Communication networks are part of natural living systems. Analogies of human communication systems can be observed in biological communities. This spider's web, on a cold dewy morning, is one such natural analogy. What communication functions does this spider web serve?

1. The web has boundaries, and it extends the sensory capacities of the spider by allowing it to receive vibratory signals at a distance which serve as a cue for the spider to act.

2. Information transmitted over the network indicates the movement of its trapped prey, its location, over which strands (channels) the signals are received, the correct path to the prey, and the distinction between food-no food or even the type of food that has been captured.

3. A correct response to the information enables the spider to capture his prey and reap its just reward.

C. R. Carpenter, 1974

Photograph by:
L. P. Greenhill
FUNDAMENTAL HUMAN COMMUNICATION

by
D. Lawrence Kincaid

with
Wilbur Schramm

Module Text

Module Manager’s Guide

Module Case Study

PROFESSIONAL DEVELOPMENT MODULES

A series of learning modules for professional and administrative staff working in development communication programs.

- John Middleton, General Editor

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East-West Communication Institute
Honolulu, Hawaii
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KEY: C (Case Study)  T (Text)  M (Manager's Guide)
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FOREWORD

Any discipline faces the challenge of translating what it learns from research and practice into a form usable by persons who apply knowledge to problems. This challenge is particularly demanding in the field of economic and social development, and nowhere more so than in trying to inform and educate people about the problem of population.

Population problems exist, in one form of another, throughout the world. To help solve these sensitive and difficult problems, a large number of countries depend upon a group of professionals working in what has come to be called Population IEC (information, education, and communication). These professionals, working under great difficulties, often isolated from the sources of learning, feel a continuing need to keep up with recent knowledge in their field. The East-West Communication Institute, under the general supervision of Dr. Robert Worrall and the specific direction of Dr. John Middleton, and with the support of the U. S. Agency for International Development, has made an effort to respond to this need.

The Modular Learning Materials, of which this is one unit, are not quite like any other learning materials in the subject area. They have been developed with the aid of scholars and practitioners, and tried out by representatives of the audience for whom they are intended: working professionals. Consequently, they represent a blend of theory and practice in what we believe is a usable form and one we hope will be widely helpful.

Wilbur Schramm
EDITOR'S INTRODUCTION

These materials are part of a series of development modules designed and produced at the East-West Communication Institute to assist professionals working in population and family planning information, education, and communication (IEC) programs in sharpening their professional skills. A wide range of expertise--drawn from IEC programs in Asia and the United States, from universities, and from the Communication Institute staff--has been brought to bear on the development of the materials. Acknowledgment of authorship is given in each module. The project has been supported with a grant from the U.S. Agency for International Development.

We began this project with the major goal of producing professional instructional materials which, in addition to serving as the core of population IEC professional development programs at the Institute, could be adapted and used in a variety of training and development settings. To this end we have attempted to make each module as complete and self-sufficient as possible. The modules are self-instructional to lessen the burden on teaching and training staffs, and to facilitate their use on an individual basis. We have built the modules around real life cases, problems, examples and data, and have sought at all times to strike a balance between principles and techniques for practical application.

A basic premise of our work with the modular materials is that they will be constantly revised. As we use the materials in Honolulu, and as cooperating institutions use them in other institutional settings in Asia, Africa, Latin America, and the United States, we receive feedback which helps us refine and improve the modules. We are especially grateful to the 40 participants from Asia, Africa, Latin America, and the United States in the First Modular Program of Professional Development in Population and Family Planning IEC who helped us conduct the first full field test of the materials in Honolulu in the spring of 1974. Their critical review and commentary has been a rich source of ideas for improvement. We owe a similar debt of gratitude to the numerous IEC experts around the world who reviewed and criticized the materials. A special vote of thanks is due the Planned Parenthood Federation of Korea, which has generously shared with us the results of their project to review, revise, and adapt modules for their own use.

Recognizing the need for continual improvement of the modules, we are nonetheless sharing them in this "second revised form." We encourage non-profit education and training institutions to use the materials, revising, adapting, translating and tailoring them to meet their needs. We would be grateful for feedback on the nature and results of such efforts.

