

**Research, Principles, and Practices in
Visual Communication**

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3. Communication Models

prepared by Erwin P. Bettinghaus

3.1 Ways of Looking at the Communication Process

3.11 The Interaction Model discussed in Chapter 2 represents a carefully prepared and fully developed approach to communication; in many ways it is the most useful approach yet outlined. However, it is but one of many ways of looking at the process of communication. Psychologists, sociologists, businessmen, physicists, agricultural specialists, and journalists represent only a few of the professional groups whose members have developed ways of looking at and talking about the communication process in their specialized fields. As the student of communication reads about communication, he soon finds himself surrounded with a somewhat confusing variety of definitions, charts and mathematical symbols—all purporting to explain or to represent the communication process.

3.12 In many cases, the charts, diagrams and symbology are called "models" of the communication process. Yet, many of these models bear little surface resemblance to one another. Before looking at some of the communication models, it seems reasonable to explore the values in a study of models of the communication process.

3.2 Kinds of Models

3.21 Different groups of scientists use the word "model" itself in different ways. Sometimes they substitute it for terms like "theory," "analogy," "flow chart," "hypothesis," and "explanation." In some cases, the term has been regarded almost as if it were *magic* and as if the mere labeling of a particular visual as a model automatically clears up all possible misunderstandings about a process.

3.22 The "model," as a code, supposedly represents the real process. Thus it is *not* substitutable for the process itself. A model, if per-

fect, would show all possible aspects of some process, i.e., it would represent the process occurring in the real world with perfect fidelity. Or to put it in another way, a perfect model would be isomorphic, i.e., the parts of the model would correspond in an exact one-to-one relationship to the process as it exists in the real world.

3.23 Naturally, the limitations of the graphic arts, and the automatic imposition of stasis that visualization carries, means that dynamic, ongoing processes cannot be reproduced with perfect fidelity. Thus models range from high to low fidelity in the degree with which they represent processes. The criterion for selection of a particular model in any given case is not based primarily on the fidelity or correspondence to reality of the particular model, but rather on the model's *usefulness*.

3.24 The criterion of utility in selection of a model becomes more understandable when we consider the types of models available. At one level, models are merely *descriptive*. A descriptive model might be used to identify the elements of a particular process, or to indicate areas from which questions may be drawn for future research. Most of the models of the communication process mentioned here are purely descriptive.

3.25 At a different level, we can talk about an *operational* model. An operational model attempts to describe the process in such a way that measurement operations and predictions are possible. Information theory provides a model which can be called operational in the sense in which we have used it here. At still a different level, we can attempt to develop a *functional* model. A functional model is not necessarily descriptive but attempts to specify certain relationships between elements of the process so that other new relationships are generated. There are few functional models in communication as we know it today, or for that matter, there are few such models in the behavioral sciences.

3.26 With this background, the criterion of utility becomes clear. If the desire of an individual is merely to identify the elements of a process which are meaningful to a particular task, a descriptive model is all that is necessary. Furthermore, the task to be accomplished also determines the level of fidelity which may be necessary. If the process is difficult to understand, a low fidelity model may induce more understanding with fewer repetitions than a high fidelity model which is far more complicated.

3.2. The next section looks primarily at the relative usefulness of certain communication models in accomplishing two tasks: determining the types of questions which might be answered or raised from a particular model, and accomplishing the job of achieving listener or reader understanding about the process of communication.

3.3 Communication Models

3.31 Communication models come in a variety of forms—written, expressed mathematically, or as a non-verbal visualization. They may be oriented to different problems. They may be designed to explain transmission of information over mechanical systems, explain the social nature of human communication, express the neurological function of the brain, or predict message form and structure.

3.32 Communication models can be placed along several kinds of dimensions. In each case, the dimension chosen is one which fits a particular situation under study. Thus a model might be constructed to emphasize the psychological aspects of communication. Other common models seem to be derived for the purpose of explaining communication in small groups, the relationship between the newspaper and the mass audience, communication in the polarized speaker-audience situation, or for diagramming the process nature of communication.

3.33 Regardless of the particular emphasis shown, at least two things are clear. Models are constructed for particular purposes, i.e., to serve a criterion of utility. Second, communication models never include all possible elements of the communication process as it exists in the real world. Models are selective, and elements are picked for particular models which seem to occur within the process of communication in ways which fit the particular situation being examined.

3.4 Two Non-Visual Models

3.41 Perhaps the best known verbal model of communication is also the oldest. Aristotle, writing in his *Rhetorica* 300 years before the beginning of the Christian Centuries, provided an explanation of oral communication which is still worthy of attention. He called the study of communication "rhetoric" and spoke of three elements within the process:

Rhetoric falls into three divisions, determined by the three classes of listeners to speeches. For of the three elements in speech-making—speaker, subject, and person addressed—it is the last one, the hearer, that determines the speech's end and object.¹

From an analysis of the three elements of speaker, speech and audience, Aristotle details characteristics which each element might have. His is an audience-centered exposition which attempts to place the emphasis in communication on persuasion:

... Since rhetoric exists to affect the giving of decisions . . . the orator must not only try to make the argument of his speech demonstrative and worthy of belief; he must also make his own character look right and put his hearers, who are to decide, into the right frame of mind.²

3.42 If we ask ourselves what the differences are between the model proposed by Aristotle and ones constructed in the present century, only one major difference seems apparent. Aristotle did not talk about a *channel* for communication as do most modern accounts. Yet the *Rhetorica* rather carefully examines many of the factors which make for effective oral or written communication. In its emphasis on the listener, Aristotle originates a philosophy of communication carried out in the two models discussed later, SMCR and Interpreter.

3.43 Aristotle's traditional view provides the core of Harold Lasswell's much quoted formulation of the main elements of communication: "*Who says what in which channel to whom with what effect?*"³ Lasswell's question is a model of communication, a model which points to the significant elements of the process as Lasswell saw those elements. Although this model has stimulated research in communication—particularly research involving mass media—the model is of limited use in teaching the process of communication. It tends to focus on pure description

^{1,2}Aristotle, *Rhetorica*. Translated by W. Rhys Roberts, in *Basic Works of Aristotle*, Richard McKeon (ed.), New York: Random House, 1941.

³Harold D. Lasswell, "The Structure and Function of Communication in Society." In Lyman Bryson (ed.), *The Communication of Ideas*. Institute for Religious and Social Studies, 1948, p. 37.

of the elements of the process and fails to identify relationships between elements. It fails to indicate the importance of situational variables. And it is oriented in a "one-way" fashion, i.e., it ignores the notion of process.

3.44 Words are static. Purely verbal models of the communication process, of which Aristotle and Lasswell provide only two examples of a group from which many others could be chosen, have two great disadvantages. They are frequently lengthy, and if not lengthy, of limited usefulness. They are seldom able to indicate the dynamism of a communication situation.

3.5 Some Visualizations

3.51 This section discusses briefly a number of communication models which have been visualized in several ways. A complete discussion of any one model is beyond the scope of the chapter. Yet it may help one to gain a background in communication to see some of the various ways people have expressed visually their communication interest. The section following discusses two models in much greater detail with the emphasis on use of the models in teaching.

3.52 In 1949, Claude Shannon, of the Bell Telephone Laboratories, and Warren Weaver, then with the Rockefeller Foundation, made scholarly hearts beat considerably faster with the publication of their book *The Mathematical Theory of Communication*. They attempted to do two things: reduce the communication process to a set of mathematical formulas, and discuss problems which can be handled with the model. They intended their formulation to apply to all communication, including mechanical communications systems. Fig. 3.1 below shows the Shannon

and Weaver visualization. Because Shannon's definitions of the elements of the process as he saw them are rather precise, we repeat the entire definition here.

3.53 By a communication system we will mean a system of the type indicated schematically in Fig. 3.1. It consists of essentially five parts:

3.54 1. An *information source* which produces a message or sequence of messages to be communicated to the receiving terminal. The message may be of various types: (a) A sequence of letters as in a telegraph or teletype system; (b) A single function of time $f(t)$ as in radio or telephony; (c) A function of time and other variables as in black and white television — here the message may be thought of as a function $f(x, y, t)$ of two space coordinates and time, the light intensity at point (x, y) and time t on a pickup tube plate; (d) Two or more functions of time, say $f(t), g(t), h(t)$ — this is the case in "three dimensional" sound transmission or if the system is intended to service several individual channels in multiplex; (e) Several functions of several variables — in color television the message consists of three functions $f(x, y, t), g(x, y, t), h(x, y, t)$ defined in a three-dimensional continuum — we may also think of these three functions as components of a vector field defined in the region — similarly several black and white television sources would produce "messages" consisting of a number of functions of three variables; (f) Various combinations also occur, for example, in television with an associated audio channel.

3.55 2. A *transmitter* which operates on the message in some way to produce a signal suitable for transmission over the channel. In

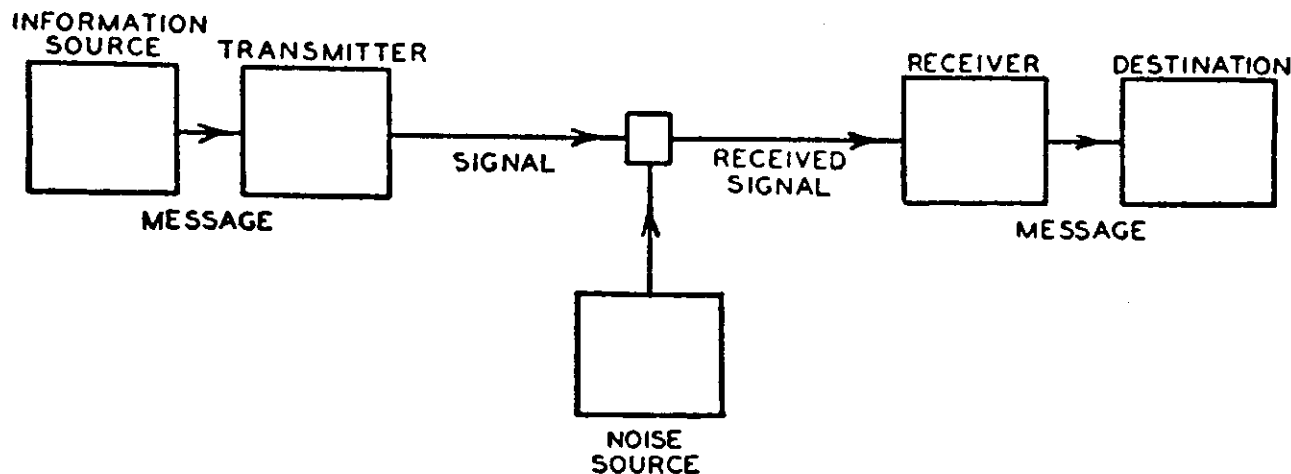


Fig. 3.1. Schematic diagram of a general communication system: Shannon and Weaver Model.

telephony this operation consists merely of changing sound pressure into a proportional electrical current. In telegraphy we have an encoding operation which produces a sequence of dots, dashes and spaces on the channel corresponding to the message. In a multiplex PCM system the different speech functions must be sampled, compressed, quantized and encoded, and finally interleaved properly to construct the signal. Vocoder systems, television and frequency modulation are other examples of complex operations applied to the message to obtain the signal.

