















COMMUNICATION RELATIONS

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Research Series No. 153 April, 1979 Communication scholars and researchers are presumably well aware that communication relations differ from physical relations (relations between things) in certain significant ways. Yet, the literature on communication is remarkably imprecise in its naming and description of communication relations. For example, otherwise very careful researchers speak of the "impact" of mass media. Others employ what must, in any case, be a rather loose notion of causation. And many definitions of communication, though they avoid terms for physical relations, nevertheless approach a reduction of communication relations to the form of physical relations. Lasswell's famous definition is one example. And even definitions expressed in terms of information or meaning manage to hint at positivism through such relational terms as "transfer" or "sharing." Berlo's (1978) notion of "make believe" and Merten's (1978) notion of "reflectivity" are exceptions which underscore the rule that communication scholars have not yet formulated a clear concept of communication relations as a special class of relations.

We note, for example, that the bulk of empirical studies in communication employs correlational concepts and techniques. One advantage of correlational techniques is that they are readily available. That their application demands the assumption that the relations between the phenomena correlated are independent of their relations to "external" phenomena is apparently not of overwhelming concern to communication researchers. If it can be shown that there is some measure of correlation between television violence and individual expressions of violence, the conceptual jump to the conclusion that if the incidence of television violence were reduced expressions of individual violence would also

be reduced, is apparently considered negligible. Or if it can be shown that there is some measure of correlation between what A says to B and B's subsequent response, it is apparently not considered especially difficult to conclude that B is acting on A's intentions. After all, situations in which B's response does not correlate with A's statements can readily be categorized as situations in which communication did not "work" for any number of ad hoc reasons.

Our main point in this paper is that communication relations constitute a special category of relations which, among other characteristics, do not lend themselves especially well to correlational analysis. We shall argue that communication relations possess a structure which is fundamentally different from that of physical relations. Or communication relations are not just physical relations involving language as a medium. They are non-positivistic or dialectical relations.

On Relations

In this section we shall attempt to differentiate between the structures of physical (positive) relations and communication (dialectical) relations. Positive relations, as the name indicates, are relations between or among phenomena through characteristics which these phenomena themselves do not control. Negative characteristics (e.g., the quality of a phenomenon being not what it is not) play no role in such relations. For example, we may attribute to a thermostat the quality of being not a source of heat. But that quality plays no role in a description of the relationship between the thermostat and a heat source. We would not say that the thermostat signals the heat source because it is itself not a source of heat. We would say, rather, that the thermostat signals the heat source because the temperature around it has reached a level which triggers the thermostat. Or we would describe the relations involved in terms of causal sequences in which pairs

of elements are juxtaposed as cause and effect. Such causal sequence descriptions presuppose a finite and determinable number of degrees of freedom in the relation enabling us to calculate a specific probability for the occurrence of a specified effect given a specified causal condition.

In short, physical relations in principle, can be reduced to series of dyadic relations which, in turn, can be recombined into strings or circles to form unending sequences or iterating systems of explanations. Very complex explanatory systems can be described and constructed by combining different causal sequences in sequence (as when we would describe the functioning of an automobile or a computer).

Attempts to describe communication processes in the form of causal or quasicausal sequences are, of course, quite common. The concept of stimulus and response are an obvious example of a causally related pair of phenomena. The sendermessage-receiver-feedback sequence (cf. Schramm, 1955) is an example of an iterative system of dyadic cause and effect relations. And many other models of communication processes take a similar basic form though they may differ in the ways in which they punctuate these processes.

The key problem is that these strings of dyadic relations never quite suffice as bases for describing communication relations. Lasswell's famous formula exhibits the strain of overextension: "somebody says something to someone... with some effect." Consider the "pointed silences" people on occasion employ vis-a-vis each other. In such cases "saying nothing" is "saying something." Or consider the painful pauses which, on occasion, occur during cocktail party conversations. Or consider the popular saying: "no news is good news." Clearly, communication "effects" do not depend on somebody saying something. And somebody saying something does not necessarily have an "effect" on somebody else (though it will always have some consequence for the speaker himself).