We intend to continue developing existing modular materials and will be adding modules as the need arises. Institutions interested in obtaining copies of the modules and audiovisual support materials are encouraged to write to the Communication Institute for more details.
The conceptualization and coordination of the project has been the work of the Task Group for Modular Professional Development. Without the creativity and hard work of these people, there would have been no modular materials: Ronny Adhikarya, George Beal, Jerry Brown, Ellwood B. Carter, Sanford Danziger, James R. Echols, O. D. Finnegam, Francine J. Hickerson, Ying Ying Hsu, D. Lawrence Kincaid, David Kline, Suniye Konoshima, Jan Labrie, Iqbal Qureshi, David Radel, Syed Rahim, Merry Lee San Luis, John Shklov, Mary-Jane Snyder, Victor Valbuena, Hichul Whang, Margaret White, and Robert P. Worrall.

We gratefully acknowledge the support for the project given by the U.S. Agency for International Development. Special thanks are due to Dr. Wilbur Schramm, whose guidance has been essential, and to Dr. Robert P. Worrall, Assistant Director, whose support made it possible to transform an idea into reality.

John Middleton
Honolulu, 1976
INTRODUCTION

This module is about how people communicate—what has to happen in order for communication to accomplish what it is intended to, what may happen to keep it from accomplishing its goals, how it has an effect, what kinds of effect we may expect from it, what happens differently when we communicate by word of mouth and by mass media, how communication diffuses ideas and new practices, and other background information that will help one to use communication intelligently in a program of social change.

In one sense this module is theoretical; in another, very practical. It does not tell you directly how to design a message or plan a radio campaign. Those are dealt with in other modules. It does give you the necessary tools—the knowledge you need to design and plan communication. It will offer you an opportunity to learn why a message of one kind may be more effective than another, or why you will probably get more results from one radio campaign than another. It invites you to explore what has been found in 50 years of communication research about the why questions of communication: why use communication in one way rather than another, why one kind of communication is likely to be successful and another not, why the same communication may have different results with different audiences, and so forth. In this sense it is very practical.

Scientists say that good theory is the most practical kind of knowledge, because it applies generally and broadly rather than to one specific situation only. This module, then, is intended to introduce you to some of the broadly useful things that scholars have learned about the art and science of communicating, so that you can apply those to the everyday tasks and decisions of communication policy and programs. In order to simplify what many different kinds of scholars have written, we have unified many different approaches to human communication into a general convergence model of communication.

OBJECTIVES

When you are finished with this module you should be able to do the following things:

1. to describe what must occur in order for communication to accomplish its goals,

2. to list various types of obstacles that often prevent communication from accomplishing its goals,
3. to explain the difference between a message and the meaning that people give to messages,

4. to explain why the same message does not mean the same thing for everyone,

5. to explain the general process of human communication, and the critical events which occur within this general process,

6. to explain the difference between planned change and the incidental kind of changes which always result from the processes of human communication,

7. to list the basic assumptions of four major approaches for using communication to create change,

8. to identify the most important factors and procedures which will improve the effectiveness of these four approaches to produce the kind of changes which are desired,

9. to explain the strengths and weaknesses of different channels of communication, and

10. to describe some of the special problems which arise when communication is used to create better understanding and acceptance of new ideas and practices such as family planning.

Although everything you will learn about communication in this module is generally applicable to many problems of social change, most of the examples used to illustrate the basic principles are limited to the problems of overpopulation and family planning. Most readers, however, should be able to apply what they learn to other kinds of problems as well.

The module is designed to help you learn, rather than to teach you. At least, no one is going to lecture to you, or give you text to memorize. The study of human communication is not well suited to such instruction. The field of communication is a science, but communication is also an art. Effective communication requires knowledge of the process, but much more than this. It requires the creative application of this knowledge by those who participate in the process. Therefore, you will spend much of your time in class participating in activities which will allow you to experience the basic principles to be learned, and which will give you the opportunity to try out new ideas for yourself.

There is no single text in this field that meets all the needs of a learning module like this one. Rather, the findings and theory from which you will benefit come from many sources. Your task is to interpret the relevant material, fit it to your own experience, and then apply it to your own needs and problems. Therefore, we are going to give you some things to read and suggest further reading for those who are
interested. We will provide materials to look at and to listen to. We shall ask you to think about some questions, discuss them with fellow participants, and read and analyze cases. In other words, we are going to guide you through the parts of a very large field of study that seem likely to be most useful to you.