3.56 3. The *channel* is merely the medium used to transmit the signal from transmitter to receiver. It may be a pair of wires, a coaxial cable, a band of radio frequencies, a beam of light, etc. During transmission, or at one of the terminals, the signal may be perturbed by noise. This is indicated schematically in Fig. 3.1 by the noise source acting on the transmitted signal to produce the received signal.

3.57 4. The *receiver* ordinarily performs the inverse operation of that done by the transmitter, reconstructing the message from the signal.

3.58 5. The *destination* is the person (or thing) for whom the message is intended.⁴

⁴Reproduced with permission from pp. 4-6, *The Mathematical Theory of Communication*, Claude E. Shannon, and Warren Weaver. Urbana: The University of Illinois Press, 1949.

3.59 Shannon and Weaver were not interested in the psychological aspects of communication, and thus not really concerned with problems involving common communication breakdowns. Thus questions of the order: "What role does the attitude of the receiver play in communication?" are not immediately derivable from their model. Neither were they particularly interested in the dynamic aspects of human communication considered apart from other possible communication systems. Thus, if the purpose in studying communication is an attempt to isolate the causes of communication breakdowns in certain kinds of human communication, the Shannon and Weaver model will give only rather general help. From the Shannon and Weaver book, however, has come a wealth of research material and other theoretical formulations.

3.5.10 To see how the Shannon and Weaver model can be adapted for other and more specific purposes, see Jerome Rothstein's book *Communication, Organization and Science*. Rothstein argues that there is an analogy between communication and measurement amounting to an "identity in logical structure." His visualization, reproduced in Fig. 3.2, adds relatively little to the Shannon and Weaver model, yet shows the relationship he is interested in describing rather precisely. He describes his visualization rather concisely:

"The blocks and upper captions follow Shannon's characterization of a communication system; the lower captions give analogous terms for a measuring apparatus. The system of interest cor-

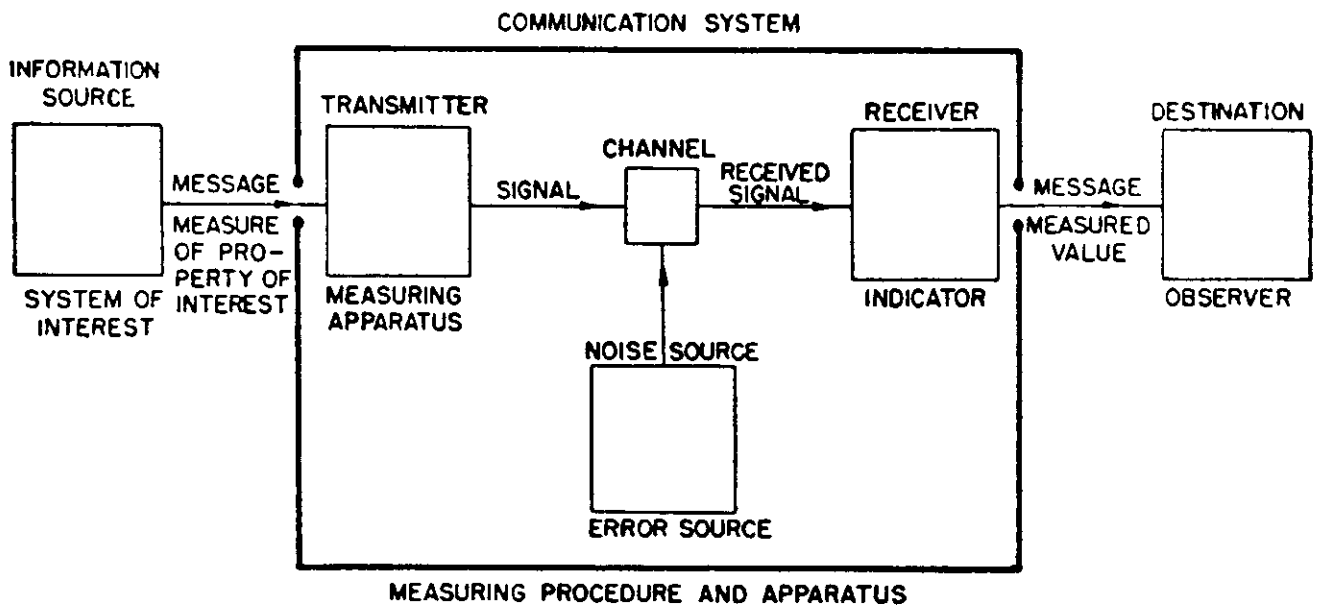


Fig. 3.2. The analogy between measurement and communication: Rothstein Model.

responds to the information source; the observer, to the destination for which the message is intended. The message corresponds to a measure of the property of interest, which is often encoded by the transmitter or measuring apparatus into information-bearing variations of some physical quantity often quite different from the one of direct interest. This signal, corrupted by noise or errors, is decoded by the receiver or indicator and presented as a message or measured value at the output of the system."⁵

3.5.11 Rothstein is not attempting to describe all of the communication, nor to be of help in solving communication breakdowns, nor to indicate how the model may be used to write a better television show. He is interested only in the question of the relationship of measurement theory to communication. We may question the model on grounds regarding the accomplishment of this task, but we should not question the model on the grounds that it seems to be of no help in the problems of introducing technical change in underdeveloped countries of the world.

3.5.12 Neither the Shannon and Weaver formulation nor the Rothstein adaptation are of distinct help in gaining an understanding of the characteristics peculiar to human communication. Let us turn our attention to human communication, and focus on several models attempting to specify what happens to an individual receiver or destination of communication upon receipt of a message. The classic model for this formulation remains that of Ogden and Richards in their book *The Meaning of Meaning*. Ogden and Richards are interested in the relationships which hold between symbols or messages, thought, and the referents for symbols. They visualize the triangular diagram shown in Fig. 3.3, and then turn to a verbal description to explain their model:

3.5.13 This [relationship] may be simply illustrated by a diagram in which the three factors involved whenever any statement is made, or understood, are placed at the corners of the triangle, the relations which hold between them being represented by the sides. The point just made can be restated by saying that in this respect the base of the triangle is quite different in composition from either of the other sides.

3.5.14 Between a thought and a symbol causal relations hold. When we speak, the symbolism we employ is caused partly by the

⁵Reproduced with permission from figure 1, pages 9-10, *Communication, Organization, and Science*, Jerome Rothstein. Indian Hills, Colorado: The Falcon's Wing Press, 1958.

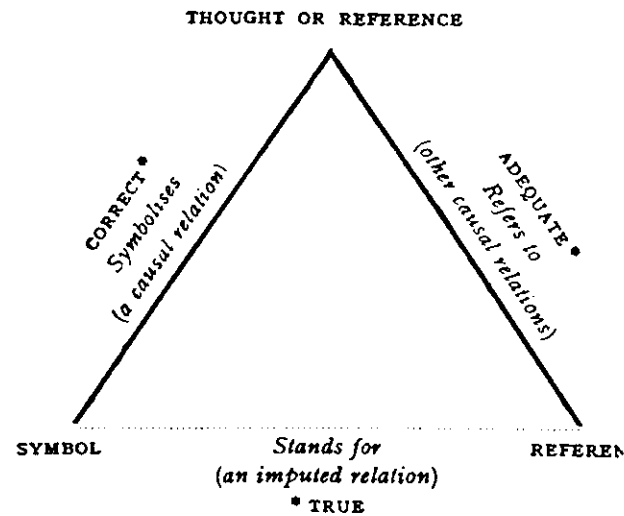


Fig. 3.3. The Ogden and Richards Model.⁶

reference we are making and partly by social and psychological factors—the purpose for which we are making the reference, the proposed effect of our symbols on other persons and our own attitude. When we hear what is said, the symbols both cause us to perform an act of reference and to assume an attitude which will, according to circumstances, be more or less similar to the act and the attitude of the speaker.

3.5.15 Between the Thought and the Referent there is also a relation; more or less direct (as when we think about or attend to a coloured surface we see), or indirect (as when we 'think of' or 'refer to' Napoleon), in which case there may be a very long chain of significant situations intervening between the act and the referent: word — historian — contemporary record — eye-witness — referent (Napoleon).

3.5.16 Between the symbol and the referent there is no relevant relation other than the indirect one, which consists in its being used by someone to stand for a referent. Symbol and Referent, that is to say, are not connected directly (and when, for grammatical reasons we imply such a relation, it will merely be an imputed, as opposed to a real, relation) but only indirectly round the two sides of the triangle.

3.5.17 Here again, the visual does not carry the entire model. A verbal description is necessary in order to understand fully what

⁶Reproduced by permission from pp. 10-11, *The Meaning of Meaning*, C. K. Ogden, and I. A. Richards. New York: Harcourt Brace and Company, Inc., 1956.

Ogden and Richards mean. There are other objections to this model on somewhat more technical grounds. Ogden and Richards never attempted to specify the term "thought" in any way, and the model may be criticized for lack of utility on that ground. Today, the Ogden and Richards formulations are mainly of historical interest.

3.5.18 In addition, the Ogden and Richards model stimulated development of a more sophisticated model which attempts to explain the same process of language use. Dissatisfied with the proposals of Ogden and Richards and with the model developed by Charles Morris in his book *Signs, Language, and Behavior*, Charles E. Osgood developed a model based on learning theory. Exactly the same process was under consideration, i.e., what are the relationships between observable stimuli and the observable responses of individual receivers. Yet the model as it appears in Fig. 3.4 is considerably more complicated. Its complexity enables the model to explain more completely what happens in the situation being studied. It is, with all the complexity, still a purely descriptive model. It attempts no predictions, and does not generate new propositions.

3.5.19 The model, as we present it here, was developed by Charles Osgood, and is explained by Wilbur Schramm in his book *The Process and Effects of Mass Communication*:

3.5.20 Begin with (1). This is the input. At the message level we have a collection of objectively measurable signs \mathbb{S} . These come to your sense organs, where they constitute a stimulus for action. This stimulus we call s . When the process gets as far as s , you are paying attention. The message has been accepted. It may not have been accepted as intended; s may not equal \mathbb{S} ; the sensory mechanism may have seen or heard it incompletely. But everything else that happens as a result of the message in that particular destination will now necessarily be the result of the stimulus accepted by your sense organs.

3.5.21 Now look at number (2). The message may not have to go to any other level in order to bring about a response. If a man waves his fist near your nose, you may dodge. If he squeezes your hand, you may say "ouch!" These are learned, almost automatic, responses on the sensory and motor skill level.

