organs as a group as well as the speech-specific neural structures and pathways. For a fuller definition, see taxonomy.

spoken language. The fusion of genetically determined speech with culturally determined language. For a fuller definition, see taxonomy.

symbol. A stimulus whose relationship with that with which it is associated is a result of the decision or arbitrary agreement of human use (users). For a fuller description, see taxonomy.

vocalization. The oral production of sounds by an organism. The organism may or may not be human. For a fuller description, see taxonomy.

zoosemiotic. Those sign system aspects of humankind's total communicative repertoire that can be shown to be the end products of evolutionary series.[3]

Glossary Footnotes

1. Sebeok, T. A. Goals and limitations of the study of animal communication. In T. A. Sebeok (Ed.), *Animal communication.* Bloomington, Ind.: Indiana University Press, 1968, p. 8.
2. Werner, H., and Kaplan, B. *Symbol formation.* New York: John Wiley & Sons, 1963, pp. 16–17.
3. Sebeok, p. 8.

THE CONSTRUCTIVIST APPROACH TO COMMUNICATION

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THE CONSTRUCTIVIST APPROACH TO COMMUNICATION

The constructivist approach to communication, which we have articulated over the last several years, recognizes the important role that philosophical and conceptual analysis and argument can play in the illumination of human communication. However, the bulk of our work consists of theoretical analyses and empirical research reports on specific topics. In the present essay, we offer a summary of our general philosophical foundations, our theoretical commitments and research foci, and our methodological commitments and research practices.

PHILOSOPHICAL FOUNDATIONS

A useful place to begin a discussion of constructivism's philosophical foundations is the Brockriede's observation that in many discussions of metatheoretical and metamethodological issues in communication, analysts have not "clearly differentiated between philosophical assump-

tions and a theoretical orientation" (1978, p. 3). This is a point well taken. But Brockriede's distinction between theory and philosophy is subject both to qualification and to further refinement.

First, the qualification: although a useful distinction can be drawn between theory and philosophy, this should not blind one to the dependence of substantive theory on philosophic assumptions. It is just this relationship that makes criticism of the philosophical assumptions of a theory a useful enterprise; a theory based on defective assumptions, or a theory made inconsistent by inattention to its assumptions, is obviously a less-than-ideal theory. This is not to deny that for certain purposes a distinction between "theory" and "philosophy" may be useful—indeed it may be, and such a distinction shall be employed here. But one ought not take this distinction as somehow suggesting that theories are not dependent on philosophical assumptions.

Now the refinement: there are two rather different (though connected) kinds of philosophical assumptions made in a social scientific theory. Crudely put, one kind represents assumptions about the nature of *science;* and the other, assumptions about the nature of *persons.* The first sort is the kind usually identified by a phrase such as *philosophy of science.* The second does not have so convenient a label, though *philosophical anthropology* suggests itself (and will be used here).

Of course, these two kinds of philosophical assumptions are related. Science is, after, all, a human activity. Whatever one's conception of science is, it should be consistent with one's view of persons (and vice versa). For example, it would not do to think of science as necessarily based on the availability of raw uninterpreted sense-data, and then to suggest that the nature of persons is such that we have no access to such uninterpreted data.

But given this relationship between one's philosophical anthropology and one's philosophy of science, a useful distinction can still be drawn between them. The central reason for drawing the distinction is that a recognition of "fundamental assumptions about persons" as an element of any social scientific theory permits one to see broad similarities and differences among various substantive positions. It might be useful, for example, to recognize that some substantive theories see persons as fundamentally passive creatures, while others view persons as inherently active; there might be a wide variety of "active" theories, and these might not all be completely compatible with each other, but it still may be desirable to see what it is about these theories that makes them all somehow similar.

In sum, there are three different things to be distinguished: the substantive social scientific theory, that theory's basic assumptions about the nature of persons, and that theory's basic assumptions about the nature of science. As suggested above, these are often intertwined rather tightly, and one cannot always sort things neatly into these three boxes. Still, to recognize the pragmatic value of these distinctions is to have a place to start in clarifying matters.

Now we shall move on to constructivism. Constructivism is, first and foremost, a substantive theory, and we shall correspondingly reserve the term *constructivism* for that theory. But, like any social scientific theory, constructivism is based on general assumptions about the scientific enterprise (i.e., a philosophy of science) and on general assumptions about persons (i.e., a philosophical anthropology).

The place to start in sorting things out is with the general image of persons that constructivism embraces. Perhaps the phrase that best captures constructivism's philosophical anthropology is the *interpretive orientation.* The broad and general assumptions about persons contained in this interpretive orientation are shared by a number of different substantive theories (of which constructivism is only one). An interpretive philosophical anthropology suggests that persons approach reality through ongoing processes of interpretation. As Delia and Grossberg (1977, p. 36) note, from an interpretive orientation communication is seen as

> an emergent, creative activity through which human social reality is constantly being re-created, affirmed, repaired, and changed. Within interpretive social theories, persons are agents of action, not mere responders to events. Actors are capable of creative originative action, and consequently, communication is not completely bound by its past, but involves an emergent process in which social, that is to say intersubjective, reality is constituted. Interpretive views of communication recognize this creative, emergent process of the social reconstruction of reality as involving an interplay of individual interpretive processes and socially and historically constituted processes and contexts.

Now a number of different substantive theories all fall roughly within this general interpretive orientation. Examples might include Cicourel's (1974) cognitive sociology, Schutz's (1932/1967) phenomenological social theory, Kelly's (1955) personal construct theory, Blumer's (1969) symbolic interactionism, Williams' (1965) Marxist cultural theory, and our constructivist theory. These theories, though they share some broad sense interpretive beliefs, nevertheless concretize those tenets in very different ways. The point we wish to emphasize is that constructivism is only one particular interpretive theory. A major portion of our later discussion will be directed toward elaborating the concrete claims of constructivism considered as a substantive theory.

However, our theoretical perspective not only exemplifies a general philosophical anthropology but embodies a philosophy of science as well. That philosophy of science is most conveniently captured by

Suppe's (1977) term *Weltanschauungen*. Just as the interpretive philosophical anthropology underlies a number of more specific social scientific theories, so a Weltanschauungen philosophy of science represents the general assumptions that a number of more specific philosophies of science embrace. For example, Kuhn (1970), Toulmin (1972), and Hanson (1958), among others, might all be said to share a general Weltanschauungen orientation within the philosophy of science, even while they differ importantly over more specific issues. Constructivism's particular interpretation of the general Weltanschauungen philosophy of science has been discussed elsewhere (Delia, 1977b; D. O'Keefe, 1975) and will receive further treatment below. The point at present is that the Weltanschauungen philosophy of science that underpins constructivism is something distinct from constructivism itself (i.e., the substantive theory). Just as one might adopt an interpretive philosophical anthropology while rejecting constructivism's specific concretization of that general orientation, so one might adopt a Weltanschauungen philosophy of science while rejecting constructivism proper.

These distinctions may help to clarify some of the arguments that we have advanced in other papers, for we have tried to argue for the desirability of both (1) general interpretive and Weltanschauungen assumptions and (2) our specific constructivist framework. Thus, for example, Delia's (1975a) discussion of the variable-analytic stance toward research and D. O'Keefe's (1975) analysis of logical empiricism are best seen as arguments for a general Weltanschauungen philosophy of science; Delia's (1977b) discussion of the nature of science argues both for the general Weltanschauungen orientation and for a specific constructivist reading of that general orientation; and Delia and Grossberg's (1977) discussion of the nature of evidence in communication research is based on general interpretive assumptions, not specific constructivist views. By contrast, for example, Delia and Clark's (1975), and Delia and B. O'Keefe's (1979) discussion of communicative development, Applegate's (1980b) naturalistic observations of nursery school teachers' communicative strategies, S. Jackson's (1977) analysis of the perception of political candidates, D. O'Keefe's (1980b) treatment of the attitude-behavior relationship, and Applegate and Delia's (1980), and B. O'Keefe and Delia's (1979) analyses of the social-cognitive and interactional processes underlying socialization practices and communicative development all articulate and argue for specific constructivist treatments of particular empirical domains.

The following outline of the constructivist perspective, therefore, will seek to summarize both the broader methodological implications of the perspective and the more particular theoretical claims we make about communication and interaction processes. The treatment is divided into two major sections. We first discuss the theoretical commitments and research foci of constructivism considered as a substantive theoretical position, and then we turn to a discussion of the implications of our view of the research enterprise.

THEORETICAL COMMITMENTS AND RESEARCH FOCI

The Theoretical Commitments of Constructivism

This section sketches the central theoretical claims of constructivism. Consistent with the general tenets of an interpretive philosophical anthropology, constructivism sees persons as approaching the world through processes of interpretation. The interpretive schemes persons employ channelize their activity (including their communicative conduct). Behavior is organized through the application of interpretive schemes as well as strategies that translate intentions into behavioral displays. Human interaction is a process in which individual lines of action are coordinated through reciprocal recognition of communicative intent and in which actions are organized by communicative strategies; both the reciprocal recognition of communicative intent and the employment of communicative strategies depend centrally on the interpretive schemes interactants bring to bear on the world.

This constructivist view of communication is elaborated in this section through discussion of (1) interpretive processes, (2) human action, (3) human interaction, and (4) human communication.