There are several problems with the causal sequence formula as a basis for describing and comprehending communication relations. One problem arises from the uncautious use of the term "effect." If some phenomenon is to be considered an effect of some other phenomenon it must, at least be subject to a finite and determinable number of degrees of freedom relative to the allegedly causal phenomenon. And it is clear that this condition is not met in communication relations. Furthermore, a particular cause and effect relation should presumably be replicable with a high degree of predictability. And this is certainly not true in general with respect to communication "effects."

But the most serious weakness of the formula is that it implicitly reduces the act of <u>saying</u> something to a positive influence. The implication is that a given <u>statement</u> is capable <u>by itself</u> of limiting the degrees of freedom of the individual to whom it is addressed. To accept this implication we would have to overlook the empirically demonstrable fact that one can say to another only that which the other is capable of comprehending.

Specifically, when talking (or any other means of <u>communication</u>) is involved in a relation, the causal sequence breaks down <u>unless</u> we assume the receiver of the statement to be a fully structured entity capable only of an absolutely the statement and specifiable set of responses <u>given</u> the statement. As a <u>general</u> assumption, this is clearly entirely unwarranted. For example, people can and do refuse to respond to the statements of others. Consequently, it cannot be statements that produce responses when responses occur. There must be some other element which combine with statements to produce communication responses.

Or, to relate the above to the terminology introduced earlier, the statements of others form one component of a dialectical triad of which another component is supplied by the "receiver." And the third component -- communication -is a product or resolution of these sender and receiver components. A dialectical

triad cannot be reduced to causal sequences. It is a basic unit (as is, of course, the causal dyad) describing <u>transformations</u> (while the causal dyad describes <u>transfers</u>).

On Triadic Relations

Consider a situation in which A says something to B and B subsequently responds entirely as A intended. On the face of it such a situation would seem well suited for causal analysis. But as we noted above, a causal analysis requires the assumption that B is subject to absolute limitations as regards his degrees of freedom relative to the message produced by A. Or, in using causal analysis we are inferring that there is a specifiable probability that B will respond in a predictable manner to the message issued by A.

But we know that B's response, no matter what its relation to A's message, is not subject to absolute limitations. Or, we know that B's number of degrees of freedom is variable and under B's control. Thus, if B responds as predicted by A there must be some "reason," other than A's message for B's choosing this rather than some other response. It seems empirically evident that that "reason" is not identical with a constant "urge to respond predictably" which might then because it is a constant, safely be ignored for descriptive and analytical purposes. To "respond predictably" to other people's messages is a particular way of being sufficiently distinct to have acquired labels. Thus, we speak of someone who regularly does what he is told as "obedient," and of someone who regularly responds agreeably to the statements of others as a "yes-man." These very distinctions belie the generality and constancy of some urge to respond predictably.

Still, if one is to be able to say anything in general about the relations between intentions and messages and between messages and responses (and, in a broader sense, between senders and receivers), it is necessary to identify some

general principle in relation to which communication encounters may reasonably be said to be ordered. We have sought to establish that this principle must not arbitrarily limit the number of degrees of freedom of either sender or receiver. We can, therefore, categorically reject any principle which would favour causal (dyadic) analysis since all such principles necessarily would involve an imposed limitation of the kind identified.

In our search for such a principle we have settled on the concept of completion. Our proposition is that the ultimately controlling "urge" in communication encounters is the "urge" to complete the encounter. We are not saying that this "urge" for completion is necessarily satisfied in all communication encounters. We are saying, however, that completion is sought in all encounters and that if it is not attained in a particular encounter some sense of failure, embarrassment, or even guilt is experienced by the participants. We further theorize that this urge for completion is a particularized manifestation of a generalized quest for order which logic would seem to demand must underlie all communication efforts.

Examples of manifestations of the urge to complete communication encounters are not difficult to come by. Whether in casual conversation with a stranger, or in romantic interludes, or in intricate philosophical arguments we sense the urge to attain some appropriate completion. Our sense of justice and our preference for television features which raise no problems they do not resolve are also manifestations of our urge for completion in communication encounters.

