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

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-
A new perspective on the process of interpretation is most commonly expressed in the phrase "a philosophy of interpretation." This term suggests that interpretation is a process of creating meaning from ideas, and that this process is not static, but rather fluid and dynamic. The act of interpretation involves the active participation of the interpreter, who brings their own biases, assumptions, and experiences to the process of making sense of the text. This process is not simply a matter of applying a set of rules or guidelines, but rather a process of personal engagement and creativity.

The process of interpretation is often described as a "meditation" on the text, where the interpreter engages in a series of reflective questions and responses to arrive at a deeper understanding of the meaning of the text. This process is characterized by a sense of openness and flexibility, where the interpreter is free to explore different possibilities and perspectives, and to adapt their understanding as new information is encountered.

However, this process of interpretation is not without its challenges. The interpreter must be careful to avoid imposing their own beliefs or biases onto the text, and to remain open to the possibility of different interpretations. This requires a level of self-awareness and critical thinking, and the willingness to engage in a process of reflection and reconsideration.

Despite these challenges, the process of interpretation is a powerful tool for deepening our understanding of the world around us. It allows us to see things in new ways, and to uncover hidden meanings and insights that may not be immediately apparent. As such, it is an essential part of the way we engage with the texts that surround us, and it is a process that we should all strive to cultivate and develop over time.
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, 1977a; 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 (1980) naturalistic observation of nursery school teachers’ communicative strategies, S. Jackson’s (1977) analysis of the perception of political candidates, D. O’Keefe’s (1980) 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
ported that this information in the interpersonal communication system (a)
subsequently emerges in the form of a "conversation". This "conversation" is a device, if you will, that provides the means by which the interpreter of the
message is able to "interpret" the message. This "interpretation" is not a process
of "decoding" the message in the sense that a message is "decoded" and then
interpreted. Rather, it is a process of constructing a meaning for the message
by the interpreter. This process is not linear, but rather involves a dynamic
interaction between the interpreter and the message. The interpreter does not
simply "decode" the message and then "interpret" it. Rather, the interpreter
constructs a meaning for the message based on their own experiences and
knowledge.

Oral and written language are important tools in this process of
communication. Oral language allows for immediate feedback and
interaction, while written language allows for reflection and the ability to
technical expression. Both are essential in effective communication.

The "conversation" is not a static event, but rather a dynamic process that
continues to evolve over time. This process is characterized by
interaction, negotiation, and interpretation. The interpreter is not merely
a passive receiver of information, but rather an active participant in the
communication process. The interpreter constructs meaning based on
their own experiences, knowledge, and the context in which the message is
received.

The "conversation" is not a linear process, but rather a
recursive one. The interpreter constructs meaning, which is then
interpreted by the speaker, who then responds, and so on. This process
continues until a consensus is reached or a mutual understanding is
achieved.

This process of communication is not only important for interpersonal
relationships, but also for organizations and society as a whole. It is
through this process that ideas are shared, information is exchanged,
and cooperation is achieved. The "conversation" is the foundation upon
which all effective communication is built.
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 (1975), 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 shared-ness 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 non-conscious 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
in some respects, these mental processes, be discussed later in the text. However, the brain, which is concerned with the interpretation of the world, is not the only part of the brain involved in processing messages. The heart, the lungs, and the muscles are also involved in the processing of messages. The heart, for example, pumps blood to the brain, and the lungs take oxygen from the air and deliver it to the blood. The muscles, on the other hand, are involved in the movement of the body.

The heart is the organ that pumps blood throughout the body. The blood carries oxygen, nutrients, and hormones to the cells of the body. The lungs take oxygen from the air and deliver it to the blood. The muscles, on the other hand, are involved in the movement of the body.

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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.
produce impressions that are expressed beyond the information that forms the basis of the decision. In such cases, the information is considered as irrelevant, and the individual's decision is based on their emotional response to the stimulus. This is known as the emotional response theory, where the individual's emotional response to the stimulus is more important than the objective information provided.

In this context, we can discuss the implications of our findings and the role of emotional influence in decision-making. Emotional responses can significantly impact the decision-making process, leading to outcomes that may not align with rational analysis. Understanding the role of emotional responses in decision-making is crucial for developing effective decision-making strategies, especially in complex and dynamic environments.
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, 1950a; 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 constructed 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, 1979; 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, 1960), 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, 1979).

Other Focus 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.

METHODODOLOGICAL 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 Weltanschaungen 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 definability 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 definable 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 definable) 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 ask and the methods we use 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 leads 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-
The relationship between computer science and communication phenom- mena has been a focal point of recent research. The view is that the study of communication processes is a unique domain that can be applied in a variety of ways, including computer science, engineering, and psychology. The importance of understanding communication phenomena is often highlighted in discussions of complex systems and their interactions. This interdisciplinarity is evident in many areas of computer science, particularly in the fields of artificial intelligence, signal processing, and network theory. The study of communication phenomena is crucial for the design and analysis of communication systems, which are essential for modern technology and society.
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
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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 (1976a) 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, 1976a; Biskin & Grano, 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 upon 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—when, 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;
The research on the analysis of free-response data, researchers would be
interested in the traditional methods for analyzing the data. By one-
method, researchers often use subjective judgments, such as
coding and categorization, to analyze the data. These methods
are often criticized for their lack of reliability and validity.

However, the analysis of free-response data requires a more
systematic approach. This approach involves computer-
assisted content analysis, which allows researchers to
systematically code and analyze the data. The use of computer-
assisted content analysis has been shown to increase the
reliability and validity of the analysis.

In addition to the traditional methods, researchers also
can use statistical methods to analyze free-response data.
These methods include regression analysis, factor analysis, and
multivariate analysis. These methods allow researchers to
identify patterns and relationships within the data.

Overall, the analysis of free-response data requires a
combination of subjective judgment and systematic
approach. By using both methods, researchers can gain a
more comprehensive understanding of the data.

References
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
The study of children's educational attainment, teacher effectiveness, and the role of parents in educational and social development is crucial. The interplay between these factors has been a topic of extensive research. In 1990, the National Academy of Sciences published a report titled "Children's Development, Learning, and Education," which emphasized the importance of early intervention in preventing educational problems.

In their study, the researchers found that children who received early intervention showed significant improvements in their academic performance. This suggests that early identification and intervention are crucial in preventing educational problems.

The report also highlighted the importance of teacher training and professional development. Teachers who received regular training were more effective in their teaching, and their students showed improved academic performance.

Moreover, the report emphasized the role of parents in their children's education. Parents who were involved in their children's education were more likely to have children who showed better academic performance.

In conclusion, the study of children's educational attainment, teacher effectiveness, and the role of parents in educational and social development is crucial. Early intervention, teacher training, and parental involvement are key factors in improving educational outcomes.
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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The effects of social interactions on communication development: A review of the literature. (p. 1-12)


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Title: The Effect of Cognitive Styles and Socioeconomic Status on Academic Achievement

Author: Smith, J. A.


Abstract: This study investigated the relationship between cognitive styles and academic achievement among students from different socioeconomic backgrounds. The research design involved a quasi-experimental approach, where participants were assigned to experimental and control groups based on their cognitive styles. The results indicated a significant positive correlation between cognitive flexibility and academic performance, with students from higher socioeconomic backgrounds showing greater cognitive flexibility and higher academic achievement. The study also highlighted the importance of considering cognitive styles in educational planning and resource allocation to ensure equitable educational opportunities.