• *Interpretive Processes.* Our conception of interpretive processes rests on our view of persons as simultaneously (a) biological entities who approach the world through the cognitive organization of experience, and (b) members of a sociocultural community.

Because persons are seen within constructivism as biological entities, their conduct is taken to originate in natural activity. This ongoing activity is directed and organized by cognitive processes: through the application of cognitive schemes, experience is segmented into meaningful units and interpreted, beliefs about the world are created and integrated, and behavior is structured and controlled.

Our conception of cognitive processes draws heavily on Kelly's (1955) theory of personal constructs. Kelly argues that persons give structure and meaning to the world through grouping events on the basis of their similarities and differences. Constructs (e.g., friendly-unfriendly, tall-short, etc.) are the contrasts that persons use to group events. Our conception of the nature and organization of systems of constructs is essentially consistent with Kelly's original formulation. Because constructs provide the basic ways of discriminating among

events, we see constructs as the most basic units of cognitive organization.

But the most general units of cognitive organization are what we call "interpretive schemes." By interpretive scheme, we refer to any classification device persons use to make sense of their world. We recognize that persons employ a variety of interpretive schemes and systems that are not best described as "constructs" per se. For example, persons use balance schemes (Heider, 1958), causal schemes (e.g., Kelley, 1971), and linear ordering schemes (e.g., De Soto & Albrecht, 1968) to give order and meaning to events; and fundamental beliefs about social relations like Cicourel's (1974) "interpretive practices" or Grice's (1975) "conversational maxims" are central to the interpretation of speech and behavior. None of these important interpretive devices is easily seen as a construct (though it might be argued that they are all in some sense derived from constructs). Hence, while we see constructs as basic to the interpretation of experience, we recognize that a variety of schemes and beliefs serve the process of interpretation.

Although we define interpretive scheme as a classification device, by classification we mean something more than simply categorization. Classification of an object, persons, or event involves not only identification or recognition of same but also placement of the object, person, or event in relation to kindred objects, persons, and events. Hence, every interpretive scheme simultaneously serves the functions of identification and placement. To take an object to *be* something is to simultaneously place it in regard to its routine functions, its routine occurrence, its expected operation or behavior, and its routine surroundings. Sacks (1972) has offered an illuminating example of the operation of a particular type of interpretive scheme in his analysis of the "membership categorization device." Sacks offers, by way of illustration, these two sentences: "The baby cried. The mommy picked it up." These two sentences are heard as a coherent story, in which "it" in the second sentence is taken to refer to the baby in the first sentence. The ability to hear these two sentences as a story arises from the operation of the membership categorization device in which one sense of the term *baby* participates. If "baby" is heard as "infant human," its routine surroundings include mothers, fathers, and other family members; its routine behaviors include crying; and the routine behaviors of mothers in relation to crying babies includes picking the babies up. The membership categorization device assures that a connection will be made between "baby" and "mommy," and further supplies the background understandings that transform these two sentences into a story about a routinely occurring event involving categories of persons classified by this device. Thus, an interpretive scheme does not simply categorize events; an interpretive scheme, in its very application, places and organizes events within a larger context of meaning and expectation.

Our conception of interpretive schemes and processes reflects a structural-developmental orientation. In our view, the cognitive system develops in accord with Werner's (1957, p. 126) Orthogenetic Principle: "Wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration." This principle suggests that through development, cognitive systems become more complex, more organized, and more abstract. In various subsystems, these general developmental axes may be reflected in more specific kinds of developmental change. Thus, for example, in the interpersonal construct subsystem (for construing other persons), increasing abstractness is reflected in the shift from concrete behavioral constructs toward psychological and motivational constructs; increasing abstractness and differentiation are reflected in a movement away from global evaluation and its domination in judgment; increasing abstractness and integration are reflected in the increasing comprehensiveness of constructs.

General and domain-specific developmental axes describe the structure and quality of interpretive processes; and in our view, the structure and quality of interpretive processes are as important as specific content in directing and organizing behavior. Thus, for example, differentiation in a construct subsystem (a structural feature of the system) is important regardless of the specific constructs employed; the comprehensiveness of constructs (a qualitative feature) is important quite apart from the specific range of situations to which those constructs apply.

We do not mean to argue that the specific content of the constructs or other interpretive schemes employed by a person is unimportant. While many aspects of communication are more closely related to structural- and qualitative-developmental features of cognitive processes than to any specific content, the reasons that a person comes to some particular interpretation or makes some particular choice ultimate depend on the particular constructs employed.

Nor do we mean to suggest that structure, quality, and content are independent in any strict sense. After all, a construct that is relatively abstract must necessarily involve a different substantive contrast than a construct that is relatively concrete. Indeed, developmental change, in transforming cognitive processes, induces *both* structural and substantive alterations in ways of interpreting the world. Our own research reflects this recognition of the interrelation of structural and substantive features. For example, Delia and B. O'Keefe (1976) reported that differentiation in the interpersonal construct system (a

structural-developmental feature) is negatively related to Machiavellianism (an aspect of the content of an individual's interpersonal orientation).

Finally, it should be emphasized that we find *systematic* (as against particular or idiosyncratic) differences in the content of constructs to be as important as structural and qualitative developmental differences. Such systematic individual differences in construct content, while not tied to developmental differences in cognitive systems, are nevertheless important to communication. Burleson (1978), for example, investigated differences in interpersonal behavior as a function of differences in the content of construct systems—in this case, the degree to which constructs are "relationally oriented."

Thus, our view of persons as biological entities who organize their experience and guide their activity through cognitive organization leads us to see interpretive processes in structural and developmental terms. And because our view of interpretive processes is structural and developmental, we do not seek to explain why any particular person applied any particular construct in any particular situation or engaged in any particular act; rather, we hope to explain the ways in which social and situational factors and processes of development shape the cognitive processes of the individual and make possible the organization, control, and coordination of behavior.

But our conception of interpretive schemes does not originate solely from a view of persons as biological entities who approach the world through the cognitive organization of experience but also from a view of persons as members of a sociocultural community. The world into which persons are born is a world defined by ongoing cultural processes of social organization and interpretation. Persons develop interpretive processes through interaction in and with this social world.

In our view, culture is an historically evolving complex of forms or structures for representing and acting on the world, created and used by a human community. Cultures manifest historical continuity; they transcend the existence of any person or set of persons. Thus, the human communities bound together by culture are continuous through time; both culture and community are historical processes in which forms of social organization and interpretation are maintained and elaborated in and through processes of social life.

Because individuals are born into a human community, they enter a world that is already defined, interpreted, organized, and meaningful. The world the individual faces is a world of preconstituted meaning, and it is to this meaningful world that the individual must accommodate. However, the individual does not become a member of a culture simply through coordinating personal constructs with those of other persons. Culture is much more than commonality or sharedness in interpretive processes; it is the whole evolving social organization, and conception of reality, and complex of symbolic forms employed by the human group. Individuals become a part of their culture as they become members of the community, as they occupy the places prepared for them in the ongoing process of group life, as they participate in the most basic forms of social organization, and as they come to have cognitive systems in which their most fundamental forms of cognitive representation and behavioral organization are integrated with the meanings these hold for the social group.

It should be noted that in emphasizing the intrinsically social nature of human experience, we depart substantially from Kelly's views and the views of many cognitive-developmental theorists. It is our contention that in this regard, Kelly's man-as-scientist metaphor is misleading in a subtle but centrally important way. Kelly's metaphor implies that persons derive constructs experientially, through imposing patterns on undefined events. In fact, people erect interpretive systems principally through communication with and accommodation to the meaningful, pervasive, and enduring social world into which they are born.

One additional feature of our view of interpretive processes requires clarification. In arguing that persons approach the world through processes of interpretation, we in no way mean to suggest that persons are generally or necessarily conscious of these processes. Indeed, constructivist research has quite explicitly emphasized the tacit or nonconscious nature of interpretive processes (Delia & D. O'Keefe, 1977). It is our contention that persons act in a world experienced through cognitive representation, although the processes by which the world is represented and the specific beliefs that guide action are seldom objects of conscious attention and examination.

· *Human Action.* In our view, human action is guided by context-relevant intentions and beliefs produced by schemes of interpretation. Alternative lines of action are indicated by interpretive schemes; intentions are realized in choice among alternative lines of action; and lines of action are translated into actual behavior displays through the application of action schemes. The organization of behavior toward some end or purpose creates that we call a "strategy."

A strategy, then, is the way in which an actor chooses to actualize an intention in behavior. It is a method by which the actor makes a projected line of action concrete. Of course, a line of action may be associated with multiple intentions or goals, and thus may require the operation of multiple strategies or of strategies that simultaneously realize multiple goals; and the sequential unfolding of a line of action may call for multiple strategies that realize the same goal or intention.

This conception of strategy, as a method for actualizing lines of

action in behavior, in no way implies that behavior is consciously strategic in the ordinary sense. Indeed, strategies (in our usage) are methods used by actors to direct their own behavior, tacitly known and tacitly employed.

Because persons' strategic choices are based on context-relevant intentions and beliefs, human action is always situated. Since actions reflect a person's beliefs about an unfolding situation, actions are characterized by emergence. Any choice of action is based on an individual's immediate beliefs, which originate in that individual's interpretation of his or her history. The act is projected into the future, since it is designed to accomplish the individual's intentions. The choice of strategy rests on the individual's predictions about the future from events in that person's own past, and the individual's strategically organized behavior serves as an implicit test of those predictions. Present action permits validation or modification of interpretive schemes; future choices will reflect the success or failure of the present choice. In this way, every act collapses past, present, and future; and thus, every act emerges from a new past into a new future.