The concept of completion implies a form of resolution akin to problem resolution. The concept derives from drama and, as such, connotes a synthesis of opposing conditions, events, purposes, or roles. In other words, the concept implies that communication, both in general and in particular instances, involve a resolution of opposites. In formulating a statement we attempt to resolve an opposition between what is and what could be in relation to some aspect of the

way in which we order ourselves and others. And in the act of attending to a statement issued by someone else we attempt to resolve a similarly grounded opposition. A statement issued is thus a synthesis implying or merging the opposites which it synthesizes. A statement attended to, on the other hand, is a thesis which requires for its completion into a response an opposing element of order. And a series of statements by opposing individuals serves as a basis for generating that completion referred to as a communication relation.

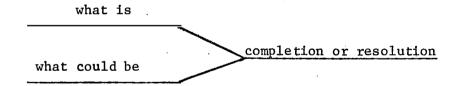
Consider a simple example. A passes his acquaintance B on the street. Both have noticed each other. A is happy to see B but lacks the time for a lengthy conversation. A attempts to resolve the opposition between his happiness to see B and his lack of time for a conversation by uttering a warmly expressed: "Hi! B" while he continues to walk. B may, of course, respond in any number of ways. But he is likely to respond in a way which makes it possible for him to complete the encounter appropriately in the context of his relationship with A and in the context of the scene on which they find themselves. His choice of response may range from no response at all (a form of completion which A may feel is less than final) to indicating that he would like to take some time to renew their acquaintance (a form of completion which is likely to leave B feeling embarrassed unless A, in turn, responds).

Several points warrant emphasis in relation to his example. First, A's utterance can clearly not be considered causally related to B's response unless we ignore the range of possible responses available to B. Second, just as A's utterance constitutes a resolution of a problem, so does B's utterance (whatever it may be). B's presence is one term of A's initial problem (the other term is formed by A's intentions regarding B). And A's utterance is one term of B's problem (the other term is formed by B's intentions regarding A). Third, both select their utterances (verbal and nonverbal) such that an appropriate completion of the encounter is likely.

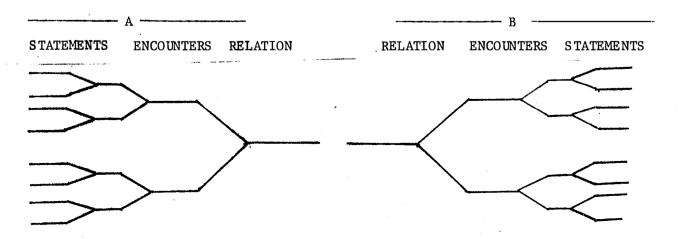
With the above discussion in mind we propose the following generalizations:

- 1. Any <u>statement</u> is a statement made by someone and as such it completes or resolves an opposition between a perceived and an intended state of affairs. A "statement" may be of any length ranging from a single gesture to a booklength argument, or to the historical record of an individual's life.
- 2. Any act of <u>responding</u> to another's statement is itself a statement completing or resolving an opposition between a perceived and an intended state of affairs;
- Any communication <u>encounter</u> completes or resolves the intentions of two or more individuals;
- 4. Any communication <u>relation</u> completes the communication encounters of two or more individuals.

Each of these generalizations possesses a triadic structure of the following form:



And a simplified illustration of a communication relation including its elementary encounters and statements can be outlined as follows:



Each individual (A and B) will, of course, be involved in many such relations. But while our hypothesized "urge for completion" may warrant our referring to relations as processes, the ground for conceptualizing a given individual's communication activities (i.e., the totality of his communication relations over time) as a single process is less readily identified. Though it seems reasonable to assume an element of continuity grounded in the individual, environmental variations are as apt to be the source as they are to be the result of the dialectical transformations which constitute individual development. Thus, any "process" of individual development is likely to be an epiphenomenon apparent only after the fact and with generous simplifications.