3.5.22 But the stimulus may also bring about other kinds of activity within your nervous system. Look at number (3). The stimulus s may be translated into a grammatical response on your dispositional level — by which we mean the level of learned integrations (attitudes, values, sets, etc.) which make it so easy for you to dispose of the variety of stimuli

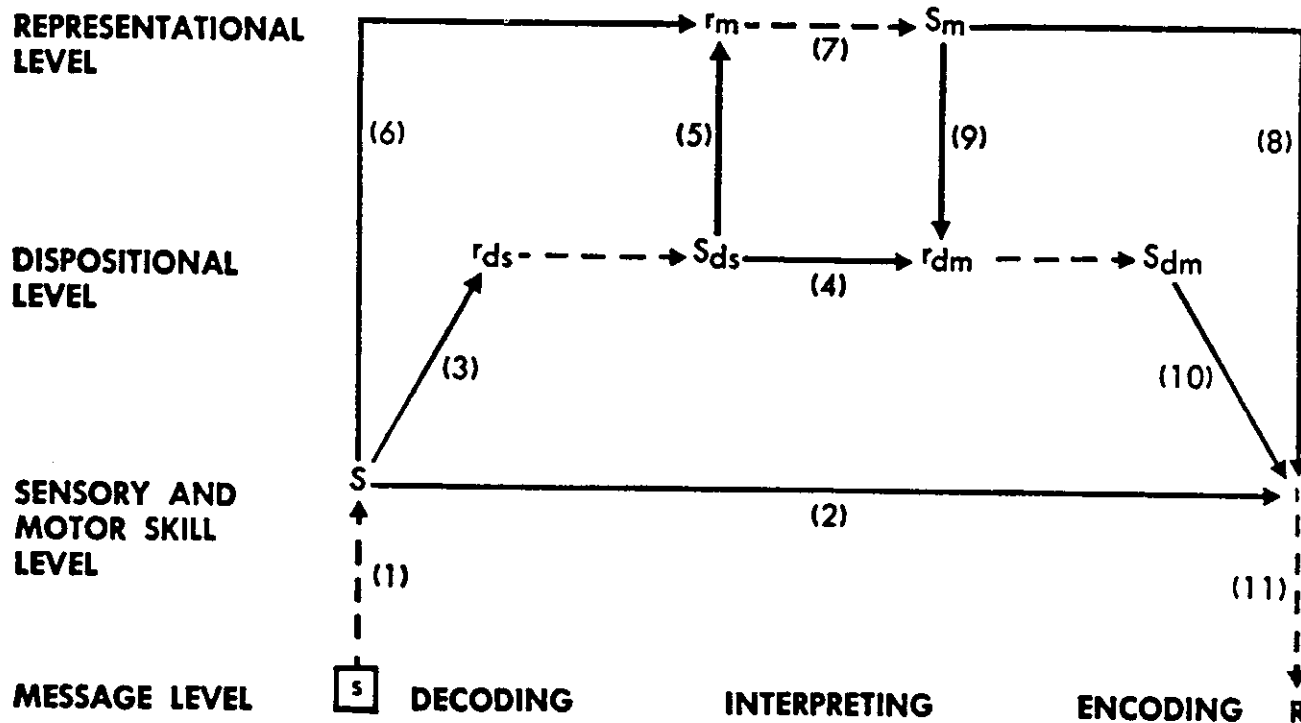


Fig. 3.4. The Osgood Representational - Dispositional Model.

that come to you in the course of a day. These are what we call the intervening variables. Suppose the stimulus stirs up activity in this area of intervening variables. Two things may happen. Look at number (4). The response may be so well learned that it doesn't even have to go to the level of thinking. You hear a line of a poem, and almost automatically say the second line. In that case the activity is through numbers (4) and (10).

3.5.23 More often, however, the activity goes through number (5). Here the original stimulus has been decoded into grammar, fed through the intervening variables, and sent up to the representational level of the central nervous system where meanings are assigned and ideas considered. Occasionally a stimulus comes to that level without going through the intervening variables—as in num-

ber (6). These stimuli create activity in the central nervous system (r_m) which is the terminus of the decoding part of the process. This is equivalent to the meaning or significance of the signs \mathcal{S} . What happens in number (7), then, is what we have been referring to as interpretation. The response r_m which we call meaning becomes in turn a stimulus which sets the encoding process in action, so that (7) is both the terminus of decoding and the start of encoding. We learn to associate meanings with desired responses. And so the encoding process moves through (8) or (9). That is, we give certain orders which either pass directly to the neuromuscular system (through 8) or are passed through the intervening variables (through 9 and 10). In any case, all this activity of the nervous system finally results in a response on the motor skill level (r), which results in output

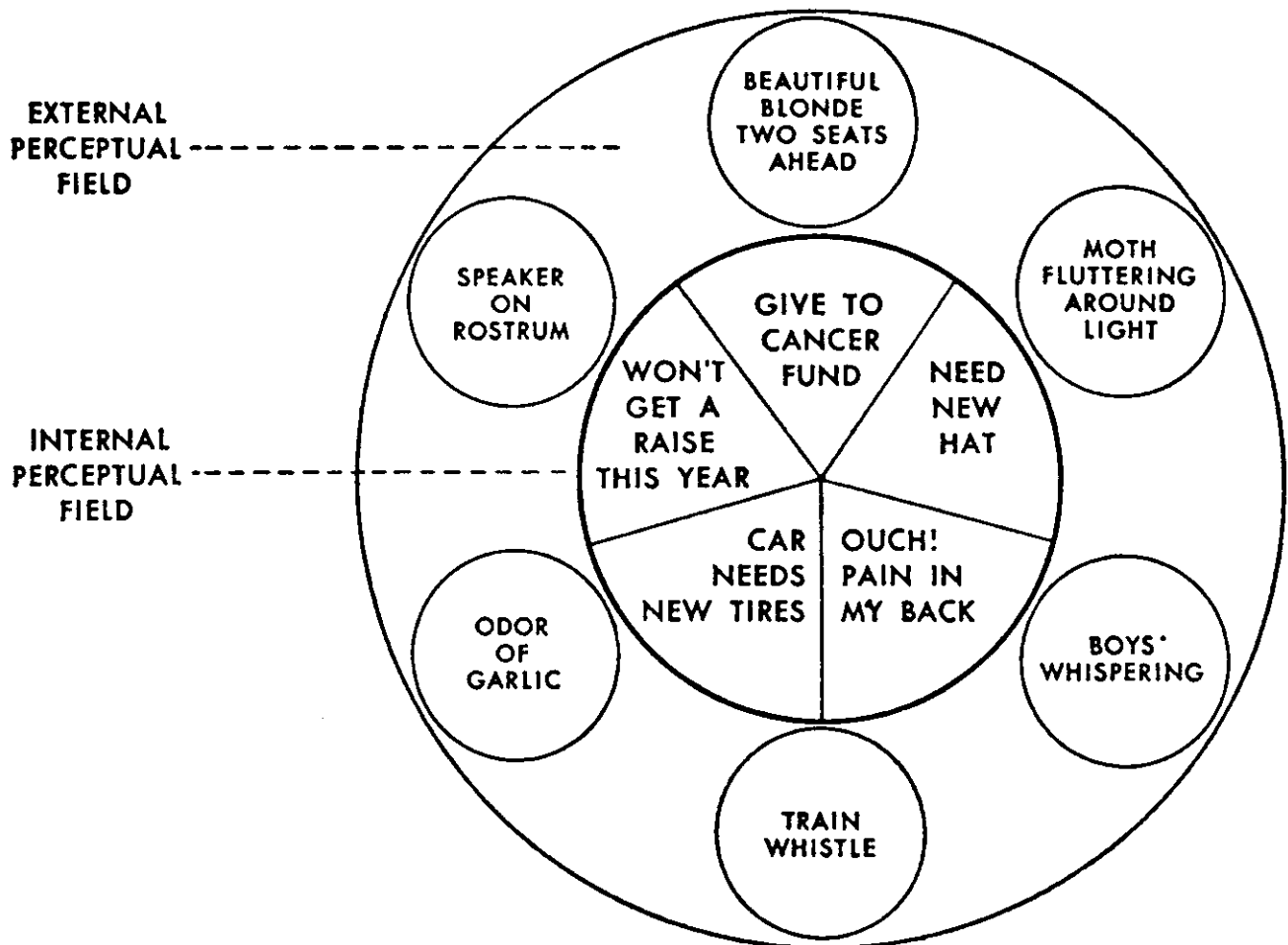


Fig. 3.5. This is the perceptual field of a hearer. It consists of all the stimuli he could possibly attend to. (Number of available stimuli is drastically reduced for convenience.) Reproduced with permission from page 39, *The Arts of Persuasion*, Wayne C. Minnick, Boston, Massachusetts: Houghton Mifflin Co., 1957.

(number 11). If the output is an overt response (R), then we have another message, which may offer itself as a collection of signs \mathcal{S} and be accepted by still another person as a stimulus (s).⁷

3.5.24 The Osgood model is probably not understandable without a verbal description explaining the relatively unfamiliar symbols and relationships expressed in the model. We can turn now to a model which needs little verbal description, yet which attempts to explain some of the same things as the Osgood model. This visualization, developed by Wayne Minnick for his book *The Art of Persuasion*, shows visually the complexity of the perceptual field surrounding the listener. For Osgood, the internal perceptual field as Minnick shows it would be shown by the internal $s_m - r_m$ cycles, while the external perceptual field is seen by Osgood as part of the message (no. 1 in Fig. 3.4). Minnick's model is easy to understand at a glance. Osgood's model is considerably harder. The Minnick model is limited in usefulness in that no attempt is made to show visually what the end result is of the complexity of stimuli affecting the listener, i.e., how the competing stimuli affect the listener's final perception.

3.5.25 When we look at the three models presented by Ogden and Richards, Osgood, and Minnick certain relationships and weaknesses are apparent. None of the models deals specifically with the complete communication process having the elements of source, message, channel and receiver as does the Shannon and Weaver model. It is certainly true that each of the models is constructed in such a way that additions to the model would provide for a more complete description of the communication process, but as we have them, the models are not complete. Their usefulness lies in the fact that each model was constructed to describe a specific aspect of the entire communication process. The visualizations do not attempt to show the process nature of communication, nor do they illustrate by themselves even the portion of the process being considered. For usefulness in teaching, each visualization would have to be accompanied by a verbal explanation.

3.5.26 The next models which are examined all make an attempt to show the process nature of communication. They all attempt to show communication between two persons, specifically oral communication. Basically, each

⁷Reproduced with permission from pp. 11-12, *The Process and Effects of Mass Communication*, Wilbur Schramm. Urbana, Illinois: University of Illinois Press, 1954.

model consists of the elements described by Schramm, placed in a context which emphasizes the social nature of communication, the learned nature of communication, or the perceptual nature of communication.

3.5.27 The first model is one developed by Wendell Johnson and published in the *Harvard Business Review*. Johnson's model, together with its accompanying explanation, may be characterized as a primarily physiologically based model. Johnson is not interested in attitudes, social situation, speaker skills, or message organization. He is interested in describing the main elements of communication, and in the ways in which these elements would appear from a physical point of view. His model, Fig. 3.6, below, emphasizes the fact that communication is not one way, but a constantly changing process in which the source becomes the receiver and vice versa. Certainly, to show the process nature of communication, and the interrelationships of the physical and physiological elements of oral communication, the Johnson model would be most useful.