A NOTE ABOUT THE USE OF MODELS

The process of human communication is an extremely complex phenomenon to study. It touches upon almost all areas of human knowledge, from the physical and biological sciences through the social sciences, including philosophy and the knowledge of knowledge itself. In order for us to understand this complex phenomenon better than we do now, it is necessary for us to "pull out" or abstract those elements and characteristics of the process which are most important. It is impossible, and fortunately unnecessary, to understand everything. To become a more effective communicator what is needed is a thorough understanding of the basic concepts, principles, and models which scholars have so far been able to create to help us understand the process of communication.

In this module we will give you several kinds of models and approaches to communication for you to apply to your work. Because of the complexity of communication, it is possible to approach it in many different ways—looking first at one important aspect, and then later at another. In other words, there are many different ways of looking at communication, and hence, many alternative models of the process which may be useful in given situations. Some may be more useful for one purpose, but not for others. The module is designed to introduce everyone to the same general principles of human communication; then you will have the opportunity to look at, and interpret, several models of communication and change. Your task will be to learn when and where to apply these models depending upon your purpose and the situation in which you plan to use communication.

Although this will become more clear as you get further into the module, a brief example of a physical model, rather than a conceptual model, should make our use of models much more clear. If we wanted to understand how airplanes fly, it would be very useful to build a model based upon the basic principles of flying. Small model airplanes already exist, and many of us have seen them actually fly. From the ground, some of these models may look so real that you could film them for a movie in place of a real airplane. It is not necessary to include all the details and elements that a real airplane has—the instrument panel, the passengers' seats, the magazine inserted behind every seat, the food and drink, or the hostesses! After all, the purpose is only to understand the basic principles of flying.
We can think of other situations, or purposes, where our flying model of an airplane would be inadequate, or rather inappropriate. An interior decorator, for example, would want a model of an airplane which did include all the things which we left out—seats, upholstery, exact window locations, etc. In fact, it is completely unnecessary for the interior decorator to have a model that can actually fly. It would be much better for him to have a much larger, cut-away model which would expose those elements which are most important for his task. Similarly, we may ask what kind of model would be most useful for training pilots on the ground ... or training hostesses to prepare and serve food to anxious passengers.

Eventually, of course, it is necessary to take whatever we can from the various models we have available and then "try out" what we have learned on the real thing itself. We must practice what we have learned from our models. The engineers eventually have to build a real airplane. The pilots and hostesses eventually must take what they have learned and apply it inside a real airplane with real passengers. The same can be said about the study of human communication. We will look at several different models and approaches which will help us understand the process, but eventually we must take what we have learned from all of these models and try it out when we return to participate in the "real" process of human communication.

A NOTE ABOUT THE STRUCTURE OF THE MODULE

This module consists of the following three volumes:

1. A Module Text of readings and written exercises, which discusses and illustrates the basic principles of human communication, and the ways in which communication may be used to change those who participate;

2. A Module Manager's Guide which explains how to use the module and describes a set of learning exercises for practicing many of the basic principles of communication and change;

3. A Module Case Study: Communicating with a Rural Audience, which provides an opportunity to apply what is learned in the module to the analysis of a real communication problem.

In this module we shall give you as much reading material as we can for you to take home and read at your convenience. Throughout the module we shall suggest optional readings for you to pursue if you want to develop greater competence in specialized areas of interest. However, you will probably find it useful while studying this module to have at hand at least one volume for reference and closer reading. If you have not previously studied communication research and theory, the book you
will find most useful, and most closely fitted to this course, is *Men, Messages and Media: A Look at Human Communication*, by Wilbur Schramm (New York: Harper and Row, 1973).