But even if it seems over-ambitious to aim for a complete specification of total individual developmental processes it is not only possible but indeed popular to conceptualize particular elements or stages in virtual isolation from other stages in such processes. For example, the formative years (child development, adolescence) have been subject to a great deal of theorization and research. And so has such elements as formal education, family life, occupational development, and aging.

Though such "modular" studies based on individuals as statistics may be the best that science can do for individual development, it does seem useful to temper such studies with at least a generalized concept of developmental processes. For example, a great many studies, recommendations, and practices pertaining to matters of communication overemphasize the malleability of individual developmental processes. Even children are not as continuously malleable as those who study the influence of television will have us believe. And adolescents are not as continuously malleable as educators often imply.

Two characteristics of developmental processes are often neglected in the context of statistical studies. Both derive from the differences between causal

and dialectical processes. One is that people are always part of their own development. They supply that opposition to developmental efforts or influences which makes their development possible. For example, an exposure to television violence may lead some individuals to develop an abhorrence of violence in all its manifestations. And it may lead others to develop a personal interest in the possibilities of violence.

The second characteristic often neglected in statistical studies of communication behavior is that development proceeds through transformational moments. Such transformational moments may be frequent for some individuals and rare for others. Or they may occur with varying frequencies over the life of an individual. They may be moments of crisis or moments of exhilarating insight. In formal education (unlike skill training) we often operate as if such moments happen to coincide with a regular time table. We provide the inputs, but fail to generate the moments necessary for the transformation of such inputs into development.

Triadic Relations in General

The concept of a triadic relation should not be confused with the concept of multidimensional or multivariate relations. The latter are variations of causal analysis and must ultimately involve variables which "behave" independently.

A triadic relation involves two variables merging to form a third which, in turn, "contain" both but is identical with neither. For example, the command: "give me that book" "contains" (implies and limits) both elements of a perceived situation (e.g., you are closer to that book than I am) and elements of an intention (e.g., I want that book in my hand). But the command is identical with neither of the elements it "contains" — though it combines them in the sense of resolving their opposition.

Similarly, communication between two people involve, not a series of dyadic or causal relations, but a complex of triadic relations summarized in a communication encounter or relation which "contains" elements of both individuals but which is identical with neither. A communication encounter is a unit or totality which takes its qualities from the statements and responses of both or all participants and which as such is indivisible. Thus, a communication encounter is not an instance of shared meaning, transfer of information, or other causal equivalent. It is a unit of action which "contains" the differences or oppositions between or among a particular set of individuals.

Communication Relations: Toward a Formalization

The argument outlined above is applicable to all relations within the context of communication. Whether one is focussing on the relations between "thoughts" and "words," "statements" and "responses," or "senders" and "receivers" one is contemplating an instance of a <u>communication</u> relation. In this section we shall attempt to develop a formal definition of that relation.

Communication relations are relations among units whose degrees of freedom relative to each other can be determined only through or by means of a meta-unit. For example, the relation between a thought pattern and a word for that thought pattern can be determined only through another thought-pattern of the relation as such. It is generally accepted that words do not by themselves contain meaning. It is perhaps less well understood that thought patterns, taken individually, do not contain meaning either. Meaning is a relation -- a thought pattern which relates two or more thought patterns.

The prototypical communication relation is a relation of <u>non-identity</u> the extreme form of which is the relation between a unit and its negation or opposite. Generally, however, the non-identity relations of communication are <u>partial</u> non-identities. Thus, a thought is not the thing thought. But neither is a thought the word used to express it. Or, a thought is not only a non-word, it is, at least, also a non-thing. And in this sense, thoughts, words, and things are partial non-identities relative to each other.

The <u>assertion</u> of a thought in the form of a word or words is a <u>transformation</u> of the thought into something which it is not. A transformation, quite unlike an encoding operation, is a <u>mediated</u> relation. We take encoding to involve an insomorphic translation. But a transformation involves an interpretation of an opposition between a unit and its (partial) negation. A spoken sentence is thus not isomorphic with the thought(s) in which it is grounded. It is in the nature of an <u>interpretation</u> of the opposition between what is thought to be the case and what is thought to be not the case.

