.e., the external variable approach), the study of interaction itself has long been underestimated. Goffman (1983) in his presidential address expresses his frustration with the dominance of the natural scientific method, and strongly suggests that interaction order be treated as "a substantive domain in its own right" (p.2). It seems that the external variable researchers have been hardly aware of advantages of the systems approach or even of the existence of it. However, as mentioned above, there are many conceptual advantages of the systems approach over the external variable approach. The researchers should recognize the advantages of the systems perspective so that more integrated studies of communication will be done.

Conclusions

In this paper, I have attempted to delineate the two major approaches to communication in general and nonverbal communication in particular: the external variable approach and the system (structural) approach. I have more focused on the systems approach in order to emphasize advantages and usefulness of the approach. Although there are several disadvantages in the approach, such as one that it takes much time to explicate behavioral code systems. However, it conceptualizes communication more logically than the external variable approach, as I discussed above. We must investigate communicative phenomena with both approaches complementary to each other so that more effective research is made possible.

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