UNIT I
BASIC PRINCIPLES OF COMMUNICATION
SECTION ONE: THE PROCESSES OF COMMUNICATION

What usually occurs during the process of communication? Here are a few examples of what almost anyone would call communication:

A child cries out in the night to its mother.
A motorist honks his horn to warn a pedestrian.
A speaker yells at a crowd on a street corner.
A businessman tells a joke to his friends at lunch.
A passerby examines a poster. It has a picture of a happy family, and a slogan, “Two or three are enough.”
A village landowner reads an official letter. It is a tax bill.
A driver studies a road map.
A traffic light changes from red to green.
A mother in the hospital obstetrics ward asks a question of her physician. “Doctor,” she says, “if we don’t want more children right away, how can we space them safely?”
A dog growls at another dog that is trying to steal a bone.
A picture tube flickers on, and we watch newsmen exchange questions and answers with a member of the national Cabinet.
A man buys a newspaper, climbs aboard the train, and settles down to read on his way home.

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A picture tube flickers on, and we watch newsmen exchange questions and answers with a member of the national Cabinet.

A man buys a newspaper, climbs aboard the train, and settles down to read on his way home.

A fellow worker steps through the doorway to your office and pointing out your window says, "Are you ready yet to..." and stops when he sees you get up from your chair. "Of course," you reply, "a good ten minutes ago."

Before turning the page, ask yourself a question about what you have just read. These are all examples of communication: What is common to all of them? Please use the following space to list the things that you think may be common to all of these examples:

When you have your answer, turn the page.
Is one of the things you listed information?

Perhaps you used a word with similar meaning. In all of these instances, those who participate in the communication process share information with one another: the woman and her doctor, the driver and the man who prepared his road map, the two dogs, or the reporters and the newspaper reader. The essential element in communication is information. One of the participants must express himself through the use of some available medium—a picture on a poster, a letter, a road map, a television picture, touch, sound waves or light waves, etc. Then the information that has been created by one participant must be shared with another participant.

The essential process in communication is sharing. "Sharing" is a much better word to describe this process than sending or receiving. Why? Because sharing does not mean something that one person does or gives to another. It means something which two or more people do together; something they participate in jointly, or in common. To participate is to join with others in some thought, feeling, or action: to share something in common. In fact, the basic part of the word "communication" means common. This process of sharing information, and the relationship of the participants in this process, we call communication.

Communication is one of the most natural, and still one of the most complex and sophisticated things human beings do. It is impossible to think of human beings without thinking of communication. We communicate almost from the moment of birth. We do it almost as naturally and unconcernedly as we breathe. It is only when we have to persuade someone, or write a document, or make a film, or teach a complicated skill that we realize what a complex and difficult thing communication is.

And as we analyze the process we shall see how difficult it is to communicate what we want to, or to accomplish with communication what we intend to. But for the moment let's think back over the examples you have just read.

Some Things to Think About

Look back over the examples of communication. Many of them are obviously examples of human communication—the woman talking to her doctor, the crying child, the speaker orating to the crowd. But...

1. Does all communication have to be human communication?

Consider the dog growling to warn the other dog. The dog has the capacity to create a sign to the other dog to "beware." Animals communicate, to a limited extent at least. Can you think of other examples of animal communication? Communication between humans and animals?
How about the traffic light changing signals? This clearly communicates something to the drivers: when green, go forward; when red, stop. But where is the second human being in this process? A human being made the stoplight to take the place of a man for directing traffic. The stoplight is capable of creating the information that would normally require another man. Can you think of other examples of man-machine communication? How about communication between machines and other machines?

If you think about these instances, you will probably decide that you are surrounded by many varieties of communication.

2. Do both participants in a communication process have to be present at the same time?

Recall the poster that said, "Two or three are enough." The person who created the information on the poster was not present when the passerby read it. He was not present at the same place, nor did he create the poster at the same time the passerby read it. In this case the process occurred over a large distance and over a long period of time.

Can you think of other examples where communication takes place over a large distance, or over a long time? During the Apollo space flights man was quite able to communicate between the earth and the moon. Recent satellites will be able to send back messages to men on earth from Jupiter and beyond—with considerable delay, however. How about the teachings of Confucius? Or Plato?

3. What is it about communication that makes it possible to communicate over such large distances of space and time?

Consider information, or rather the tremendous flexibility with which man can create, maintain, store, retrieve, process, and eventually, perceive and interpret information. Consider the uses of mud, clay, chalk on a wall, beads, string, paper, sound (records and tapes), light (television and movies), radio waves, x-rays, electro-magnetic waves, laser beams, and so forth. Thinking about these things, you may conclude that the whole history of communication is a story of it becoming always more portable, faster, and hence, more capable of conquering both time and space. Does this suggest anything about whether the amount of available information might be increasing?