In other words, a spoken (or written) sentence <u>determines</u> a thought in and for the speaker (or writer). And in so doing it merges what is thought to be the case and what is thought to be not the case. The sentence: "this is a chair" is <u>both</u> a way of saying what I think "this" is and what I think "this" is not. And the sentence: This is a chair" is thus simultaneously an <u>assertion</u> and a <u>negation</u>.

We take the above to be a general characteristic of <u>all communication</u> relations. That is, all acts of communication (relative to the actor) are formed as simultaneous assertions and negations. To "say" something is to determine one's thoughts. Or it is to transform one's thoughts from immediate experiences into interpretations of what they are <u>and</u> of what they are not. In more commonly used terms, the meaning of any act of communication (statement) encompasses or derives both from what is said and from what is not said.

Consequently, even if we, given the above, were to assume that everyone within a particular epistemic community had developed a complete understanding of each other's <u>assertions</u>, we would still not be able to conclude that they are able to understand each other's <u>meaning</u>. That is so since the meaning of an assertion is grounded in both the possibilities it contains or includes and in the possibilities it excludes. Those possibilities are <u>in</u> the individual contemplating any given assertion. And since <u>any</u> statement necessarily both contains and excludes possibilities there is likely to be no way for two or more communicators to fully understand each other's meaning.

In sum, a statement is a triadic entity merging assertion and negation in its meaning. Similarly, communication is a triadic entity merging positions and their negations in encounters and relations. The act of making statements addressed to another is an act of position-taking which does not, by itself, constitute communication. Or, by itself, an act of position-taking is an incomplete act of communication.

An act of position-taking is completed as an act of communication through its negation in the form of an opposition. For example, the statement: "I love you" requires for its completion as an act of communication an opposing statement such as "I love you too" through which the <u>communicational</u> resolution "we love each other" may be generated.

Actually, individuals may generate their own opposition by taking the role(s) of others against themselves. And such instances of self-generated communication encounters may provide the best clue to the minimum requirements for communication. The taking of role(s) (positions) of others against oneself involves the adoption of a <u>critical</u> stance relative to one's initial position. The key element here is that the responses one generates to one's own statements in such instances of self-communication are generated from a different mode of thinking than that

from which one's initial statements were generated. One, as it were, argues within oneself and through such arguments one generates such communicational resolutions of one's positions as are implied in statements such as "most people think that...."

To generalize, our proposition is that the key characteristic which sets communicational relations apart from positive or causal relations is that they involve resolutions of different positions. Thus, if the responses B generated to a position stated by A were entirely a function of A's stated positions we would conclude that the relation thus exemplified would not be a <u>communication</u> relation. Or, if B's responses were <u>effects</u> of A's statements, the relation between A and B would not be a <u>communication</u> relation.

By implication, the basic ideals of communication encounters and relations must be stated in terms of their possibilities rather than in terms of their probabilities. Or, "mutual understanding" and "sharing of meaning" are not ends but means of communication. One attempts to comprehend the statements of others in order to generate the opposition through which communicational resolutions are accomplished.

In sum, a communication relation is a non-identity relation in which opposites are resolved by a synthesis which "contains" these opposites yet is different from them. A prototypical example is the theatrical drama where the opposing roles (communication relations) of the actors serve to generate a resolution to which all contribute and from which all derive possibilities unique to that particular relation.

In the context of the above definition, "communication" may be defined as a process of generating communication relations and of generating and exploiting the possibilities inherent in the non-identities of the participants in these relations.

Some Implications

The view outlined above has a number of implications for research and practice in communication. We mentioned, at the beginning of this paper, the prevalence of correlational studies in communication research. And we are now in a position to identify more specifically the weaknesses of that approach to the study of communication relations. In essence the approach presumes that "statements" determine the receiver's thoughts. And since it focusses on the probabilities of communication relations, it encourages neglect of the possibilities of those relations. For example, while one of the possibilities associated with the enactment of violence on television indeed is to imitate such violence that is, by no means the only possibility. Other possibilities in relation to television violence is to develop an emotional and moral repugnance to violence, or to develop a fear of violence, or to develop an understanding of the limitations of violence as a means of resolving oppositions. Vicarious violence may even serve as a catharctic experience without which some (many?) people would become violent.