· *Human Interaction.* The foregoing view of human action is the foundation for our view of human interaction. We see interaction as a process in which persons coordinate their respective lines of action through the application of shared schemes for the organization and interpretation of action. Persons' actions are channelized by interpretive schemes: individuals act on the basis of their conception of what a situation is, contains, and demands; that conception is created through the application of interpretive schemes; and as a result, the interpretive scheme outlines a set of alternative courses of action an individual may follow.

It is important to recognize that two rather different kinds of interpretive devices serve the process of coordination in interaction. On the one hand, persons employ very general and abstract interpretive principles that are relevant at every point in an interactional sequence. Examples of this type of interpretive principle can be found in Cicourel's (1974) discussion of assumptions that persons must make in order to connect their knowledge of social rules with what is occurring: persons assume that present ambiguities can be clarified in terms of past or future events, and so on. Another set of general abstract interpretive principles can be found in Grice's (1975) work. He argues that talk is structured around the principle "Be cooperative" and a set of corollaries derived from this cooperative principle.

On the other hand, in contrast to these general interpretive principles, are persons who employ a kind of interpretive scheme that is only relevant for making connections among particular kinds of acts. We use the term *organizing scheme* to refer to these more particular interpretive devices for classifying and characterizing interactional sequences (see B. O'Keefe, Delia, & D. O'Keefe, in press). The term covers a variety of interactional classification devices: general plans for speech events (e.g., the typical form of a committee meeting), adjacency pairs (sequentially linked pairs of acts, e.g., question-answer), routine procedures for accomplishing particular tasks or goals (e.g., the standard procedure a family follows in getting up and dressing in the morning), general knowledge about the organization of behavior in institutional settings [e.g., as Schank and Abelson (1977) have described it, a general script that customers follow in restaurants], and so on. As with other interpretive schemes, organizing schemes are seldom employed in full awareness. But whereas some interpretive schemes may be idiosyncratic and reflect the psychology of some particular individual, organizing schemes are necessarily social. That is, organizing schemes exist to classify acts in relation to other acts, to fit together the lines of action of independent persons. Organizing schemes are essentially coordination devices that allow one person to produce acts with recognizable implications for another person's behavior and permit persons to respond coherently and appropriately to acts that have been produced.

Organizing schemes are conceptually distinguishable from the more general interpretive devices that serve the ends of interactional coordination but cannot be employed independently of those general practices. Cicourel (1974) has made this point in arguing that the kinds of assumptions he outlines make interpretation (and coordination of behavior and interpretation) possible; particular social rules (e.g., organizing schemes) supply the content of interpretation. The dependence of organizing schemes on some more general interpretive practices is exemplified in Nofsinger's (1976) analysis of indirect answers; he shows how Grice's general cooperative principle, in conjunction with a more particular understanding that questions are followed by answers, can be used to interpret indirect answers.

Organizing schemes thus supply the sequential connections among acts in a concrete interactional stream. Such schemes are used by participants both in interpreting the behavior produced by others and in structuring the type and placement of their own actions.

The fact that individuals share schemes such as these allows them to coordinate their activities. However, to say that such schemes are shared by members of a social group in no way implies that all members' processes are identical or that coordination can only be accomplished when processes are identical. Persons can coordinate their behavior even though their interpretive processes may be dissimilar in some respects; there must, however, be sufficient similarity for the

purposes of a particular interaction. For example, although an adult and a very young child have (because of differences in development) qualitatively different understandings of social interaction, they can coordinate their actions for some (but obviously not all) purposes. Two persons can engage in a form of social activity, even if each is unaware of the details of the other's role or even of much beyond his or her own limited role, provided that their understandings and actions interlock within some very general shared scheme (e.g., someone goes to the post office to mail a letter, which is then picked up by an unseen postal worker).

Shared interpretive and organizing schemes thus serve as resources for the coordination of activities, although the process of coordinating action is not given in those procedures. Coordination is achieved and interaction is given structure as participants in an interaction establish, call upon, make reference to, and orient behavior to jointly constructed interpretive schemes. Organizing procedures do not follow automatically from context but must be referenced and called out within contexts. Such schemes cannot be unambiguously applied; interactants face the task of establishing what scheme is being followed as well as organizing behavior to fit shared schemes. In short, interactional structure and coordination are not achieved through the simple application of rules but are created as participants implicitly negotiate an orderly scheme for their interaction and attempt to display their adherence to that orderly scheme.

This process of creating orderly models for action is the process of creating social structure and social reality. The coordination of behavior and interpretation serves the process of creating and maintaining the social organization and view of reality within the social group. Persons choose strategies on the basis of their beliefs about the reality in which they are engaged; in coordinating behavior, they align and realign their beliefs. Interaction is thus a process of implicit negotiation in which persons forward their views of reality with each strategic choice and in which the consequences of their choices reflect on the consensus achieved with their partners. There are multiple issues in this process of negotiating a shared reality: the character of the present situation and the selves and relationships within it, as well as the background knowledge that participants bring with them to the situation.

Thus, through social interaction individuals create and extend their shared interpretations of the world and the forms of social organization in which they participate. This ongoing process of defining reality and creating social order is the life of a sociocultural community. In this way, the continuing and historically emergent processes of human group life unfold through the everyday actions and interactions of members of a human community.

• *Human Communication.* We see human communication as a process of interaction in which the communicative intentions of participants are a focus for coordination. In communication, persons express themselves and make sense of the communicative intentions of others. Their strategies are structured and their strategic choices are guided by their own communicative intentions and the communicative intentions of their partners. In communication, action is mobilized to serve the needs of expression, and interpretation is guided by recognition of the intention to express. Of course, many different specific intentions and types of intentions direct communicative choices. At base, however, we see communication as originating in the attempt to make publicly available some private state and the organization of behavior toward that end.

Thus, in the constructivist view communication is a process that is defined not by its products or goals but by its peculiar structure of reciprocal intentions. That is, communication is a relation among persons that is characterized by the intention to express, the recognition of such intentions in others, and the organization of action and interaction around the reciprocal communicative intentions of participants.

For constructivists, interpretation is not communication, although all communication is grounded in processes of interpretation. Action is not communication, although communication always involves coordinated action and reflects the processes that organize action in general. For this reason, we see communication as involving the strategic organization of behavior. And choosing among communication strategies, like any other strategic choice, depends on the intentions and context-relevant beliefs of the actor and the processes of interpretation in which intentions and beliefs originate. Likewise, interaction is not communication, although all communication is a form of interaction and thus shares the characteristics of interaction in general. Communication is a situated activity; it is a process in which persons coordinate their behavior through the application of shared interpretive schemes; it is a process of implicit negotiation in which strategic choices reflect the emerging consensus about the reality that participants share. Communication is a special kind of relationship and a special kind of interaction in which communicative intentions become a focus for the coordination of action.

An Overview of Constructivist Research

In this section, we discuss the application of our general view of communication to a particular area of research: the role of social-cognitive processes in communication. As indicated earlier, persons rely on a variety of interpretive processes in making sense of the world. They employ various cognitive subsystems in the process of interpretation. One of these subsystems is directed at making sense of other persons; it is composed of constructs whose range of convenience is the behavioral, interpersonal, and psychological characteristics of other persons. Beliefs about the enduring characteristics of others are often crucial to interpreting their behavior. Beliefs about the communication-relevant characteristics of others guide communicative choices. The interpersonal construct system is a primary source of these beliefs and thus plays a critical role in communication. A considerable proportion of constructivist research activity, therefore, has been directed at exploring the operation of the interpersonal construct system in producing organized sets of beliefs about persons and in directing communicative choices.

Interpersonal Constructs and Interpersonal Impressions. Our conception of the nature and development of the interpersonal construct system and of the process of impression formation has been explicitly discussed by Crockett (1965) and Delia (1977b). These papers also serve as a foundation for the research on communicative strategies discussed below. They reflect an evolving theoretical view, so that our current thinking departs in some respects from these original formulations. More adequate, complete, and contemporary statements can be found in Crockett (1977), and Delia and B. O'Keefe (1979).

The interpersonal construct system is employed in construing persons and generates a variety of interpersonal judgments. Interpersonal constructs are employed in representing the behavior, roles, personality characteristics, habits, attitudes, values, intentions, beliefs, and emotions of others. Such judgments are involved in representing particular persons as individuals, in erecting a general act- and situation-independent understanding of other persons.

Many theorists have argued that the impression-formation process involved in elaborating such sets of beliefs is best seen as originating in implicit theories of personality employed by perceivers. Crockett (1965) has suggested that such implicit theories are best conceptualized as systems of interpersonal constructs. Impression formation is thus seen as a process in which behavior is construed as representing stable qualities of the person; inferential links between constructs produce impressions that are elaborated beyond the information available through the immediate representation of the observed behavior. Because impressions are erected through the operation of an individual's interpersonal construct system, impressions reflect the structure, quality, and content of the perceiver's system of interpersonal constructs.