3.5.28 The main objection to the Johnson model is that it does not attempt to specify what happens within the sending or receiving organism to cause the messages to be encoded or decoded in certain ways. A more specific formulation and adaptation of the Johnson model is

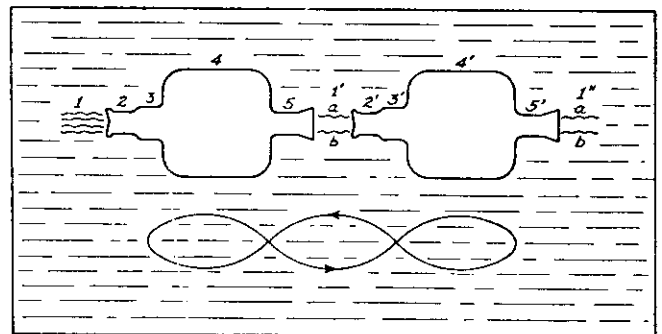


Fig. 3.6. The Johnson Model. KEY: Stage 1, event, or source of stimulation, external to the sensory end organs of the speaker; Stage 2, sensory stimulation; Stage 3, pre-verbal neurophysiological state; Stage 4, transformation of pre-verbal into symbolic forms; Stage 5, verbal formulations in "final draft" for overt expression; Stage 1', transformation of verbal formulations into (a) air waves and (b) light waves, which serve as sources of stimulation for the listener (who may be either the speaker himself or another person); Stages 2' through 1'' correspond, in the listener, to Stages 2 through 1'. The arrowed loops represent the functional interrelationships of the stages in the process as a whole. Reproduced by permission from exhibit 1, p. 50, "The Fateful Process of Mr. A. Talking to Mr. B." by Wendell Johnson, in *How Successful Executives Handle People*, published by Harvard Business Review, Cambridge, Massachusetts, 1953.

provided in a visualization created by Halbert Gulley for a course in Contemporary Theories of Oral Communication taught at Illinois. Essentially the Gulley model attempts to combine elements of the Johnson model with elements of the Osgood model. Thus Fig. 3.7 includes all stages of the Johnson model but adds to the visualization the mediation concepts introduced by Osgood. Again the model emphasizes the process nature of communication and attempts to specify the nature of the relationships between the perception of an object, and the final message encoded by the speaker about that object.

3.5.29 The Gulley model is weak in the same way that the Osgood formulation is weak. It does not specify the nature of the mediating processes occurring within the source or receiver. For what it attempts to do, the Gulley model appears to link the process nature of communication as stressed by Johnson with the Osgood hypotheses in a rather efficient fashion.

3.5.30 A final model of oral communication is perhaps the most interesting. This model

is provided by Donald Bryant and Karl Wallace in their book *Fundamentals of Public Speaking*. Bryant and Wallace emphasize the fact that there is a process at work not only between the speaker and the listener, but within both speaker and listener. The effect of perception on both speaker and listener is stressed, and stressed rather specifically. The two-way nature of communication is pointed out with an arrow that indicates that the listener's response serves as a stimulus for the speaker. Fig. 3.8 appears to be almost totally different in form from either the Johnson model or the Gulley model, but actually the elements of the model are the same. The visualization is different and perhaps will serve a somewhat different purpose in a teaching situation.

3.5.31 We can make some summary statements about these three models emphasizing the nature of oral communication. First, each one attempts to show that communication is a process. Second, each one emphasizes that communication is more than one-way. Third, none of the models attempts to describe the nature of the message. And last, none of the models attempts to

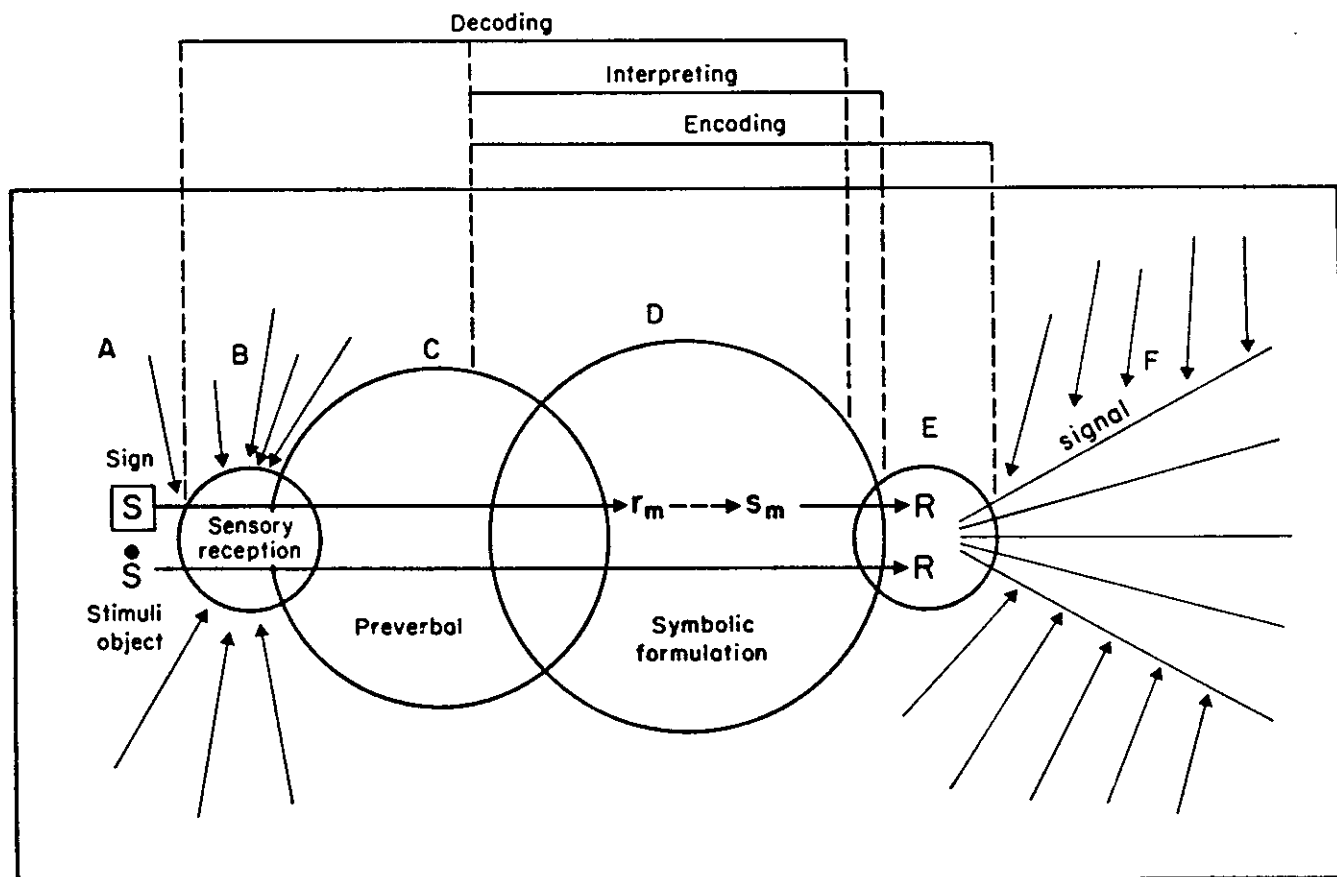


Fig. 3.7. The process of speaker addressing audiences: the Gulley Model.

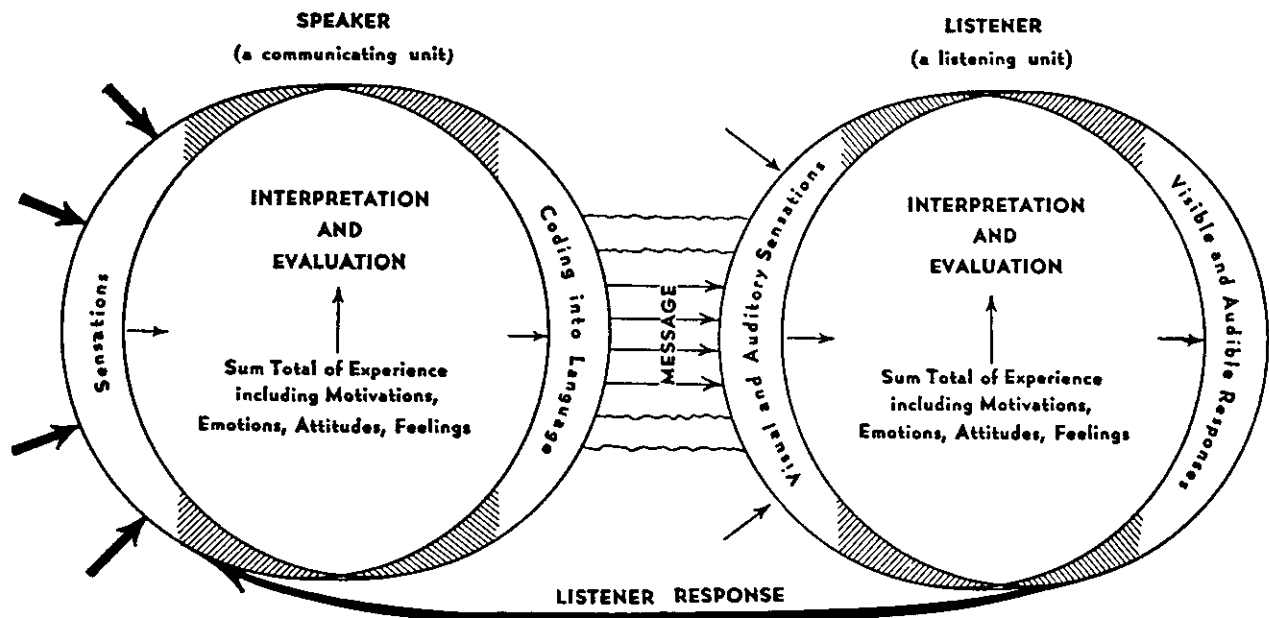


Fig. 3.8. Schematic view of the communication process.

describe communication through any channel other than the face-to-face, two-person situation.

3.5.32 Bruce Westley and Malcolm MacLean, Jr., have introduced a model applicable to the mass media situation, where communication involves more than two people. Fig. 3.9 below shows the model as they formulate it in four stages. The first stage would correspond most closely to the Minnick model (Fig. 3.5), and reports the process by which individuals select events from the real world by direct perception. The second stage is analogous to the three models presented by Johnson, Gulley, and Bryant and Wallace, showing the process of communication as it flows through a second individual A. The third stage points out that individuals cannot have contact with all the available environment and must depend for information on the messages produced by an individual C, who selects items which he has perceived and transmits some of them to B. And the fourth stage shows what typically happens in a mass media situation, as well as being applicable to several other kinds of communication situations. Here, the events that have been sampled by A are reported to C who in turn reports them to B. Neither C nor B have actually seen the events but can share in them through A. Thus we have the situation where the reporter on a newspaper, or the news commentator on radio, can give information to members of an audience.

3.5.33 The Westley and MacLean model does not attempt to specify what happens within

Speaker: a stimulating unit whose output (speech and action) during transmission (delivery) is the product of whatever has stimulated him. His sources of stimulation, represented by the heavy arrows, are (1) his total experience prior to delivery (including knowledge of his listeners) and (2) signs of listener response during delivery.