4. Does communication have to be in words?

The traffic light, the horn, the road map, the co-worker who communicated without having to finish his words . . . these all suggest that communication is much broader than the spoken or written word. In fact, if all of us suddenly forgot all of our words and language, how would we communicate?
Turn off the sound on a television set, leaving just the picture. Does communication stop without the words? No. But what happens when the information in the spoken word is suddenly shut off with the sound? Language greatly increases the capacity of man to express himself to others.

A very large part of human communication, however, is non-verbal. Since this type of information is often overlooked it deserves our close attention.

5. Does communication always require two or more participants?

A soldier on guard calls out in the night, "Who goes there?" If someone steps forward and identifies himself, then communication has obviously taken place. But what if the guard was mistaken; there is no one there. Some information has been created by the guard, but no one has heard it. Is that communication?

The process of communication appears to require two acts: a sending and a receiving act. Earlier we labeled these two acts differently. We said that one participant must create information, and this expression must then be shared by another participant. The case of the guard calling out in the night appears to involve only one of the two required acts: creating. But the guard himself was aware of the message he sent; he heard it. After no answer he may have been thinking that he did not shout loud enough to be heard, or he may have been laughing at himself for being so anxious about every little sound in the night. When no one else answered his call, he knew that no one was there except himself. He created and shared information with himself. Both of the required acts have occurred. Think about this a minute.

6. Is thinking a form of communication?

Now while you are thinking, think about thinking a moment. Is not thinking really talking to oneself? One argues a point with himself; tries out one concept, then another; weighs the arguments; tries to put the information in some logical order; and then criticizes his own logic. Sometimes, without the help of others, a person is able to think through a problem with himself, restructure his ideas about the world, and maybe even solve the problem. It is often convenient to treat thinking as internal communication, where messages are framed and responded to very much as they are when two people are engaged in communication.

The example of the soldier on guard duty emphasizes another important aspect of the process of communication. The person who expresses himself, who creates information for others, is also affected by his own expression. The information that he encodes, or creates, may affect him only in very subtle ways. Sometimes, however, the one who expresses himself is changed more than the other participants. Teachers, for example, often realize that they may be learning more than their students. For this reason, we prefer to say that information is shared among
participants in the process, rather than to say that one party sends information to another party. The word "sharing" encompasses both of the required acts of communication, which traditionally have been referred to as sending and receiving.

When we describe communication in this way, aren't we using a rather broad definition of information? Yes, our concept of information is very broad. It includes not only "facts," but also entertainment and emotion. It includes not only news about the world and instruction, but also persuasion. Let us think of information in a general sense as anything that helps us to structure or change our picture of the environment. In other words, information reduces our uncertainty in a situation. The important thing to remember when we say that communication is the sharing of information among two or more participants is that we are using information to mean much more than the kind of facts one gets from a speech, a book, a computer printout, or a road map.

The Nature of Information

It has just been stated that information reduces uncertainty in a situation. In order to understand the relationship between information and uncertainty more fully, we need a better understanding of how information is created, and then perceived by another human being.

First, let's take a very basic example of information. Suppose we come across a footprint in the mud. Something about the mud informs us that something has passed by previously. Exactly what has happened to the mud that has made this information possible? Basically, it has been changed, altered, or modified by some agent so that it is possible to perceive a recognizable pattern where none existed before. In this case the pattern is in the shape of a footprint. When we recognize this pattern in the mud, we see the difference between that part of the mud which has been changed by someone's foot. The minimal requirement for us to see pattern is the possibility of at least two different occurrences. In this example, we have come across some mud without footprints, and some mud with footprints. There are at least two choices or alternatives. Because there are at least two alternatives, there is some degree of uncertainty or doubt about which is occurring.