Violence is always a <u>possible</u> way of resolving the oppositions in communication relations. And insofar as one would condone or even advocate violence in certain contexts which one would identify as "calling" for violence it may behave one to differentiate between "appropriate" and "inappropriate" violence in relation to sweeping correlations between television violence and real life violence. Indeed, were one to accept the argument that humans are <u>fundamentally</u> violent, one might further make the case that television has contributed to the "containment" of violence.

If one is willing to argue, on the basis of available correlations, that many people lack the critical ability to generate a non-violent (or "appropriately" violent) approach to communicational oppositions, from illustrations of violence

one would, presumably, have to account for this state of affairs. And at this stage in the investigation, at least, one would have to focus on the possibilities available to particular individuals in particular communication relations. One is likely, then, to find that the initial correlations hide a great many variations in the behavior of a given individual across communication relations.

There are many other contexts in which correlational modes of thinking and methodologies might fruitfully be augmented by a mode of thinking concentrating on the "ways" of opposition. For example, much has been made of the "impact" of television on "primitive" cultures. Clearly, the introduction of television to the far north, for example, does constitute a challenge to the Inuit cultures there. But it seems entirely too shortsighted and even arrogant to presume that such a challenge is only destructive. The essence of a culture is its developmental resources in the face of challenge. Thus lamentations regarding the destruction of "traditional" Inuit culture might appropriately be tempered with celebrations of the new opportunities emerging from the opposition between that culture and television. Cultural traditions are, after all, not just anthropological artifacts to be preserved in their pristine state. They are living, functioning systems of communication relations which possess their own peculiar developmental possibilities.

Or, consider the example of modern education with its constantly shifting views of the relative roles of teaching and learning. Yet, positivistic views of teaching (and of education in general) persist notwithstanding an obvious and persisting gap between what is taught and what is learned. The teaching role is the prototypical oppositional role. But if cast in a positivistic mode it can generate possibilities only be accident.

There are many other examples of communicational contexts in which the "ways" of opposition might fruitfully be investigated. In a sense, we are

proposing no more than that "receivers" be included in communication "models" as the living, active creatures they clearly are. Scientization of communication on behalf of senders has led many both to overestimate and to underestimate the power of communication. We generally overestimate our ability to communicate to each other in the sense of generating a common understanding. And we generally underestimate the developmental possibilities inherent in the fact that we are different from each other -- possibilities realizable only through our efforts at communicating with each other not to the end of achieving a common understanding (i.e., destroying our differences), but to the end of building on our differences.

Summary

We have sought to outline a concept of communication relations which specifically differentiates such relations from causal relations. We argued that communication relations, unlike mechanical relations, cannot be adequately described in terms of strings of cause and effect dyads since such a procedure demands the assumption that an actor's degrees of freedom be a determinable function of the statements of other actors. That assumption, in effect, reduces communication to a form of physical influence or causation.

As an alternative to modes of analysis involving causal dyads, we proposed a mode of analysis involving dialectical triads as the basic unit of analysis. The fundamental principle of triadic units is the opposition inherent in non-identity relations. Unlike causal relations, where effects are attributed to the causal agent given the structure of the agent acted upon, dialectical (or triadic) relations produce resolutions of oppositions which "contain" elements of both agents but which are attributable to neither agent.

Viewed as a triadic unit, communication is thus neither what a sender does nor what a receiver does. It is a resolution which "contains" their differences.

In this sense mutual understanding is not an end but a means to communication.

The end of communication is the resoltuion (in one form or another) of differences or opposition manifested in our urge to complete communication encounters.

In identifying opposition as the fundamental principle of communication we mean to emphasize both the indirectness and the cooperation characteristic of communication relations. We mean also to emphasize, however, that the basic function of communication is not to destroy our differences in the name of mutual understanding, but to understand each other in the name of generating and exploiting those differences without which we would have no developmental possibilities.