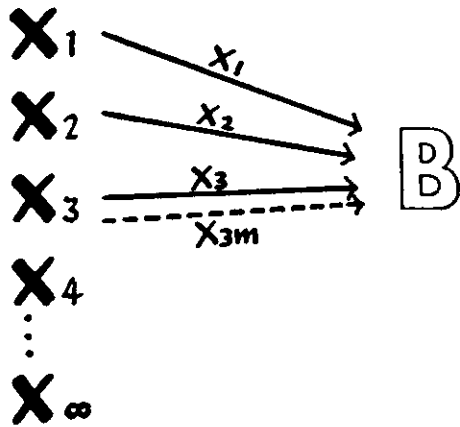
Listener: a receiving unit whose *input* is speech and action from the speaker and sensations from the listening environment. The listener is also a responding unit whose output is determined by what comes into him (the input) modified by his total experience. His responses (speech and action) may occur during listening and following listening.

Reproduced by permission (October, 1959), from Fig. 1, p. 15, *Fundamentals of Public Speaking*, by Donald C. Bryant, and Karl R. Wallace. New York: Appleton-Century-Crofts, Inc., 1947.

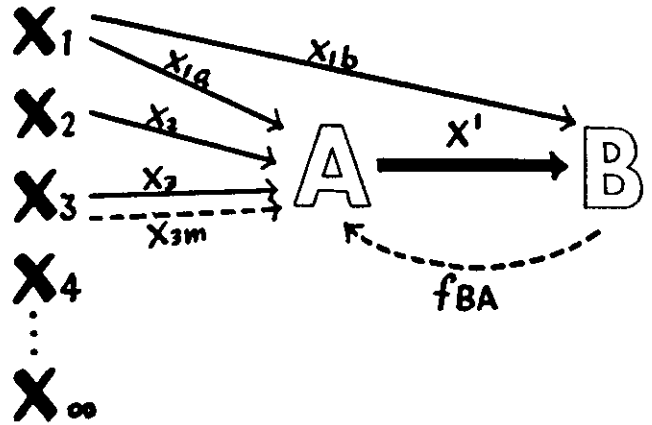
the individual, i.e., what the mediating reactions of either the source or the receiver are. It does not attempt to say anything about the nature of messages which are passed along to various kinds of receivers. But the model is extremely useful in that the relationships between a large number of individuals within the culture can be isolated with the model, their functions described, and their roles analyzed. The model emphasizes the process nature of communication and introduces the term feedback as an explanation of certain phenomena. By presenting the model in four stages, Westley and MacLean ease the teaching burden and make a rather useful model to describe a large number of communication events.

3.5.34 Westley and MacLean deal, as have all the other models which we have discussed, with individuals. The previous models are

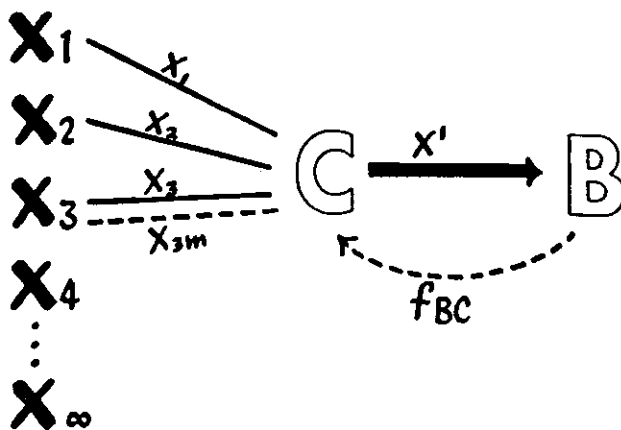
Fig. 3.9. The Westley-MacLean Model.



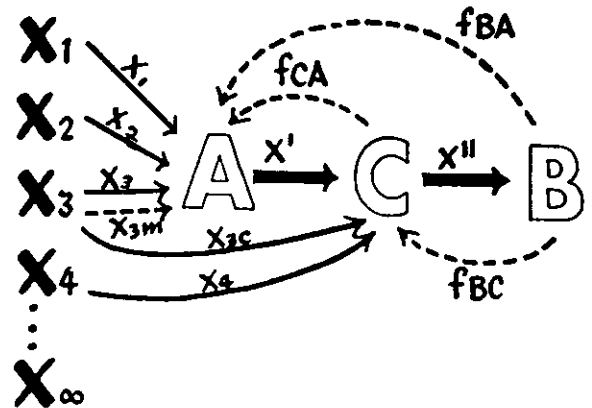
Objects of orientation ($X_1 \dots X_{\infty}$) in the sensory field of the receiver (B) are transmitted directly to him in abstracted form ($X_1 \dots X_3$) after a process of selection from among all Xs, such selection being based at least in part on the needs and problems of B. Some or all are transmitted in more than one sense (X_{3m} , for example).



The same Xs are selected and abstracted by communicator (A) and transmitted as a message (X') to B, who may or may not have part or all of the Xs in his own sensory field (X_{1b}). Either purposively or non-purposively B transmits feedback (f_{BA}) to A.



What Xs B receives may be owing to selected abstractions transmitted by a non-purposive encoder (C), acting for B and thus extending B's environment. C's selections are necessarily based in part on feedback (f_{BC}) from B.



The messages C transmits to B (X'') represents his selections from both messages to him from A's (X') and C's selections and abstractions from Xs in his own sensory field (X_{3c}, X_4), which may or may not be Xs in A's field. Feedback not only moves from B to A (f_{BA}) and from B to C (f_{BC}) but also from C to A (f_{CA}). Clearly, in the mass communication situation, a large number of Cs receive from a very large number of As and transmit to a vastly larger number of Bs, who simultaneously receive from other Cs.

obviously extendable to groups of people, but the models do not attempt to indicate the relationship of individuals within communication situations to various kinds of social groupings. Riley and Riley, in an article appearing in *Sociology Today*, present a model which can be said to have a sociological basis as an explanation of the communication process. Fig. 3.10 shows the social influences at work on any communicator (C) and on any receiver (D), and places communication within a social framework.

Reproduced by permission from pp. 32-35, "A Conceptual Model for Communications Research," by Bruce H. Westley and Malcolm S. MacLean, Jr., *Journalism Quarterly*, Winter, 1957.

3.5.35 Riley and Riley explain the model (p. 27) in a short verbal statement:

"... the two interdependent structures of C and of R [are shown] as aspects of the same wide society and the same secular trend, which is represented by the

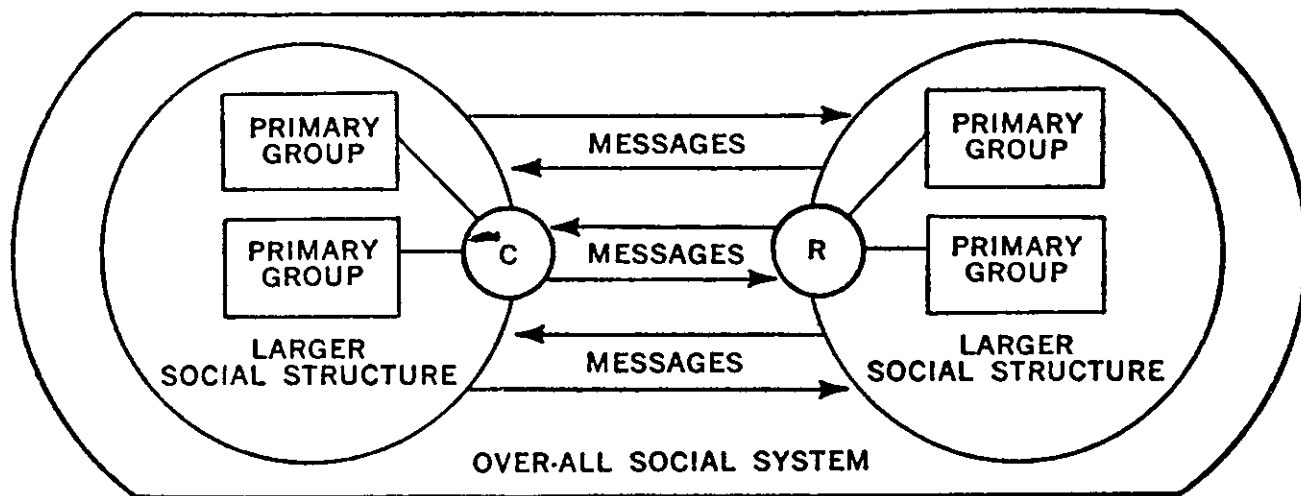


Fig. 3.10. The Riley and Riley Model.

oval boundary which encompasses them both. The several arrows indicate the flow of communication back and forth among the several members of these interdependent structures. Within such an all-embracing system, the mass-communications process is now seen as a component of the larger social process, both affecting it and being in turn affected by it.⁸

3.5.36 This model again does not attempt to analyze the character of messages which might occur within communication, nor to discuss the nature of channels which might carry those messages. It merely emphasizes that even though communication may seem to occur between two individuals, effects of the culture and the group affiliations of both source and receiver will affect the nature of the communication produced and the communication received.

3.5.37 As a final visual model in this section we turn to a model prepared by Carl Hovland and his associates for their book *Personality and Persuasibility*. This is an entirely different kind of model from those we have discussed before. In one sense it is not a model, but merely a classification of factors affecting attitude change in certain kinds of communication situations. But the category scheme (Fig. 3.11) becomes a model when the relationships between the various factors are indicated as they are by arrows showing the kinds of effects expected from different levels of analysis. The model is used by Hovland and associates as a rationale for organization of several experimental studies examining effects at

different levels. The model might equally well be used to organize a course attempting to study communication effects in persuasive situations.

3.5.38 Note that the Hovland model does not attempt to specify the exact relationships existing between various factors. Nor does it attempt to show the dynamic character of communication. Essentially, the model says that communication can be studied with several approaches, and that there are relationships which exist between the approaches.

3.5.39 In this section, we have looked at three models of the communication process. Our examination has necessarily been brief. Yet it is apparent that no one model describes or even attempts to describe everything that goes into communication. Any model is selected for a particular purpose and emphasizes those aspects of the process of communication which are being studied by the individual formulating the model. Models may be primarily verbal, i.e., linguistic descriptions such as those of Aristotle and Lasswell, or primarily visual, such as the Bryant and Wallace model. Or they may combine a visualization with a verbal description, such as is done by Shannon and Weaver.

3.5.40 In the following chapters, we wish to discuss in detail two additional models which have been used extensively in communication training. We shall concentrate on the ways in which they may be used in teaching communication theory, analyzing communication breakdowns, and improving communication between individuals.

⁸Reproduced with permission from figure 4, pp. 576-577, *Sociology Today*, (eds.) Robert K. Merton, Leonard Broom, and Leonard S. Cottrell, Jr., New York: Basic Books, Inc., 1959.