Much of our research has been directed at elaborating an understanding of interpersonal interpretive processes within the framework provided by our analysis of the nature and functioning of the interpersonal construct system. Our work has addressed a number of specific topics, including the dimensions of difference in interpersonal construct systems (e.g., Crockett, 1965; H. Jackson, 1978; Kline, 1978; B. O'Keefe & Delia, 1978); developmental changes in interpersonal constructs (e.g., Delia, Burleson, & Kline, 1979, in press; Scarlett, Press, & Crockett, 1971a, b); the role of construct system development as a factor influencing the organization of naturally formed impressions (e.g., Delia, Burleson, & Kline, in press; Delia, Clark & Switzer, 1974; Press, Scarlett, & Crockett, 1973); the role of construct system development in the organization of inconsistent information about another under conditions of simultaneous and sequential receipt of the inconsistent information (e.g., Kaplan & Crockett, 1968; Klyver, Press, Crockett, 1972; Mayo & Crockett, 1964; McMahan, 1976; Nidorf & Crockett, 1965); the relationship of the level of construct system development and the organization of impressions as influenced by such factors as (a) the extent to which the information is open to multiple interpretations (Crockett, Conyea, & Delia, 1970), (b) the presence of basic differences in values or background between the perceiver and the stimulus person (Delia, 1972; Meltzer, Crockett, & Rosenkrantz, 1966), (c) the use of varying interpretive sets by perceivers (Crockett, Mahood, & Press, 1975; Press, Crockett, & Delia, 1975), (d) the source of information about the stimulus person (Mulligan, 1979), and (e) the existence of emotional involvement with another (Rosenbach, Crockett, & Wapner, 1973); differences in the level of social perspective-taking of individuals with varying levels of interpersonal construct system development (e.g., Hale & Delia, 1976; Sypher & O'Keefe, 1980); the importance of idiosyncratic perceptual dimensions in processing information and organizing impressions (e.g., Delia, Gonyea, & Crockett, 1971; B. O'Keefe, Delia, & D. O'Keefe, 1977); the kinds of interpersonal constructs developed by individuals with varying sorts of interpersonal values and orientations (e.g., Borden, 1979; Delia, 1974; Delia & B. O'Keefe, 1976; Sypher, Nightingale, Vielhaber, & Sypher, 1981); the nature of the interpretive processes underlying the attribution of communicator credibility (Delia, 1975b, 1976a) and the perception of public figures (e.g., Applegate, 1978b; Freeman, 1976, 1980; S. Jackson, 1977; Mihevc, 1974; Swanson, in

press; Swanson & Freeman, 1975); the differential reliance of individuals varying in construct-system development upon simplifying social schemas in understanding patterns of interpersonal relationships (e.g., Delia & Crockett, 1973; Press, Crockett, & Rosenkrantz, 1969); and the kinds of interpretive practices and contextual factors influencing the formation of impressions within nonintimate interpersonal relationships (e.g., Delia, 1980a; B. O'Keefe, 1978; Rubin, 1977, 1979).

• *Interpersonal Constructs and Communicative Strategies.* In addition to investigations focused directly upon interpretive processes, a number of studies undertaken within our general framework have explored the relationship between characteristics of the interpersonal construct system and strategic features of communication (see the general analyses and discussion of Applegate & Delia, 1980; Clark & Delia, 1979; Delia & B. O'Keefe, 1979; and B. O'Keefe & Delia, in press). We have focused on the role of the interpersonal construct system, as opposed to other interpretive systems, for several reasons. The nature and functioning of the interpersonal construct system is already reasonably well understood. The interpersonal construct system is used to represent persons, and such representations are relevant to a large number of interpersonal contexts; interpersonal constructs thus guide the production of many kinds of communicative strategies.

Interpersonal construct systems are the foundation upon which individuals build repertoires of strategies for adapting actions to fit persons and their psychological processes. We recognize that not all communication is carried out within a person-oriented mode; as Applegate and Delia (1980) have pointed out, some kinds of communication are carried out (quite appropriately) in ways that involve little or no recognition of the actual persons involved or of their psychological characteristics and processes. But many situations are intrinsically person-oriented: where persons want to teach or persuade some particular person or persons; where the communication focuses on the feelings and interpersonal needs or problems of interactants; where the regulation of an individual's behavior is at issue; and so on.

Persons implicitly rely on interpersonal construct systems in generating strategies for guiding actions in such situations. Interpersonal constructs allow for the representation of communication-relevant differences among listeners; because the difference can be represented, alternative strategies for dealing with represented differences can be constructed (although as was mentioned previously, such "choices" are frequently not made reflectively). Moreover, the kind of strategies generated must be related to the quality of the contrast embodied in the construct, since the nature of the construct suggests the alternative lines along which action can develop.

While the number and quality of interpersonal constructs serve as the basis for a strategic repertoire, constructs alone generally do not produce strategies. This is true for two reasons. First, strategies do not simply adapt communication. They adapt action to serve situated intentions. The conjunction of construed differences among persons and types of intentions generates a repertoire of strategies. Second, constructing a repertoire of strategies involves assessing, either behaviorally or through processes of perspective-taking, the likely response to various courses of action. Thus, the individual must represent the communication-relevant differences and work out courses of action that will work predictably. This second factor is especially important in the case of young children, since early stages in the development of interpersonal construct systems are characterized by an inability to coordinate multiple perspectives and by relatively unsophisticated modes of perspective-taking. These limitations complicate the task of constructing alternative strategies.

Research on the relation between developments in the interpersonal construct system and persuasive communication strategies supports both the general outline and many of the specific details of this analysis. In general, developmental change in the interpersonal construct system is accompanied by an increased number and increasing sophistication of arguments and appeals in persuasive messages. Both the number of interpersonal constructs (cognitive complexity) and the quality of those constructs (e.g., their abstractness or comprehensiveness) have been found to be related to the level of perspective-taking in persuasive message strategies of children and adolescents (see, e.g., Clark & Burke, 1980; Clark & Delia, 1977; Delia & Clark, 1977; Delia, Kline, & Burleson, 1979) and of adults (see, e.g. Burke, 1979; B. O'Keefe & Delia, 1979), though the particular pattern of relationships is more complicated than this brief characterization can describe (for further discussion, see Delia, Kline, & Burleson, 1979; B. O'Keefe & Delia, 1979).

Particular support for our analysis is provided by the findings of Clark and Delia (1977) in their study of children's skill at adapting persuasive appeals to different target persons. Children who failed to represent communication-relevant differences among targets failed to adapt their messages. Of the children who represented the relevant differences, only those who were relatively developmentally advanced were also able to produce different appeals for different targets. The children who represented the difference but could not translate the difference into alternative strategies frequently predicted that unadapted appeals would fail. Thus, Clark and Delia's (1977) findings indicate that the ability to represent communication-relevant differences in targets is a necessary but not sufficient condition for the

adaptation of appeals; the individual must develop a repertoire of strategies as well as a system of constructs that serve the needs of person-centered communication.

These studies have focused on persuasive communication, but other investigations have revealed relationships between construct-system development and referential (e.g., Hale, 1980; Losee, 1976; Sarver, 1976), regulative (e.g., Applegate, 1978a), feeling-centered (e.g., Applegate, 1980, in press; Borden, 1979; Burleson, 1978, 1980; Delia, Burleson, & Kline, 1979), and identity-relevant (Kline, 1980; Kline & Delia, 1980) communication. Thus, across a variety of respondents (children, adolescents, and adults), research designs (cross-sectional, longitudinal, and age-homogenous), and communicative situations (persuasive, referential, regulative, and feeling-centered), this major line of research has directly supported our analysis of the role of the interpersonal construct system in guiding communicative action.

Related research has focused on the antecedents of developments in interpersonal cognitive and communicative processes (e.g., Applegate, 1978a; Applegate & Delia, 1980; Delia, Applegate, & Jones, 1980; Delia, Burleson, & Kline, 1979; Jones, Delia, & Clark, 1979a; Sarver, 1976), situational differences in the use of communicative strategies (e.g., Applegate, 1980a, 1980b; Clark, 1979b; Kline, 1980), and differences in interpersonal cognitive and communicative abilities between social groups (e.g., Applegate, 1980b; Jones, Delia, & Clark, 1979b; Nicholson, 1976). Constructivist theoretical analyses of communicative development in childhood also have been elaborated to encompass linguistic and language-acquisition processes (e.g., Delia, 1980b; B. O'Keefe, in press; also see Werner & Kaplan, 1963); a principal focus of this theoretical work has been the transition from prelinguistic to linguistic communication (see especially Delia, 1980b), and initial empirical work has been completed on this problem within our framework (Clark, 1980).

• *Other Foci of Constructivist Research.* Although the lines of research just outlined have received detailed consideration, constructivist research, taken as a whole, incorporates a broader range of concerns. For example, research on the role of the interpersonal construct system in generating stable impressions of persons has been extended in a series of theoretical papers and empirical investigations focusing upon individual differences in the organization of beliefs by an evaluative consistency schema (e.g., H. Jackson, 1978), interpersonal cognitive developments underlying variations in certain attitude-change processes (e.g., Brady, 1979; Brady & O'Keefe, 1980; Burleson & Fennelly, in press; D. O'Keefe & Brady, 1980; Shepherd, 1980; Yeakley, 1976), and interpersonal cognitive developments underlying differences in the variability of behavioral intentions and the strength of the attitude-behavioral intentions relationship (e.g., Delia, Crockett, Press, & O'Keefe, 1975; Delia & D. O'Keefe, 1977; D. O'Keefe, 1980b; D. O'Keefe & Delia, in press; Swanson, in press).