REFERENCES

- Andison, F. Scott. "TV Violence and Viewer Aggression: A Cumulation of Study Results 1956-1976." <u>Public Opinion Quarterly</u>, Vol. 41, No. 3 (Fall, 1977) pp. 314-331.
- Ashley, W. Ross. "Principles of the Self-Organizing System" in <u>Principles of Self-Organization</u>. Edited by Heinz von Foerster and George W. Zopf. New York: Pergamon Press, 1962, pp. 255-78.
- Bateson, Gregory. "The Logical Categories of Learning and Communication," in Gregory Bateson, Steps to an Ecology of Mind. New York: Ballantine Books, 1972, pp. 279-308.
- Berlo, David K. "Communication as Process: Review and Commentary" in Communication Yearbook I. Edited by Brent D. Ruben. New Brunswick, N.J.: Transaction Books, 1977, pp. 11-27.
- Black, Max. "Some Puzzles about Meaning," in <u>Human Communication: Theoretical</u>
 <u>Explorations</u>. Edited by Albert Silverstein. New York: John Wiley & Sons, 1974, pp. 81-93.
- Breger, Louis. From Instinct to Identity: The Development of Personality. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1974.
- Gandhi, Ramchandra. <u>Presuppositions of Human Communication</u>. Delhi: Oxford University Press, 1974.
- Gurvitch, G. The Spectrum of Social Time. Dordrecht: D. Reidel Publishing Company, 1964.
- M. Kosok. "The Systematization of Dialectical Logic for the Study of Development and Change." <u>Human Development</u>. Vol. 19 (1976) pp.
- Lawler, J. "Dialectic Philosophy and Developmental Psychology: Hegel and Piaget on Contradiction." Human Development. Vol. 18 (1975) pp. 1-17.
- McCulloch, Warren S. "Commentary," in <u>Communication: Theory and Research</u>. Edited by Lee Thayer. Springfield, Ill.: Charles C. Thomas, Publisher, 1967, pp. 412-28.
- Merten, Klaus. "Reflexivity in Human Communication," in <u>Communication Yearbook</u>
 <u>I</u>. Edited by Brent D. Ruben. New Brunswick, N.J.: Transaction Books, 1977, pp. 121-31.
- Moore, Edward C. <u>Charles S. Peirce: The Essential Writings.</u> New York: Harper & Row, Publishers, 1972.
- Riegel, K. F. "The Dialectics of Human Development," American Psychology (31:689-700) 1976.
- Rosch, Eleanor. "Linguistic Relativity" in <u>Human Communication: Theoretical Explorations</u>. Edited by Albert Silverstein. New York: John Wiley & Sons, 1974.

- Rossiter, Charles M. Jr. and W. Barnett Pearce. <u>Communicating Personally: A Theory of Interpersonal Communication and Human Relationships</u>.

 Indianapolis, Ind.: The Bobbs-Merrill Company Inc., 1975.
- Ruben, Brent D. and Kim John Y. General Systems Theory and Human Communication. Rochelle Park, N.J.: Hayden Book Co., Inc., 1975.
- Scheflen, Albert E. How Behavior Means. New York: Gordon and Breach, 1973.
- Schramm, W. "How Communication Works," in <u>The Process and Effects of Mass</u>
 <u>Communication</u>. Edited by Wilbur Schramm. Urbana, Ill.: University of Illinois Press, 1955, pp. 3-26.
- Scott, J. P. "Critical Periods in Behavioral Development." Science, Vol. 138 (1962) pp. 949-58.
- Sommerhoff, G. "The Abstract Characteristics of Living Systems," in <u>Systems</u>
 <u>Thinking</u>. Edited by F. E. Emery. Penguin Books, Ltd., 1969.
- Thayer, Lee. <u>Communication and Communication Systems</u>. Homewood, Ill.: Richard D. Irwin, Inc., 1968.
- Ziller, R. C. "Group Dialectics: The Dynamics of Groups over Time," <u>Human</u>
 <u>Development</u> (Vol. 20, pp. 293-308) 1977.

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