In examining the mud, we may be uncertain about two possible states: (1) footprint, or (2) no footprint. If the pattern that has been made in the mud is really unclear, or ambiguous, then we have some trouble deciding which is the case. We may have to study the pattern very closely, looking for whatever clues or attributes are there to help us decide, or to reduce our uncertainty in this situation. The next important step involves the application of some concept we have to help us clarify the situation. In this case, for example, the uncertainty is reduced as soon as we apply our concept of footprint. Sometimes we have a specific word for our concept, like "footprint." Other times we may not have one word for our concept, but rather a set of words. If we decide, for example, that the pattern we have seen in the mud is not a footprint, but was probably made by someone's cane or stick,
then we would have to represent this concept with a set of words like, "someone set his stick in the mud here." If this were a frequently occurring event, and hence a very common pattern in the mud, then we would very likely begin using one word, like "stickprint," or "caneprint," to represent this concept for us.

When a person applies concepts (labels, categorizes, or even "thinks about"), he is seeking to sort his world into significant classes (such as "footprint" or "no footprint") in order that he can treat many different things as similar. Many different patterns (many sizes and shapes, both human and animal) have attributes which are enough alike that they can all be labeled together as "footprints," the general concept we apply to them. Learning how to use these concepts is one of the most elementary and general forms of thinking by which man adjusts to his environment. We perceive our world and then begin treating many of the different things around us as equivalent. In other words, we group the objects, events, and people in our environment into classes, and then we respond to them in terms of these classes rather than their individual uniqueness.

We see an object that is red, shiny, and roundish (its attributes) and infer that it is an apple; we are then enabled to infer further that 'if it is an apple, (then) it is also edible, juicy, will rot if left unrefrigerated, etc.' The working definition of a concept is the network of inferences that are or may be set into play by an act of categorization. *

Let's review what happened in our example of the footprint that made information possible. The following steps, or pre-conditions, were necessary to demonstrate our concept of information:

1. An agent (or source) changes some material, or medium, which is capable of retaining some sign of the change. Perhaps a better way to say this is that someone imposes pattern on a given medium which can be perceived (seen, heard, etc.) by someone else.

2. The minimum condition for pattern to be perceived by someone is the possibility of at least two or more alternative states... on or off, so to speak. As we have seen though, there may be more than two alternatives: (1) just mud, (2) footprint, (3) stickprint, or (4) caneprint.

3. The information which has been created by the first agent is then perceived by another. This act occurs when someone senses, or becomes aware of the changes in a medium, the pattern that has been imposed, or more simply, the information that has been created.

4. Seeing a pattern, however, is not the same thing as knowing what it means. The choice that occurs when this pattern is interpreted involves the application of a concept. It is the application of a concept which finally reduces our uncertainty in a situation. Application of a concept structures a situation, and gives it meaning.

This very simple example was used to illustrate the basic steps required to create and then perceive and interpret information.* Mud is not a very sophisticated medium to use for information. A footprint is just a physical pattern left by someone's foot, not a complex symbol like "freedom" which we may see in a newspaper. The basic steps are the same, however, whether we are talking about freedom in the newspaper or tracking animals in the forest.

INFORMATION PROCESSING IS SELECTIVE

One of the most remarkable features of information processing is its selective nature. Some kind of choice or selection is involved at each step in the process. From moment to moment people select the part of the world that they want to experience. By reading this module, for example, you have chosen not to perceive many of the things that are going on around you at this moment. You are selectively focusing your attention upon the information which we have chosen to share with you on the printed page. There is simply too much information potentially available at any given time for you to process all of it at once. You cannot interpret everything; hence, you focus on what is most important to you, or upon what intrudes, "sticks out," or otherwise forces you to give it the most attention. We have purposely underlined many important (to us) words in this module, hoping that you will focus more attention upon them rather than other words.

The selective nature of information processing explains why the experiences of any two people are never exactly identical. Even two people who appear to be sharing the same experience—watching a movie, for example—do not perceive all of the same things at the same time, nor do they interpret what they perceive the same way. This is because one focuses on, selects, or gives his attention to some things, and the other person focuses on, selects, and attends to other things. They may overlap, or choose some things in common (specific details, etc.), but the experience as a whole, the sum total, will not be identical.