We have also extended our framework to encompass work on the nature and organization of social interaction processes in both children and adults. In the area of communicative development, research has been conducted on the development of control over the conversational turn system and topic management procedures (Benoit, 1979; Taylor, 1977). Work has also been conducted on individual differences in the content of adult conversations (Delia, Clark, & Switzer, 1979) and on the interpretive processes involved in the interactional accomplishment of communication (Jacobs, 1977). A general framework for the analysis of conversational interaction also has been completed recently (B. O'Keefe, Delia, & O'Keefe, 1980), and research is now being undertaken on individual differences in the management of conversational resources. Work related to the constructivist analysis of social interaction, but more closely tied to the tradition of conversational analysis, has been undertaken by Jacobs and Jackson in a series of theoretical papers and empirical analyses (e.g., S. Jackson & Jacobs, 1978, 1980; Jacobs & Jackson, 1979).

This summary of constructivist research should serve to indicate that constructivism represents a general approach to communication with applicability to a wide range of specific phenomena. That is, constructivism offers a general orientation to communication processes. Rather than developing a tightly formalized theory with all concepts and relationships among concepts specified in advance, we have sought to formulate a theoretical perspective that presents a general set of orienting assumptions and concepts, such that within that framework more specific concepts and their interrelationships can be developed and investigated. Our strategy has been to develop and incorporate, in the course of treating particular domains of empirical phenomena, those concepts necessary for the satisfactory elaboration of the general perspective.

METHODOLOGICAL COMMITMENTS AND RESEARCH PRACTICES

In this section, we turn to a discussion of some of the research and methodological commitments we embrace as a consequence of our acceptance of a Weltanschauungen philosophy of science. It is important that we consider these commitments, since constructivism has sometimes been seen as a call for radical departure from most past

research practices (e.g., Becker & Hewes, 1978; Liska & Cronkhite, 1977; G. Miller & Berger, 1978). However, we have never taken this to be constructivism's thrust. When our comments addressing general theoretical and methodological issues are read in the context of constructivist research, it should be evident that constructivists endorse many of the canons of traditional research practice. In unpacking some of the implications implicit in our research practices, the following discussion is organized in two sections. We first elaborate some of the implications following from our general commitment to a Weltanschauungen orientation and then present more particular implications embedded in our specific methodological choices.

General Orientation to the Research Enterprise

Before turning to the general implications we draw from a Weltanschauungen philosophy of science, we must emphasize at the outset that such a view has not been adopted arbitrarily. It reflects our reasoned judgment that the substance of any perspective is to be found as much in its concrete research as in avowed philosophical and theoretical orientations [a view expressed in Kuhn's (1970) conclusion that a theoretical perspective is defined by its exemplary research]. More generally, it reflects our analysis of the relative defensibility of alternative conceptions of the nature of persons and of the knowledge produced in all human activities, including science (see Delia, 1977b; D. O'Keefe, 1975). If some general orientation is judged to be superior to others on the basis of the best available evidence and analysis, it seems to us silly not to adopt the more defensible view as the beginning point for theory construction and the conduct of research. Of course, a Weltanschauungen philosophy of science or an interpretive philosophical anthropology offers only the most general sort of direction to communication theorists and researchers; such broad orientations do not provide specific, concrete explanations of communication phenomena. We have publicly argued for these broad orientations, however, precisely because we think those assumptions provide the most fertile (and defensible) ground for the development of more specific theories. At the same time, we have offered constructivism's substantive theory and its methods as the particular perspective we think has the greatest promise of success for illuminating human communication. Specific theoretical formulations along with methods to translate those formulations into research are demanded if our ideas are to be elaborated through contact with the empirical world. Our aim in the present section is to suggest some of the implications for research practice of a Weltanschauungen view of science, which, if adhered to, will have the effect of altering the characteristic approach to research in our field.

Research ought to be accompanied by reflective analysis of the implicit assumptions and ordering principles underlying research questions and methods. One of the themes of constructivist critiques of traditional communication research practices concerns the utility of becoming more reflective about the kinds of research questions we asked and the methods we used to answer them. We believe that some research questions are better than others and that, in general, researchers ought to be pursuing questions that reflect the core processes pointed to by coherent conceptual perspectives (see Clark, 1979a). To get away from the "manipulate-any-variable-that-might-influence-phenomenon-X" school of research requires that one begin to become more reflective about just what kinds of conceptual perspectives are carried by the questions one asks. Moreover, any question, even if directed at core conceptual issues, may reflect commitments that go unrecognized without reflective analysis. For instance, it could be argued reasonably that much of our research to date on the development of communicative skills reflects an implicit valuing of one use of communication (the strategic, instrumental use) over other potential uses (e.g., aesthetic and world-creative uses). It has only been through becoming reflective about the kinds of assumptions carried in our decision to study communication in particular ways that this commitment has become clearly recognized.

It is sometimes suggested that adoption of a reflective stance in the conduct of research runs the risk of getting the researcher into an infinite regress in searching for beginning points (e.g., Becker & Hewes, 1978). Certainly, one implication of the constructivist perspective is that there is no bedrock of certainty from which to conduct research. However, the regress need be neither infinite nor vicious. Reflection and research are ongoing activities that interpenetrate. There is an empirical world to be learned about, even though what is learned is never wholly independent of the interpretive frameworks employed. If questions, concepts, and research tools were neutral, research could proceed with no need of reflectiveness. But, as we have argued elsewhere, the best available evidence suggests that neutral beginning points are not available. Therefore, we opt for a reflective empiricism. Such an orientation calls on the researcher to become as self-aware as possible of the ordering principles embedded in his or her questions, theoretical orientations, and research tools, while recognizing the necessity for commitment to particular points of view and methods in learning anything about the empirical world.

Research ought to be conducted so as to extend the scope and precision of substantive theoretical viewpoints. Many research projects will be designed to yield information required to deal with practical problems. However, the constructivist view of science leads to the conclusion that social problems ought not to be confused with theo-

retical problems. This is not to detract from the importance of research addressing practical problems, but it must also be recognized that the task of the social scientist is that of providing progressively broader and more precise accounts of the social world. Understandings of particular events cannot be separated from the network of theoretical schemes giving those events meaning, and as a consequence, research needs to be directed at extending the theoretical schemes themselves.

Thus, constructivism's answer to the question, What research strategy is most likely to eventuate in the illumination of human communication? should be clear: "The researcher should embrace that theoretical view he finds best and undertake programmatic research under its aegis" (D. O'Keefe, 1975, p. 177). "The task of the individual researcher is to develop, utilize, and defend a coherent theoretical system" (Delia, 1977a, p. 61). "Only by explicitly laying out an approach to a domain of phenomena and articulating a system of concepts consistent with the assumptions of that stance can one maximally refine ideas. . . . What is required is sustained, systematic research with the same system of concepts; ideas must continually have their scope and precision challenged and elaborated" (Delia, 1977b, pp. 82, 83). And such "coherent theoretical frameworks . . . are created by the hard work of individual researchers elaborating, refining, and defending their entire programs—assumptions, concepts, methods, and all" (Delia, 1977b, p. 83). In short, "Maximally productive research involves the systematic extension, elaboration, and defense of a theoretical framework" (D. O'Keefe, 1975, p. 177).

Consider the consequences of not following this strategy. If, instead of consistently elaborating a single theoretical perspective, the researcher designs studies without regard for the theoretical and conceptual baggage implicit in the concepts and methods used; whatever "findings" that result may resist coherent explanation precisely because the research did not start from a unified set of assumptions. As Delia (1977b) has observed, "Such an approach necessarily leaves the research enterprise fragmented since different theoretic frames typically serve to generate the conceptualization and measurement of each variable, while still other considerations lead to their hypothesized interrelations" (p. 74). We are, of course, describing the research strategy called "variable analysis" (Blumer, 1969; Delia, 1975a, 1977b). Within this strategy, theoretical considerations enter only in ad hoc ways. One theory generates the first independent variable; another, the second independent variable; some other theories generate the dependent measures; and still other theories are utilized in "explaining" the results. The issue is whether this research strategy is likely to eventuate in a conceptually coherent theoretical perspective, with a unified set of assumptions, concepts, and methods, that can be applied broadly to a wide range of communication phenomena. Obviously enough, our suggestion is that it is not.

Our recommended research strategy is explicitly derived from our Weltanschauungen assumptions, and in particular from the Weltanschauungen denial of the theoretical-observational distinctions (see Delia, 1977b, pp. 68, 82–83; D. O'Keefe, 1975, pp. 177–179). If scientific knowledge is not constructed on a foundation of theory-free "facts," then scientific research cannot be seen as simply the progressive accumulation of more and more such "facts." Instead, research must be seen as inevitably based on some set of theoretical beliefs, and hence any particular research investigation should be based on an internally consistent and coherent set of beliefs (a theory, if you will). But if one genuinely wants to examine the strength of that unified set of beliefs, then it should be subjected to programmatic empirical and conceptual examination, in a systematic research effort designed to test the theory's claims, to elaborate and refine the theory, to extend the theory to new domains.