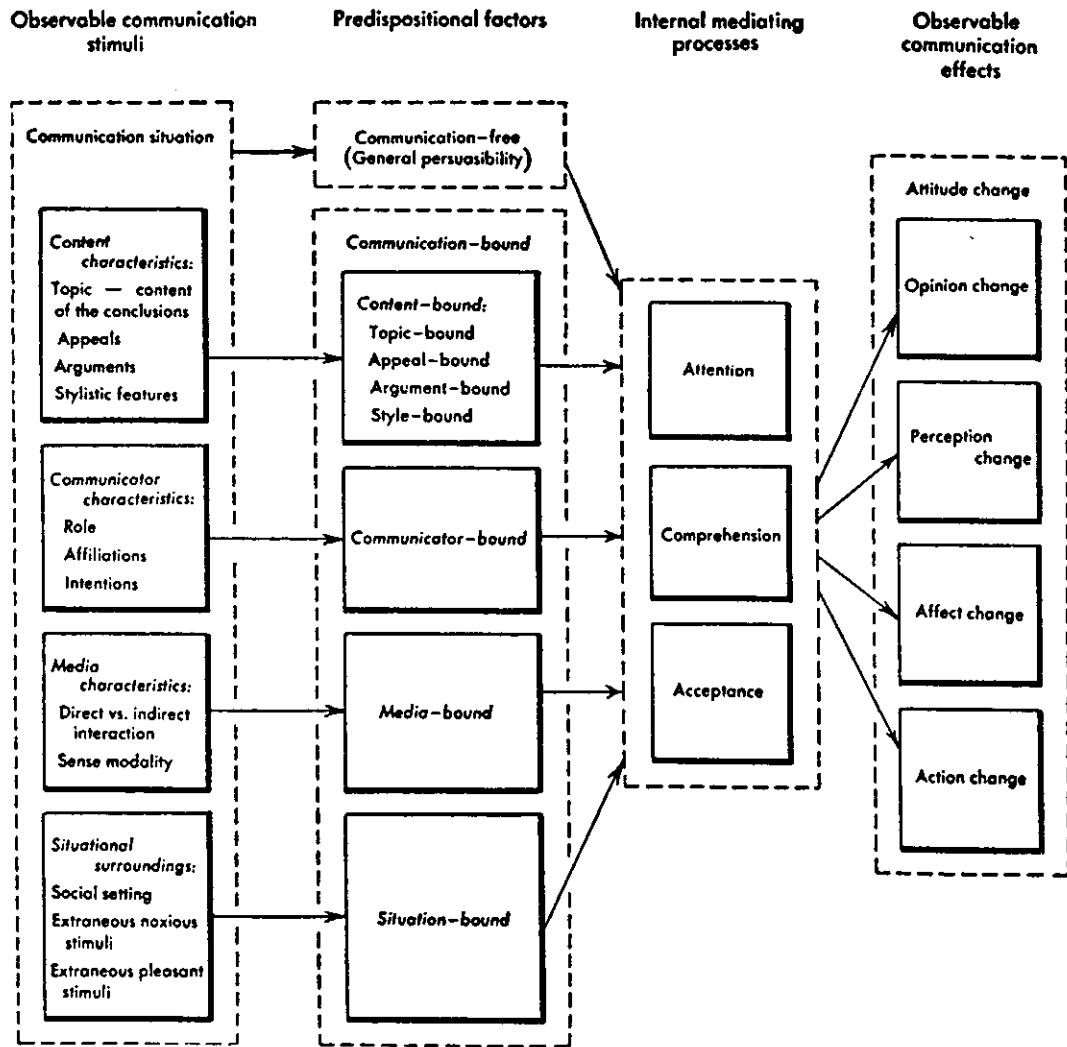


Fig. 3.11. Major factors in attitude change produced by means of social communication. The categories and subcategories are not necessarily exhaustive, but are intended to highlight the main types of stimulus variables that play a role in producing changes in verbalizable attitudes. Reproduced by permission from figure 1, page 4, *Personality and Persuasibility*, Carl I. Hovland, (ed.), New Haven: Yale University Press, 1959.

4. The S-M-C-R Model of Communication

prepared by Erwin P. Bettinghaus

4.1 Purposes and Use

4.11 The S-M-C-R Model, developed by David K. Berlo and used in training programs of the National Project in Agricultural Communications, emphasizes the psychological nature of communication as it affects both the source and the receiver in any communication situation. Although other models have also emphasized the psychological nature of communication, the S-M-C-R Model has the special characteristics of providing an analysis of messages and of sensory channels in communication.¹

4.12 Essentially, this model (Fig. 4.1) attempts to portray the necessary ingredients for human communication. The model has been used in the teaching situation to improve understanding of the communication process, as well as to help students or workshop participants improve their ability to understand others or to have others understand themselves. With slight additions, the model has been used to analyze communication breakdowns.

4.2 The Source

4.21 With these uses in mind, let us look at the model portrayed in Fig. 4.1 in some detail. All communication involves a *source* of information, the (S) within the model. The model does not specify what kinds of sources can produce messages, and depending on the situation, it is obvious that communication stems from many kinds of sources. In human communication, the source can be a single individual, such as a speaker talking to a large audience. But the source can also be a group of people, such as the American Legion, or the United States Department of Agriculture, or an institution such as Michigan State University. Even though these

¹The S-M-C-R and Interpreter models (Chapter 5) are discussed in detail in *The Process of Communication: An Introduction to Theory and Practice*, by David K. Berlo. New York: Henry Holt and Company, 1960.

institutions are obviously composed of individuals, yet the communications which they engage in frequently appear to a listener or a group of listeners as stemming from a single source. Thus we may hear such statements as "The government sent me an income tax form today," or "The USDA reported today on the farm crisis."

4.22 Once the fact is established that communication always involves some source, we can examine these possible sources of communication to ask questions about the significant factors within sources affecting the communication process. It is certainly possible to develop a relatively long list of factors specific to individual situations, or even common to several situations. However, when we begin applying our list to many sources, we will find that not all of the items will be significant variables in all situations. The S-M-C-R Model provides a minimum list of significant variables which should be applicable to most of the kinds of communication situations which interest us.

4.23 For example, we can say that the *communication skills* of different sources will be important factors in determining the success of communication in any situation. The ability to write, to draw, to speak, will differ as the source in the communication situation differs. And perhaps more important than these encoding skills is the ability to reason, which again differs with the source.

4.24 Communication skills are clearly important to the success of communication; if sources cannot encode messages which are understandable to receivers, communication may break down. When two sources are talking about the same situation, both sources may be able to encode understandable messages for a particular receiver. In general, however, the source with the more highly developed communication skills will be a more effective communicator than will the source with less highly developed communication skills.

4.25 A second factor within the source producing differential effects in a communication situation is the source's *attitudes*. Here we can talk about several kinds of attitudes, each one important to the total process of communication. Attitudes have been defined variously by psychologists. Perhaps the most widely accepted definition of an attitude is that it is a "predisposition to response in any situation." In communication, the source has attitudes toward the receiver of communication — his audience. The source has attitudes toward the subject about which he is communicating. He may have attitudes toward the channel (for example, a prejudice for or against use of visuals). And the source has attitudes toward himself. This entire complex of attitudes is important to the success of communication.

4.26 If the source has an unfavorable attitude toward his receiver, we might expect that his communication will be different than if he is highly favorable toward the receiver. If the source is unsure of himself, again the resulting communication may be different than if the source is confident of his own abilities. The source may hold an unfavorable attitude toward the room where the communication is taking place. He might be somewhat neutral toward the subject about which he communicates. In each case, a consideration of the attitudes of the source is important if we are to understand the process of communication.

4.27 In teaching, it is important to let students see that even though complete analysis of all the relevant attitudes present in any communication situation may be impossible, the source who wishes to become an efficient communicator must attempt such an analysis. Entering a communication situation with little knowledge of the relevant attitudes is inviting a communication breakdown.

4.28 A third factor which seems to enter into all communication situations is *knowledge*. Here we can talk about the source's knowledge of his subject matter and about his knowledge of the audience; these are the knowledges that are generally referred to when we say that the well-informed source is likely to be more successful than the poorly-informed source. However, it is important in addition to know something about the situation in which communication is taking place, as well as something about the process of communication itself. The model we are discussing emphasizes the fact that knowledge of all aspects of communication is necessary.

4.29 A final over-all factor which we must consider in analyzing communication is the *social-cultural context* in which the source and his receivers are living. Here we can ask ourselves a number of questions. What is the role of the source within society? What groups does he belong to? How do those groups influence him as a communicator? What special aspects of the

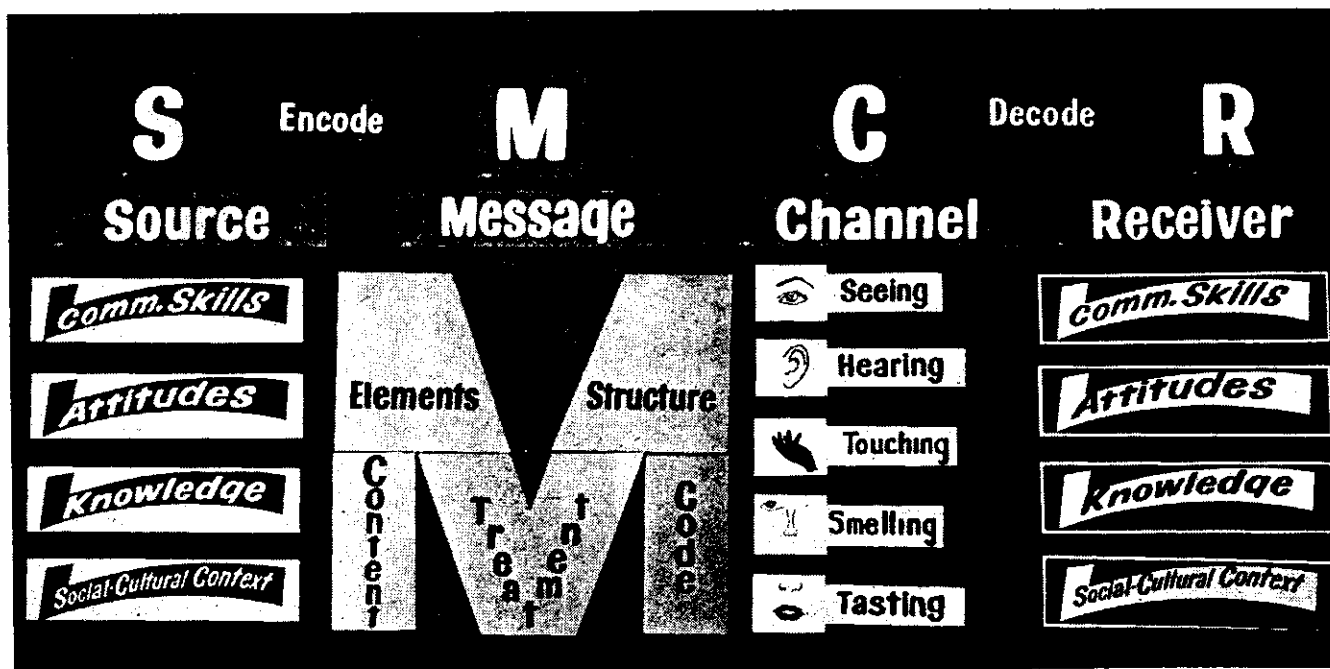


Fig. 4.1. Photograph of a flannelboard presentation of one version of the S-M-C-R Model.

culture condition the communication which the source might encode? These and similar questions affect the total process of communication as we have described it.