To repeat: Selectivity occurs in all steps of information processing. Looking over this whole process, we can see many areas of selectivity: (1) the selection

*For a more complete discussion of how people categorize and conceptualize the environment around them, see A Study in Thinking by J. S. Bruner, J. J. Goodnow, and G. A. Austin, New York: John Wiley, 1956.
of a medium for expression, (2) the selection of an appropriate pattern to interpret one's thoughts and share them with others, (3) selective perception, (4) selective attention for interpretation, and (5) selective interpretation—the selective application of concepts to understand what is given attention.

The idea that perception and attention are highly selective is often the subject of popular literature, humor, and other forms of art, as the following passage from Kahlil Gibran suggests:

Seven centuries ago seven white doves rose from a deep valley flying to the snow-white summit of the mountain. One of the seven men who watched the flight said, "I see a black spot on the wing of the seventh dove."

Today the people in that valley tell of the seven black doves that flew to the summit of the snowy mountain.*

The interesting thing about this particular passage is that it goes beyond the selectivity of perception and attention. It treats selectivity as a social phenomenon as well as an individual, psychological phenomenon. Some may recognize the man who brought the others' attention to the black spot as an "opinion leader" for his group. This implies that some members of a group play a stronger role in what is selected for attention and discussion than others.

And finally, we also see that memory is selective. We sometimes refer to this as selective retention, which means that out of all of the things that we do pay attention to and interpret, we are only capable of remembering some of them. Many are disregarded and forgotten. Opinion leaders may also influence what a group considers important enough to remember and pass on to others. We will return to the important function performed by opinion leaders in the next unit of the module.

The beauty of a story like the one above, a parable, a poem, or even a painting is its capacity to communicate so much in such a concise, insightful form. We often respond to them with an, "Aha: That's exactly the way it is." They capture an experience which is common to everyone, and then recreate it into a form which can be immediately recognized by almost everyone.

A photograph is also a useful medium for capturing and creating an idea which we wish to share with someone. The photographs on the following pages were taken and then patterned to show more clearly the selective nature of perception and attention.

THE SELECTIVE NATURE
OF INFORMATION PROCESSING

Even when people look at almost the "same thing," or look in the same direction from almost the same place, they do not necessarily experience it the same way. Everyone's own past experiences, and their current purposes, values, and informational needs influence how and what they give their attention to, and interpret.

Therefore, when a person tells you what he sees, he is also giving you information about himself: his interests, his needs, his values, etc.

WHAT DO YOU SEE IN THIS HEALTH CLINIC WAITING ROOM?
A MORE COMPLEX EXAMPLE OF INFORMATION PROCESSING

Notice that even our example of the footprint in the mud could become much more complex. We were only interested in (uncertain about) whether something had made a footprint in the mud or not. A real hunter would want to get a lot more information out of the same pattern in the mud: the type of footprint (animal or man), the type of animal that made the footprint, its size, how recently it passed by, whether it was alone, etc. None of these alternatives even occurred to us. Why not? Because such things are not very important or salient for us. For the hunter they might mean the difference between hunger and a meal, or even life and death. When we say it is important to him to know these things, we mean that he feels a need to know more about the patterns that he sees in the mud. It is valuable information for his welfare and survival. And when it comes to footprints in the wilderness, we are obviously no match for even the most primitive hunter in the forest. When it comes to agricultural practices, few of us are any match for the peasant farmer in his own fields, and so forth.

But when it comes to modern, sophisticated communication media like television, the primitive hunter is certainly no match for us. Most of the content which is usually seen on television would be strange, indeed, to him. What if he heard someone discussing "freedom" on television? If he had never experienced anything like "non-freedom," or control by an external force, then it would be very difficult to inform him about freedom. If he has always been free in his forest, then he cannot possibly interpret what we mean by freedom. As we have already stated, there must be at least the possibility of one other state; non-freedom in this case. Trying to tell such a person he is free would have no meaning for him. He must have some experience with, and some concept of, freedom and non-freedom.

What would happen if we were to expose a tribe of primitive hunters to the miracle of electronic television? Suppose that we could take our own camera, videotape recorder, television, and battery supply to his village. We would now be able to impose pattern on the television screen which is similar to the many sights common to the village, including the villagers themselves. How would they interpret this information?