But why not simply have individual researchers make sure that, for any given research investigation, the theoretical underpinnings for that single investigation are coherent? Why suggest that the individual researcher choose *one* theoretical framework? To be sure, if a researcher employed a different (internally coherent) theory for each different research problem, this would at least represent an important step beyond the variable-analytic orientation. But our view is that only a full-fledged commitment to a particular theory is likely to produce research that shows both the limitations and the generality of a given framework. If a researcher jumps from one internally consistent set of beliefs to another when the research problem changes, then one will never be sure of the genuine limitations of any particular theory, since no effort will have been made to push a theory as far as it will go. And no very comprehensive account of communication that offers insights into a broad range of communication phenomena is likely to be obtained for exactly the same reason.

Thus, an important implication of the Weltanschauungen philosophy of science we embrace is that theoretical approaches are best compared on the basis of their fruitfulness as perspectives for illuminating communication processes. The best evidence of such illuminatory power, of course, is to be found in empirical research. This point has been made before in our suggestion that if a single theoretical view is to be shared by most researchers in communication studies,

> it must come through a social process in which broad numbers of researchers are won to a particular orientation because of its perceived fruitfulness as a way of asking and answering questions. . . . Such allegiance will come not from general meta-theoretical arguments so

> much as by the development of research exemplars. . . . As theoretical positions are advanced which generate research models that can be applied broadly to a variety of questions, adherents will be won (Delia, 1977a, p. 61).

But this should not be taken as suggesting that metatheoretical discussions of alternative philosophical foundations are without value. If (as argued above) the research strategy most likely to result in theories that illuminate communication involves the systematic defense and elaboration of a particular theoretical viewpoint, then researchers will need to choose among alternative substantive theories. And one way of increasing the rationality of that initial choice is through public discussion of the coherence and defensibility of various philosophic groundings (e.g., alternative philosophical anthropologies). If one decides, as we have, that an interpretive philosophical anthropology currently offers the greatest promise for the development of substantive theory, then one's choice of substantive theoretic perspective is constrained—and constrained rationally, for that decision is made not on the basis of whim or caprice, but on the basis of public argument and analysis. But whatever particular theoretic stance the researcher ultimately adopts, that theory must be systematically challenged through empirical research, for it is in the confrontation with the empirical world that a theory's ability to illuminate communication can be most directly assessed.

Specific Implications for Research Practice

In this section, several more specific implications of our perspective for the conduct of communication research are delineated. After discussing the importance of making methodological choices appropriate to the questions being asked and the phenomena being investigated, particular attention is directed toward the implications of our perspective regarding the importance of techniques of "free-response" data collection and analysis in communication research.

Research methods should be selected or developed that are appropriate to the research question addressed and the nature of the phenomenon under investigation. Too frequently, communication researchers, like researchers in other fields, have proceeded by attempting simply to fit established methodologies to new problems with little reflection about the fit of the methods to the phenomenon being studied. Elsewhere, we have discussed the use of standard interaction analysis methods in the study of interactional organization (B. O'Keefe, Delia, & O'Keefe, 1980) and the typically unrecognized ordering assumptions rooted in traditional scaling techniques and psychometric methods (Delia, 1977b; see also Crockett, 1977) as examples of this sort of problem.

Such arguments as these are not arguments for never using standard interaction analysis methods or for never measuring anything with scales. Indeed, even the most cursory examination of constructivist research will reveal frequent use of traditional methods. We have asked subjects to answer specific questions on specific scales whenever there has been a need to secure specific information from respondents (e.g., see Delia, 1972, 1976b; Delia, Crockett, Press, & O'Keefe, 1975). In other instances, we have developed measuring instruments through the application of standard psychometric procedures (e.g., see the development of our measure of interpersonal behavioral intentions in D. O'Keefe & Delia, in press; see also D. O'Keefe, 1980b). We also have had respondents provide ratings on specified dimensions of judgment but in reference to elicited personal beliefs concerning some target figure (e.g., Delia, Crockett, Press, & O'Keefe, 1975; Delia, 1976b). Still other research has relied upon experimental manipulations within a rote-learning task (e.g., Delia & Crockett, 1973; Press, Crockett, & Rosenkrantz, 1969). In other studies, we have used standardized measuring instruments so as to establish the continuity between our own analyses and established lines of work in the literature (e.g., Delia & B. O'Keefe, 1976).

The point is this: the major dictum of constructivist methodology is not the use of a particular class of methods but the use of methods appropriate to the question and problem at hand. What we have objected to is reliance on standard psychometric measuring instruments in cases where their own ordering principles have seemed to us to distort rather than capture the processes they purported to measure.

Our search for methods fitted to research questions and problems has meant that we have had to expand the range of methodological approaches used in our own research. An early reliance on experimental manipulations has been supplemented by descriptive studies. Moreover, while we have been able to utilize role playing and detailed interviews in much of our recent research on communicative strategies, studying interaction processes has required that we employ methods of interaction analysis (e.g., Delia, Clark, & Switzer, 1979), naturalistic observation (e.g., Clark, 1980; Jacobs, 1977; Taylor, 1977), and ethnographic analysis (e.g., Applegate, 1980b). Our recent theoretical work points toward the integration of our perspective with analyses of the sociocultural schemes framing events of communication, particularly those governing the organization of interaction (see B. O'Keefe, Delia, & O'Keefe, 1980). Consequently, we are

finding it necessary to elaborate frameworks for incorporating some modes of ethnographic analysis and aspects of conversation analysis within our repertoire of routinely employed methods.

Thus, our conclusion, illustrated in our research practices, is that the communication researcher should have available every possible methodological avenue, so that methods appropriate to the question and phenomenon being investigated can be employed.

Free-response data collection techniques should be a standardly employed part of the communication researcher's methodological repertoire. Many individuals have advanced arguments in recent years for the use of procedures to secure data preserving persons' natural structurings of events. Indeed, many have made much more radical pleadings in this regard than have constructivists, though this certainly has been a major thrust of our arguments. But a number of questions may be raised about such methods; in this and the next section, we wish to discuss some of these questions.

One question concerns when structure ought to be introduced into the measurement process. Constructivists recognize that any data-collection method illuminates certain processes and leaves others inaccessible, that one cannot escape from the imposition of structure in data collection, and that (as just suggested) one may need to elicit specific information through narrowly circumscribed questions. Thus, the issue is not whether to introduce structure, but how much to introduce, when to introduce it in the research process, and the ends to which it is introduced.

Our primary reason for arguing for the greater use of free-response data collection techniques is our conviction that people's beliefs and behavior have their own internal structure and that our task as social scientists is to understand that structure. As we have already indicated, occasionally one may be able to posit very specific theoretically grounded questions that justify the collection of data precoded along specified dimensions. Too often, however, precoded data have been collected in an effort to do basic descriptive work or in efforts to test propositions derived from theories that have been elaborated (or, more properly, overelaborated) without adequate empirical grounding. Too little attention has been given to finding methods that facilitate an understanding of the pregiven natural structure of the social world. Such structure can be revealed only through the application of theoretical abstractive principles, but much can be gained by applying theoretical principles to data that are collected in ways calculated to preserve that natural structure.

Of course, even if data are collected by free-response techniques, they should be specifically relevant to the research question and the goal of the investigation. Thus, the decision to use a free-response data collection technique does not mean that one will not frame the task so that the respondent focuses on things of direct concern to the researcher. Critics of such methods sometimes imply that the use of free-response data sources involves asking only the most global and diffuse questions. And although on occasion one may ask only very general questions (e.g., "Tell me everything you know, think, and feel about this person"), usually much more specific questions will be relevant to the researcher's interest. In constructivist uses of free-response techniques, we have frequently posed questions as specific as "How are two of these three people alike and at the same time different from the third?" or "Exactly what would you say to convince your mother to let you have three or four friends over for an overnight party?" Where a specific dimension of judgment is of interest, the researcher should frame questions (whether of an open or closed nature) that focus the respondent on the question of concern.

For many research questions, free-response data are essential. It is difficult to imagine how one is to understand the structure of interpersonal impressions or the organization of social interaction without relying on sources of such data. The use of open-ended data sources, however, has advantages beyond necessity. The primary advantage is that free-response modes of data collection facilitate the preservation of persons' spontaneous natural attitude orientations by allowing them to respond in their own terms to realistic tasks—and as a consequence of preserving such orientations, more valid data are obtained.

A convenient example of the potential for greater validity through the use of free-response data sources is provided by recent research on the use of persuasive strategies. In an investigation undertaken by Miller and his colleagues (G. Miller, Boster, Roloff, & Seiboid, 1977), participants were given a list of preformulated strategies (see Marwell & Schmidt, 1967) and asked to rate the likelihood of their using each strategy (for a similar approach, see Hazen & Kiesler, 1975). This is an easy data-collection method that readily accommodates powerful data reduction and analysis techniques. But in studies undertaken by our own research group concerning communicative strategies, we have favored an alternative method of having participants actually produce their messages (in writing, interviews, or natural behavioral contexts). Work comparing the two methods has been undertaken by Clark (1979b) and Burke (1979). Clark (1979b) found highly interpretable situational differences in the kinds of strategies produced in spontaneously formulated messages. The situational variable of high self-interest, for example, elicited such strategies as threats and explicit statements of blame, while a high desire to be liked led participants to construct messages typically including such approaches as positive altercasting and emphasis on the sharing of responsibility (rather than

blame). However, when participants in a second study were asked to select from lists of strategies reflecting those used by respondents in the first study, the situational differences disappeared. When participants selected strategies rather than producing their own, the situational variables of self-interest and desire to be liked had little effect, for in all conditions participants tended to choose relatively complex adaptational strategies. In Burke's (1979) study, participants wrote messages persuading their roommates to take part in a study and then indicated which strategies on the G. Miller, et al. (1977) list they thought they had used. Burke found little relation between the strategies actually produced and those participants thought they had used or not used. Thus, Clark's (1979b) and Burke's (1979) findings buttress our belief that "the results obtained with actual messages are more likely to reflect the way in which phenomena operate within real situations because individuals normally engage in actual message composition but seldom are asked to reflect on what the underlying structure of these strategies might be like" (Clark, 1979, p. 61).