4.3 The Receiver

4.31 Just as there is a source in all communication situations, so there is also a *receiver* in all such situations. We can make much the same analysis of the receiver as we do of the source. People serve both as sources and receivers of communication. At one and the same time, an individual might be talking to another, i.e., acting as a source for communication, and also be watching the facial expressions of the other, i.e., acting as a receiver of communication. Since this is true, we might expect sources and receivers to have much the same characteristics. We can talk about the *attitudes* of the receiver, the *communication skills*, the *knowledge*, and the *social-cultural context* of the receiver in the communication situation in the same ways in which we talked about these factors operating within the source of communication.

4.32 The *attitudes* of the receiver will condition the effectiveness of the source quite apart from the source himself. If the receiver is negative toward the source, communication is much less likely to be effective than if the receiver is highly favorable toward the source. It is clearly a different communication situation when the receiver is against the proposal made by the source, from when he has already made up his mind that he is in favor of it. In general, we can say that the closer the match between the attitudes of the source and the attitudes of the receiver, the more effective the communication.

4.33 The *knowledge* of the receiver is obviously important. The receiver placed in a communication situation involving a completely new subject behaves differently from one entering a relatively familiar situation.

4.34 The *communication skills* of the receiver may drastically affect the success of communication. The skills required to be an effective receiver are somewhat different from those required to be an effective source. When we consider the receiver, we are concerned with the decoding skills of reading, listening, and of course thinking. When the reading ability of the receiver is limited, the effectiveness of the source attempting to communicate by writing will also be limited. As a general conclusion, we can suggest

that the closer the match in communication skills between the source and receiver, the more effective will be the communication.

4.35 Finally, we must realize that the receiver of communication also lives within a *social-cultural context*. He belongs to certain groups and does not belong to others. He has a cultural heritage which determines in large part the ways in which he behaves. He refers to some groups for guidance in communication situations and does not refer to others. Communication will break down if there are no common elements between the social-cultural context of the source and that of the receiver.

4.36 Like the source, the receiver within the communication situation may be a single individual. The receiver may be within a group of individuals, such as the audience at a play. Or the receiver may also be an institution, such as a labor union, a university, or a government.

4.37 In teaching students or workshop participants about the process of communication, it seems desirable to deal with both the source and receiver of communication before turning to other elements within communication. Our orientation is usually toward ourselves as sources or ourselves as receivers of communication; we tend to identify communication solely in terms of the characteristics of the sources and receivers within the process. The S-M-C-R Model differs from all models mentioned in the previous chapter in that it emphasizes the complete process of communication, and deals with source and receiver as only two elements of communication.

4.4 The Message

4.41 The *message* in communication may be considered from several different viewpoints. The model attempts to break the message element down into meaningful sub-elements for more complete understanding. The teacher may talk about the factors important to the source and receiver in any order. When we talk about the message, however, it probably makes more sense to follow the order of presentation developed below.

4.42 The first thing which we should mention is the term *code*. All messages involve some code. We can talk about German, French, Hindi, or English as being different codes. Or we can talk about music, art, or the dance as involving different codes. Or we can talk about the specialized codes we call jargon within a language such as English. Thus the physicist has

a code peculiar to his field, even though the words within this jargon are recognized as English words.

4.43 Second, we can mention the *content* of a message. It is certainly true that code and content are inextricably linked within the communication process. For teaching purposes, we separate them for consideration as separate elements. Content involves the ideas within the message. For a given subject such as atomic energy, there will be many ideas for a source to draw from in encoding some message. The source has to select content appropriate to his audience. He must find an arrangement of the material he selects. And he must test those ideas for usefulness with a particular receiver.

4.44 Given a code and some content, the speaker or source within a communication situation has to find an appropriate *treatment* for the ideas which he has selected. This is the primary task of the rewrite man, the editor, the movie director, of the advertiser; all are treatment specialists. Treatment involves selection of a code appropriate to the receiver, the content of the message, and the medium of transmission. Treatment involves the arrangement of sentences, the difficulty level of written material, and the appearance of the final product.

4.45 Within each subfactor of code and content and treatment, we need to consider the component *elements*. The elements of the English language might be words, or phrases, or units of sound. Ideas are the elements of any given content. After we know what elements are involved, we need to consider the *structure* of the message: the way the elements of the message are arranged or ordered.

4.46 In teaching, a consideration of the message as an integral part of the process of human communication is important to anyone attempting to improve his understanding of the process as a whole, as well as to anyone attempting to analyze communication breakdowns, or improve his own communication ability.

4.5 The Channel

4.51 The other major factor which the S-M-C-R Model deals with is the channel in communication. There are several ways in which we can look at channels of communication. The model shows only one of those ways. It suggests that one useful way of approaching the study of the communication process is to consider channels to be the five senses. Thus, the message can be

heard, or seen, or touched, or tasted, or smelled. There are at least two other ways in which channels have been considered by those interested in a study of communication. We could talk about the message passing to the receiver as a pattern of sound waves or a pattern of light waves. Or we can talk about the disseminating channels of television, radio, newspapers, books, magazines, bulletins, etc.

4.52 A factor worth emphasis in teaching communication is the importance of multiple channels. When sources utilize more than one channel of communication, the chance for communicative effectiveness is generally increased. For example, we can indicate that research tends to show that when a speech is supplemented by appropriate visuals, the receivers of the communication tend to learn the material better than if the presentation uses only the channel of hearing.

4.6 Final Considerations

4.61 There are two other words on the model which we have used, but not defined. We can sum up the model as it appears in Fig. 4.1 by saying that communication always involves a source who or which *encodes* a message for transfer along some channel to be *decoded* by a receiver.

4.62 The S-M-C-R Model is useful for gaining some initial understanding of the process of human communication. However, it should not be used without the consideration of some precautionary measures designed to prevent misunderstandings. For example, the model does not indicate the purposive nature of human communication. In many ways, we can distinguish human communication from all other communication by indicating that human communication always involves purpose on the part of both source and receiver: there is no communication without purpose.

4.63 A second caution involves the nature of communication as a process. As the visual model is shown, it may appear to the casual observer that communication is a linear process, perhaps even a step-by-step process, always going in one way. Yet we know that communication situations are seldom one-way. The teacher of communication does well to emphasize that communication does not occur as simply as the visualization presented in Fig. 4.1 would seem to indicate. Communication, like all process, is dynamic, occurs in more than one direction, is ongoing, and is ever changing.

5. The Interpreter Model

prepared by Erwin P. Bettinghaus

5.1 Analysis

5.11 The Interpreter Model (Fig. 5.1e) was developed by David K. Berlo and has been used by the National Project in Agricultural Communications in training programs. The usefulness of the Interpreter Model lies in its attempt to link the learning process with the communication process in human behavior.

5.12 In making the same kind of analysis of the Interpreter Model as we have made of the S-M-C-R Model, we can start by saying that whenever humans learn or humans communicate, some *stimulus* is present (see Fig. 5.1a). We can define the term "stimulus" in rather broad terms to take in anything which we can perceive through one of our five senses. Thus a dog, a speech, a book, a tree, or a man walking all serve as stimuli for our senses. We can also point out that whenever there is a stimulus, there is also some *response*. By response, we mean simply that the individual perceiving a stimulus does something, i.e., votes, runs away, talks, thinks, changes an attitude, etc. Both learning and communication involve stimuli and responses.

5.13 If learning is to take place, the individual has to both *decode* the stimulus and *interpret* the stimulus (see Fig. 5.1b). Human beings have decoding apparatus in the senses of hearing, touch, taste, smell and sight. For example, the organism takes a pattern of sound waves striking the ear drum and translates it into

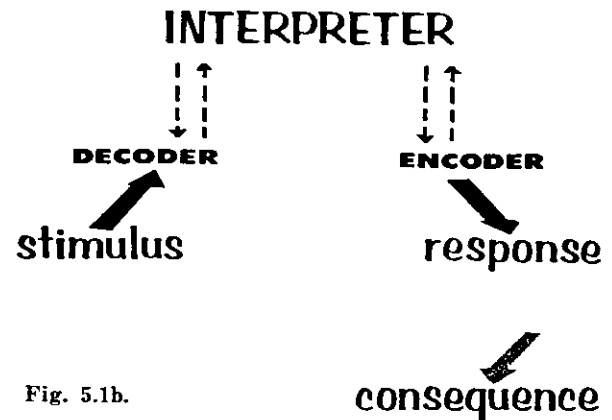


Fig. 5.1b.

the pattern of electro-chemical energy we call nervous energy. But decoding involves more than mere translation of stimuli from one form of energy to another. It involves the association of an incoming stimulus to patterns of stimulation received in the past and to other ideas and associations which are possessed by the organism.

5.14 Closely linked to decoding is the process which we call interpretation. We can postulate an interpreter mechanism for man which enables him to think, to attach meaning to sounds and sights, and to understand. Of all the ways in which man differs from lower animals, perhaps the most important is in his ability to interpret, or think about, the stimuli impinging upon him throughout his daily life. The model shows a double arrow running from interpreter to decoder: this arrow indicates not only that man decodes and passes along information from his decoding mechanism to his interpretative mechanism, but also that the interpreter itself tends to determine what is perceived and how it is perceived. What we see and hear is colored by our past experiences, our memories, and our ideas. People do not perceive the world as the "booming, buzzing confusion" of sights and sounds attributed by William James to the infant. What we see is selected for us, and colored for us by the interpretative mechanism we all carry in our heads.



Fig. 5.1a.

5.15 After interpretation has taken place, the individual must *encode* some response. From the interpreter messages are sent to the encoding mechanisms of the larynx, the fingers, and the muscles. The second arrow is present on the encoding side of the diagram to indicate that encoding is not a simple process. Trial encoding may take place many times before the individual actually responds to a particular stimulus. As we indicated above, encoding may represent only part of the individual's response to a stimulus. Or to put it a different way, the individual may have both overt and covert responses, observable and non-observable responses.

5.2 Consequences and Rewards

5.21 After a response is produced, the individual has the opportunity to observe the *consequence* of that response. In human learning and human communication all responses have consequences for the individual. The consequence of a response is not the response itself. The response may be "running away from a poisonous snake found on a path"; the consequence of that response may be that the individual doesn't get bitten. The response may be to change an attitude toward some other individual; the consequence of that response may be to obtain a raise in pay, or a new position.

5.22 Introducing the notion of consequences means that we must also introduce the idea of reward and its relationship to human learning and communication. The observed consequences resulting from response to a communicating situation will be termed rewarding or unrewarding by the individual. If the consequence is rewarding, then the individual may be more likely to make the same response when a similar situation is presented. If the consequence is perceived as non-rewarding, the probability is that the individual will make a different response when placed in a similar situation. The concept of reward is obviously not linked to monetary or status rewards. Rewards may involve only a feeling of satisfaction with the consequences, of pleasure, or merely of conviction that it was better to have done what was done than to have done anything else.