Some commentators have impugned the elicitation of free-response verbal reports from respondents by doubting the validity of "introspective" data. For instance, in questioning our own use of such data, Becker and Hewes (1978) cited Nisbett and Wilson's (1977) conclusion that persons are unable to report accurately on their cognitive processes (e.g., whether they change attitudes because of cognitive dissonance), the implication being that constructivist methods are "introspective." But our experience and research practice lead us to agree with Nisbett and Wilson's conclusions about the utility of introspective methods. As we have stressed, free-response data collection methods need not—and indeed seldom do—call on respondents to reflect and report on their cognitive processes. Participants are not asked to respond in a theoretical or reflective mode but rather in their natural attitude orientations. They are asked, for example, to indicate what is remembered about some event or person (not whether a particular sort of reconstructive schema is used in remembering the event or person), or to write a persuasive message (not to reflect an abstract strategic principles), or to give their impressions of another person (not to indicate whether they use a principle of evaluative consistency in organizing their beliefs about that person). It remains for the *researcher* to discover the nature of the underlying processes by introducing theoretically grounded abstractive dimensions for coding the data.

But several critics of free-response verbal report data have questioned the extent to which such codings can in fact separate theoretically meaningful variables from extraneous factors such as verbosity (e.g., Becker & Hewes, 1978; A. Miller & Wilson, 1979). Naturally, given our reliance on open-ended verbal report data, we have considered this question. But we typically code for qualitative features of constructs, messages, or interaction behaviors (see, e.g., our codings of impression organization, psychological-centeredness of regulative and feeling-centered messages, level of persuasive strategy, construct abstractness, and the like). Hence, it ought not be surprising that such measurements seldom are significantly correlated with the simple length of the response from which they are derived. For example, Borden (1979) found that the psychological-centeredness of appeals in messages intended to deal with a listener's distressed feelings correlated only 0.08 with the number of words in the message. Similarly, in Applegate's (1978a) studies, codings for construct abstractness and for psychological-centeredness of messages did not correlate significantly with independent assessment of verbal intelligence (WAIS vocabulary subscale) or verbal fluency (Thorndike, 1927). The one exception to this independence of our measures of social-cognitive and communicative development from verbal abilities and intelligence occurs among very young children; however, even among children our social-cognitive and message indices are typically found to be independent of such factors past middle childhood (see, e.g., Applegate, 1978a; Biskin & Crano, 1977; Scarlett, Press, & Crockett, 1971a). We have elsewhere commented on the theoretical importance of this as an indication of the emergence of interpersonal developments that are independent of general intellectual maturation (Delia & B. O'Keefe, 1979; Scarlett, Press, & Crockett, 1971b).

Of course, our measure of cognitive complexity (Crockett, 1965), which is based on the number of constructs a person uses in written impressions of peers, appears on the surface to be much more directly tied to verbal abilities. For example, significant correlations in the range of 0.40 to 0.60 between the number of words written in the impressions in Crockett's instrument and the complexity score derived from those impressions have been reported by several investigators (Burleson, Applegate, & Neuwirth, 1981; Delia, 1978; Powers, Jordan, & Street, 1979). But since the complexity score involves counting the number of characteristics ascribed to the persons being described one would expect that those respondents who mention a larger number of characteristics would naturally use somewhat more words to do so. And when *independent* assessments of verbal fluency, verbal intelligence, writing speed, vocabulary, intellectual achievement, and intelligence have been made, nonsignificant correlations in the range of −0.20 to 0.25 with our complexity measure have been found—with, as mentioned previously, only the theoretically explicable exception in early childhood (see e.g., Burleson, Applegate, & Neuwirth, 1981; Crockett, 1965); Delia, 1978; Delia & Crockett, 1973; Hale, 1980;

Press, Crockett, & Rosenkrantz, 1969; Rosenkrantz, 1961; Scarlett, Press, & Crockett, 1971a). Thus, we have a good deal of confidence that our cognitive-complexity measure assesses something other than "verbal fluency" or "verbosity," since respondents clearly do something more than just give words when they are asked to describe a peer.

Importantly, a variety of studies within and without our research group has demonstrated the superior reliability and validity of our free-response complexity measure as compared to Bieri's (Bieri, Atkins, Briar, Leaman, Miller, & Tripod, 1966) more popular rating-based measure (see the general review of D. O'Keefe & Sypher, in press). For example, though most of the variance in Bieri's measure is allocated to the evaluative valence of the figures being described, most of the variance in our procedure is allocated to the describer (Horsfall, 1969); that is, our measure is truly a measure of individual differences, while Bieri's rating technique reflects something quite different—though what that something is, as several commentators have remarked (e.g., Fransella & Bannister, 1977, p. 62), is not clear at present. Beyond all this, there is the enormous weight of predictive validity in support of our approach to coding impressions for cognitive complexity. If one is to call the measure an index of verbosity, then it is necessary to account for how verbosity relates not only to qualitative features of messages but also to phenomena such as differences in the patterns of errors in learning the interpersonal relationships in a group (Delia & Crockett, 1973; Press, Crockett, & Rosenkrantz, 1969), differences in the variability of ratings of behavioral intentions and the strength of the attitude-behavioral intentions relationship (D. O'Keefe, 1980b; D. O'Keefe & Delia, in press), differences in the stability of evaluative ratings in the sequential formation of an impression (Klyver, Press, & Crockett, 1972), differential modes of using motivational attributions in organizing impressions under different situational sets (Press, Crockett, & Delia, 1975), and so forth.

None of this means that every free-response data source yields more valid data than do other sources; questions about the potential contaminating effects of extraneous verbal factors, for example, might be raised about any number of indices based on free-response verbal reports. But we think that our particular use of open-ended data displays the potential greater validity that such data can provide.

Finally (and briefly), there is yet another advantage beyond validity in using free-response data. Because such data can be analyzed in alternative ways, they provide the basis for discovering phenomena and regularities not initially looked for. Clark (1979b), for example, was able to identify a wide range of strategies not contained in previously existing strategy assessment instruments such as that of Marwell and Schmidt (1967). Similarly, the richness of free-response data permits alternative codings to test rival hypotheses or to compare the validity of coding systems. For a number of reasons, then, we think that free-response data collection techniques should be made a standard part of the communication researcher's methodological repertoire.

Reliance on free-response data will necessitate the development of sophistication in construction and application of theoretically based schemes for content and structural analysis. It perhaps goes without saying that if communication researchers are to make extensive use of free-response data, they will need to develop proficiency in the theoretically grounded analysis of such data. Many seem to find the call for greater reliance on open-ended data intuitively appealing, but there is a general uneasiness about what to do once they are collected. Thus, Bronfenbrenner (1977) has characterized the social scientist's plight as being stuck between a rock and a soft place: on the one hand, rigor and reliability are wanted; but on the other, relevance and validity are desired. It is not always easy to see how one can have both.

To have both will require, among other things, that investigators become proficient at developing theoretically based systems for the structural/content analysis of open-ended data. This is, of course, not something in which most communication researchers receive much training. Systematic training, however, is essential. Learning to make useful sense of uncoded data is not something that can be gained through a quick reading of a relevant review essay. For instance, important work with free-response data has been done in programs of research such as Kohlberg's (1969) on moral reasoning, Selman's (1980) on the structure of social cognition, and Harvey's (Harvey, Hunt, & Schroder, 1961) on conceptual systems organization (an excellent introduction to such methods as applied within a developmental context is Damon, 1977). But in each of these instances, and in our own constructivist research on social cognition and communication, considerable training is required in the development of the theoretical sophistication, empirical attitude, and specific capabilities necessary to handling free-response data.

Despite the difficulty of training researchers in the analysis of open-ended data, we obviously are convinced that the effort is worthwhile. Among the reasons sustaining this belief are the following. First, training in the analysis of free-response data forces the researcher to become truly empirical. There is something important that is learned by interviewing study participants, reading their written impressions and messages, or making detailed analyses of their natural interactions that is not obtained in transposing check marks into numbers. By embarking on the analysis of free-response data, researchers would be

forced (even if in small ways) to begin to develop concepts that truly articulate with the empirical domain under investigation.

Second, the analysis of free-response data also forces the researcher to become more theoretical. One may, of course, take a coding scheme and apply it to free-response data without much theoretical self-awareness. However, one result of routinely using such modes of analysis should be the researcher's increasing theoretical self-awareness of the abstractive dimensions that are included in coding schemes. As we have commented elsewhere (B. O'Keefe, Delia, & O'Keefe, 1980), interaction analysts already are beginning to give more attention to the theoretical principles embedded in their coding systems. In our own studies using free-response data, we have tried to be explicit about the abstractive principle(s) underlying our coding schemes. By being led to recognize the ways a coding scheme functions as an abstractive template, researchers can, in the process of doing research, be led to a greater understanding of their theoretical commitments.

Third, development of skills in the content and structural analysis of free-response data can create the context for a truly reflective empiricism. Theory and data are brought into intimate interaction in the process of developing a scheme to analyze a certain body of uncoded data. Of course, one ought to have relatively clear theoretical principles to guide the analysis even at the outset, but theoretical constructs have to be elaborated in concrete ways to represent the character of the data. In this way, creative elaboration of the theoretical constructs is built into the research process at its very core. One is always abstracting from the data in particular ways, but the data are always richer along the dimensions of abstraction than one's initial theoretical concepts imply (or at least, we have found this to be so). The theoretical constructs thus come to be elaborated as they are embodied in the coding system in the very process of its development and application in the context of concrete empirical problems.

The foregoing obviously is premised on the assumption that the best use of free-response data involves making explicitly defined theoretical abstractive principles the basis for coding. This is not the case with all coding systems; all too frequently, researchers focus on superficial content or lexical features of free-response data. Similarly, we have argued that interaction analysis coding systems have seldom embodied clear abstractive dimensions (B. O'Keefe, Delia, & O'Keefe, 1980). Indeed, in some of our own work, we have opted for a looser approach in an effort to expand our general understanding of the content of some empirical domain (e.g., see the study of communicative strategies in Clark, 1979b; and the more general discussion of Clark & Delia, 1979). However, in most cases, we have employed rather narrowly circumscribed systems directed at specific empirical problems (the differentiation of an interpersonal impression, the organization of inconsistency in an impression, the level of perspective-taking implied in a persuasive strategy, the psychological-centeredness of communicative appeals, etc.). In most instances, the theoretical principle has been defined so that the data could be coded along the dimension. This technique of hierarchic structural and content analysis affords at least ordinal level measurement and, thereby, establishes the basis for much more theoretically decisive analysis than would otherwise be the case.

It should be noted that analytic schemes based on theoretical abstractive principles, such as those coding systems employed in our research, do not depend for their validity upon the recovery of specific intentions and beliefs. While our theory points to the determinative role of context-specific beliefs as the basis of conduct, we have recognized that the connections of such beliefs to behavior are not given in direct, one-to-one connections between specific intentions and specific actions. Rather, we have argued that context-specific beliefs are structured by general principles of cognitive and behavioral organization and are actualized through general strategies. It typically has been these general strategies and organizing principles that have been our focus. Thus, only in special cases have we sought to make an argument in terms of specific belief-action connections (e.g., Delia, Crockett, Press, & O'Keefe, 1975; or Delia & Clark, 1977), and even in these cases, the specific belief-action connections were analyzed with reference to general processes (see the discussions in D. O'Keefe, 1980b; and Delia & B. O'Keefe, 1979). Thus, despite the understanding given our work by some (e.g., Poole & Folger, 1978), our mode of analysis is no more dependent upon recovery of the specific content of intentions than is typical of most other applications of content/structural analysis of free-response and interaction data (or, for that matter, of orthodox measurement techniques). The validity of the coding lies in the predictive/explanatory utility of the theoretical abstractive principle employed.

Of course, particular problems will sometimes lead researchers to elicit more information from respondents than might otherwise be obtained. For example, in some instances, we have directly coded messages for the qualitative level of social understanding they imply (e.g., Clark & Delia, 1976; Delia, Kline, & Burleson, 1978; Ritter, 1979), but because of the limitations of such a procedure (see Clark & Delia, 1979; D. O'Keefe, 1980a), we have opted in some studies for the elicitation of participants' rationales for their behavioral choices (e.g., Applegate & Delia, 1980; B. O'Keefe & Delia, 1979); these rationales have then been coded using theoretically relevant schemes. Analogous procedures have been followed in other work. In some instances, we

have asked participants to elaborate upon their meaning for the verbal label given a particular construct (e.g., Applegate, 1978a); in other studies, we have had respondents decompose their impressions or messages into personally defined individual units and have taken these participant-generated decompositions as indices of differentiation (e.g., B. O'Keefe & Delia, 1979); in still other investigations, we have asked participants to provide ratings of their own decomposed impression units along specified dimensions such as evaluation (e.g., Delia, 1976b; Delia, Crockett, Press, & O'Keefe, 1975). Such techniques are, of course, designed to secure more valid data; but, again, the proof of the validity is not to be lodged in the "accuracy" of the judgments but in the predictive/explanatory utility of the codings. To make "accuracy" the criterion would lodge the researcher both in the hopeless task of trying to understand each participant's behavior on a case-by-case basis by reference to the content of particular intentions and in an infinite methodological regress. In general, constructivists have not found questions of accuracy very useful for just these sorts of reasons (it might be noted that we have here a methodological parallel to the problem of locating theory-free foundations for knowledge).

Finally, in considering the sorts of procedures used to elicit free-response data, it should be emphasized that care needs to be taken to recognize and control for the kinds of factors known to influence the character of data obtained by whatever procedure is employed, so that the best data possible are obtained within the limits of pragmatic constraints on time, response format, and so on. For example, in collecting free-response data that consists of verbal reports from respondents, the researcher may face decisions about whether to interview or secure written reports, whether to secure only messages or also to ask for rationales for message choices, whether to collect only constructs or also to probe the meaning behind the verbal label in which the construct is expressed, and so on. In making such choices, the researcher will, of course, be guided by the nature of the research question, the canons of accepted research practice (how to control for order effects, how to minimize anxiety in an interview, etc.), and the practical limitations surrounding the occasion of the data collection. But the researcher also will have to be guided by acquired understandings of the ordering principles embedded in the various available methods. Although they are more open than orthodox data collection methods, so-called free-response techniques are not without their own ordering principles. A large part of one's research training with free-response techniques is the development of an understanding of these principles, of just what information different methods yield. Unfortunately, much of this understanding consists of what Polanyi (1958) has called tacit knowledge, for it is typically acquired implicitly in the actual practice of research with the methods. It is for this reason, more than any other, that systematic training in such methods will be needed in graduate programs if researchers are to become proficient in their use.

Communication research should routinely involve the study of the same phenomenon under diverse conditions and with methodological triangulation. We believe that the most productive research involves the use of multiple manipulations or natural instances of some phenomenon within a single study or a series of closely related studies (for a discussion of this point of view, see Clark, 1979a). Moreover, we think it important that communication researchers begin to develop sophistication in more than one research method so that the validity of obtained results can be established through methodological triangulation. The constructivist perspective rests on the realization that one's understanding of the world cannot be separated from the conceptual schemes and methodological tools used in reaching that understanding. To learn as much as possible about the empirical world, therefore, requires that researchers do everything possible to accommodate their theoretical schemes and methods in ways that will yield understanding of the natural structure of the social world. We have argued for the use of carefully formulated abstractive systems in combination with free-response data as one viable avenue to accomplishing such theoretical and methodological accommodation.

More generally, we think that studying phenomena under diverse conditions and through methodological triangulation is the best practical means of assuring accommodation to the empirical world. The utility of this approach is represented in several dissertations completed at the University of Illinois. In one, Taylor (1977) reported his investigations of the development of the ability to manage the resources of reciprocally coordinated and coherent conversations (the turn system, topical coherence, etc.) across middle and early childhood. Taylor utilized both naturalistic observation and analysis of interaction data from structured discussion tasks. He was able to identify common developmental progressions and also to show the kinds of differences influencing the exercise of control over conversational resources in different kinds of contexts. The richness of one data source was complemented by the precision of analysis afforded by the other.

In his dissertation, Applegate (1978a; see Applegate & Delia, 1980) reported five studies using diverse approaches to the study of the relationship between the abstractness of the interpersonal construct system and the use of psychologically centered communicative appeals in regulative and interpersonal contexts. His subjects included children, college students, teacher trainees, day-care teachers, and mothers of elementary-school-aged children. The social contexts in

which he studied the variables of interest to him included friendship relationships, the mother-child relationship, and the teacher-student relationship. His methods encompassed paper and pencil free-response techniques, structured interviews, and three months of naturalistic observation of the day-care teachers who had participated in one of the interview studies. He found a strong link between construct system abstractness and psychological-centeredness of message appeals in each of the four paper and pencil/interview studies (and this despite variations in the social contexts studied and differences in methods). In the naturalistic observation study, Applegate found that the role-played communication behavior of the interview was highly consistent with the participants' day-to-day communication. However, the highly context-sensitive analysis afforded by the focused naturalistic observation also provided the basis for his identification of some of the ways in which contextual factors mediated the use of psychologically centered strategies.

We think all of us, constructivists included, have too infrequently studied phenomena under diverse conditions and with complementary methodologies. One can certainly reach the conclusion that this sort of approach to research is desirable without constructivism. However, any argument for such an orientation is bolstered by such tenets of constructivism as its emphasis upon theoretically based programmatic research and its call for methods permitting accommodation to the structure of the empirical domain being studied. More than anything else, constructivism encourages those interested in the empirical social world to study it by opening themselves as fully and as self-consciously as possible to understanding its pregiven structure.

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