5.23 Human beings react in many ways to similar stimuli. Yet a careful examination reveals several principles which seem to underlie human behavior in many situations. One of these notions is the *principle of least effort*, closely tied to another concept of *expected reward*. In general, we can say that individuals will respond to

any situation with the least amount of effort which is required to obtain an expected reward. Thus the source may find real difficulty in getting people to take some specific action. The reason may be that individuals perceive the effort required to be greater than the reward expected from the response desired. The concepts of expected reward and effort required are integral parts of any examination of the learning process and its relationship to the process of communication.

5.3 The Model in Communication Terms

5.31 The portion of the Interpreter Model we have considered so far involves functions concerned with the receiver rather than the source of communication. In Fig. 5.1c, we notice that a source has been added to the visual. As we discussed earlier when considering the S-M-C Model, sources and receivers may interchange positions, or even be the same individual at the same time. Therefore we are justified in attributing the same elements of Decoder (De), Interpreter (In) and Encoder (En) to the source that we attribute to the receiver of communication.

5.4 Responses

5.41 What is shown in Fig. 5.1c is a complete communication situation involving a source producing stimuli which we can call *messages*, and a receiver who decodes those stimuli, interprets them, and encodes responses based on the stimuli received. There are, however, some terms in Fig. 5.1c which have not been explained. One way of looking on the terms *attention*, *meaning*, *understanding*, *acceptance*, *commitment* and *action*, is to say that these are possible responses of the receiver of any message.

5.42 Internal responses which are necessary to communication include attention and meaning. The source cannot expect to be successful in communication if the receiver of the message is not paying attention to the message. One response, then, which the source is desirous of obtaining on the part of the receiver is *attention* to the source and his message. The source can also not expect to be successful in communication or learning if the receiver doesn't understand what is said. Understanding is part of the process of obtaining meaning for messages. It involves not only an understanding of the meaning of words, but also of sentences and larger elements within the message. A second part of the

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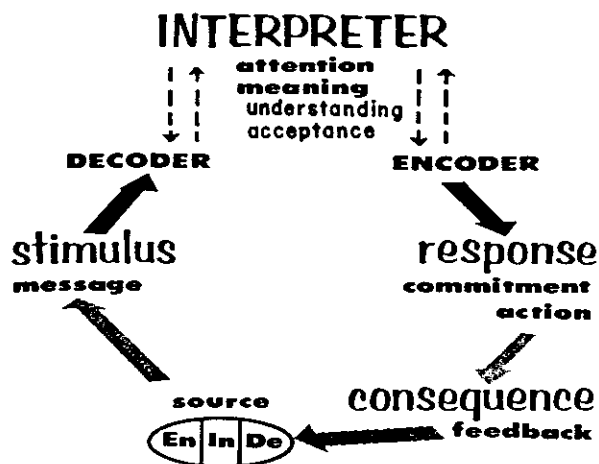


Fig. 5.1c.

meaning process is obtaining acceptance. Understanding is not enough in many cases; we also want our receivers to accept — that is, agree with — what we have to say. Obviously, gaining acceptance is not easy when receivers are initially opposed to a position. And we might say that before he can accept a message, a receiver must first attend to it and gain some meaning from it.

5.43 Internal responses by a receiver are frequently only the first steps in producing learning. The source frequently wants a receiver to act on a message in some externally visible way. At least two of the responses which we might talk about as being useful in the teaching situations with which we deal are commitments and actions. Frequently, sources want receivers to publicly commit themselves to some program. Sources also want receivers to respond by taking some action, i.e., they want them to vote, put a new farm program into operation on their own farm, or help raise money for some civic project. A receiver takes action only after internal responses, in the form of attention and acceptance, have occurred.

5.5 Feedback

5.51 The learning process, when related to the communication process, also involves *feedback*. In our model, feedback is shown by the arrow going from the consequence to the source (Fig. 5.1d). Feedback in communication can take place in several ways, and each way is accompanied by its own problems. *Direct* feedback occurs when a source is able to observe both the responses of a receiver and the consequences attending those responses. This typically occurs in the face-to-face situation where a source is talking to a receiver or a group of receivers. All of us

develop ways of estimating the responses which we observe our receivers making. In the public-speaking situation, for example, the speaker learns how to estimate his audience's response through noticing their facial expressions, bodily movements, questions, etc. These estimates are seldom perfect; the source may be entirely misled. For example, the source may decide that an individual with his eyes closed isn't paying attention, whereas this receiver might actually have closed his eyes in order to concentrate better on the message. Nevertheless, speakers do manage to make predictions about their audiences and to modify their opinions about the audience or change their messages to the audience through the use of feedback.

5.52 Indirect feedback presents an entirely different type of problem. In this situation, the source does not have direct contact with his receivers. The source may be a writer, who will never see his readers. He may be a scientist, whose messages will be translated by an editor into a bulletin to be read by farmers, or the editor of that bulletin, who like the scientist, will never see the readers. At the present time, we cannot suggest methods of obtaining indirect feedback which approach in reliability the direct method of an experienced speaker observing his audience. Nevertheless, here too the source must obtain feedback in order to improve his future messages. Some suggested solutions include making surveys of the audience, using electronic instruments on television sets, and sending out questionnaires. All of these methods have their values and their adherents, but none provides completely satisfactory answers. None offers a continuing feedback which is immediately available to the source. At best, they may provide partial information to assist in the preparation of future messages.

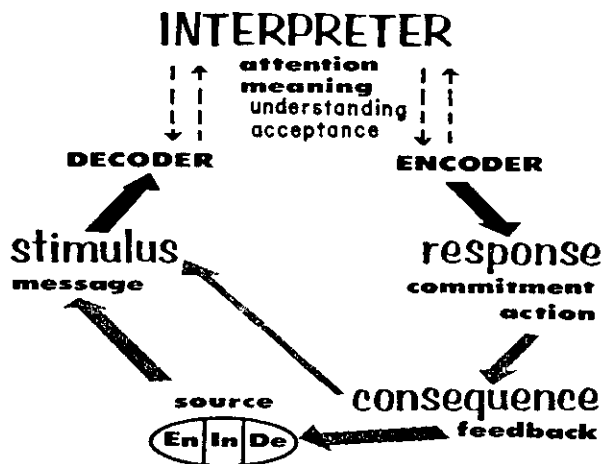


Fig. 5.1d.

5.53 One other addition to the model in Fig. 5.1d deserves special attention. This, the long diagonal arrow leading from consequence to stimulus, represents the feedback direct to the individual (the interpreter). To the extent that an individual remains aware of his own responses and the consequences of these, he can adjust or correct his subsequent actions. A good example of this is the person talking who mispronounces a word, hears himself, and immediately repeats the word correctly.

5.54 The Interpreter Model, as we have visualized it so far, seems to indicate that feedback is merely the source's observation of receiver responses. The discussion we have just made of this arrow indicates that the problem is never as simple as might be indicated by a visual model. Feedback problems are always with us, and are never easily solved. But if the source is to be effective, he must attempt to obtain and interpret feedback from his receivers in order to continue to produce effective messages.

5.6 Habit

5.61 One more factor is important to both learning and communication. In our visual model, (Fig. 5.1e), the jagged arrow between the encoder and the decoder represents the *strength of habit*. In time we acquire habits, or responses made without interpretation. In the morning, when we see a pair of shoes on the floor, or a lathered face in the mirror, we no longer think about the actions we perform as we stroke the lather off the face, or stand up from the task of tying our shoes. We perform tasks similar to these throughout our daily lives, and no longer interpret the stimuli leading to our responses. These are *habits*.

5.62 How are habits formed? One way to approach the question is in terms of reward and consequences. When the child is first faced with the shoe-tying situation, the parents praise the child every time the task is accomplished correctly. After a number of times, the child's parents may stop physical praise on the grounds that the child now knows how to perform the task. But by this time, the child has reward mechanisms built into its own system. Now, having an untied shoe is uncomfortable, and the child still continues to tie his shoes. After a period of time, the physical motions required to accomplish the task become mechanical. The child no longer has to think about the various steps necessary to continue tying shoes correctly.

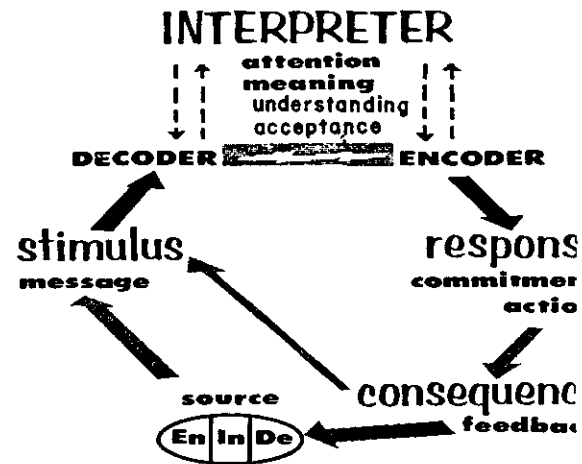


Fig. 5.1e. The Interpreter Model.

5.63 Perhaps most habits are desirable. We would not want to have to think about tying our shoes every morning. But many times we are faced with the situation where we as sources must attempt to obtain responses requiring an individual to break habits. We have a new system for rotating crops. Farmers in our state have been using another system for so long that the use has become habitual. What this model suggests is that in order to break the habit arrow, the source must find ways of making the receivers interpret their actions. Only through interpretation can individuals eliminate old responses in order to prepare for new responses.

5.64 Anyone who has attempted to break a smoking habit established over years quickly realizes just how difficult it really is to break a habit. How then can a communicator break the habit arrow, to obtain interpretation? Many ideas could be suggested. In this chapter we can mention only a few. Existing habits can be used to eliminate undesirable habits. To the farmer change his farming methods, an appeal to habits of thrift might be used. Existing desirable habits might be strengthened, with consequent weakening of undesirable habits. Changes not immediately related to the habit under attack might be suggested, as a way of preparing a receiver for the eventual breaking of the habit. Suggestions of ways to reduce effort in changing habits may help, since receivers are probably motivated toward reduction of the effort required for any task. New rewards might be suggested, to an extent that a receiver would receive increased reward through change of habits.

5.65 None of these methods will work for all cases, and combinations of several methods often have to be used. Yet, we can certainly

that one of the most difficult and important tasks in communication is that of getting receivers to unlearn old habits, so that new patterns of interpretation may be set up.

5.66 In the past few pages, we have examined the Interpreter Model. What we have said represents only one way of looking at this model. The model is rich in ideas and content. Yet it is still only one visualization of the communication process: one which attempts to link communication and learning. The model shows that there is little difference between these two processes. As a concluding point, and as one other way of linking

communication and learning, we can perhaps observe that communication sources are always interested in:

OBTAINING OLD RESPONSES TO NEW STIMULI

or

OBTAINING NEW RESPONSES TO OLD STIMULI

When either of these objectives is obtained, learning has also taken place.

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