Anthropologists have often found that when such people first see photographs of themselves they are unable to perceive themselves in the photograph. They sometimes cannot interpret the pattern imposed on the photograph. Remember that for them to recognize themselves, and then interpret the pattern, requires that they apply their own concepts to reduce their uncertainty. When the photograph does become clear, it is not uncommon for people to think that their spirit, or ghost, has been stolen by the camera and trapped in the picture. Their idea of spirits may be the best concept they currently have available to interpret what they see.

1. A young man always ready to make new friends.
2. A young mother just leaving the doctor's office who has to catch a bus by 3:00 p.m.
3. A woman waiting patiently for her turn to see the doctor. Which part of the poster does she focus her attention on?
Television could very likely have the same effect. In fact, describing a television picture as a process of capturing our spirits in motion is not necessarily a poor way to conceptualize the phenomenon of television. Over time, and with more experience, our villagers would eventually develop their own concept of television. But their concept of television would still be very different from ours. This is because our experiences with television and television programs are different than theirs. Once they have formed their own concept of television, however, they have a new tool to use in the future when they encounter similar ambiguous (uncertain) situations. If we showed them a movie, for example, they would have much less trouble adjusting. They would be apt to interpret it as "like television, but different in the following ways . . ."

Learning the way that pattern is imposed or created on a television, and the various patterns and rules that are followed to show certain things on the screen, is very similar to learning how words are organized on a page for writing and reading. In fact, some scholars refer to this as a process of becoming "literate" with a new medium. Communication requires some degree of literacy with the medium that is used.

FOUR BASIC PRINCIPLES OF INFORMATION PROCESSING

1. The most important principle illustrated by these examples is that information, whether in the form of physical patterns or complex symbols like "freedom," can only be interpreted by use of the concepts that a person already has available from past experience, or by some new combination of these pre-existing concepts. This seems to put very severe limitations upon what we can accomplish with information. It implies that we must be very creative in the way that we present or structure "new" information for someone else to interpret on the basis of his own experiences. Rather than saying something the way that you would usually say it (to yourself), try to find a way to say the same thing in the way that your audience would say it in their own words. Say it in a way that they might say it, not the way you would say it to yourself.

2. The second basic principle follows naturally from the first: Information has similar meaning to different people to the extent that they have similar concepts to apply, and they will have similar concepts to apply in a given situation to the extent that they have had similar life experiences. Since it is impossible for any two people to have the same identical experiences in life, the concepts they have can never be exactly the same. That is why we have used words like "similar" and "common" rather than "same" or "identical." We can only approach, or approximate, each other's conceptual meaning, so we speak of similar meaning, rather than identical meaning. The question is how close two people can get by communicating with one another.

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3. The third important principle is that to create a pattern on any medium, the medium must be capable of taking at least two different states (on-off, black-white, footprint-no footprint, word-no word, etc.). From the observer's point of view we would say that for any pattern (picture, sign, symbol, etc.) to be perceived and interpreted it must be capable of being chosen from a set, or list, of two or more possible alternative states (forms, signs, symbols, etc). This "information set" was illustrated by our story about the hunter who encounters a footprint in the mud.

4. The fourth basic principle is made obvious from the first three principles. Stated simply, information processing is a selective process which requires selective perception, selective attention, and selective interpretation of the information which is shared.

Alternatives To What?

Since this ideas of a choice of alternatives is so central to our understanding of information we will look at two more examples to show just how flexible this principle is. Information can be obtained from a very wide variety of situations where there are alternatives to choose from.

If you are studying in another country, for example, and you receive a letter every week from your wife or husband at home which says, "I am well," then you have received information which rules out or prevents you from believing another alternative, "I am not well." But what happens to the information potential of this message if you continue to receive the same message week after week with no change (with no modification)?

If you know that your wife occasionally does not feel well, then her message, "I am well," soon begins to lose its information value for deciding how her health is. It does rule out one alternative, however. At least you know she is still alive and writing letters even if you cannot tell how well she really feels. This is especially true if you know that she would never worry you by telling you when she does get sick.

In other words, the possibility that she will write something different like, "I am not feeling very well today," soon begins to approach zero. If there is no possibility of ever receiving the other message, then the message, "I am well," no longer has much information about her health. Since she always says that she is well, you can no longer tell if she really means it.

Contrast this with the wife who occasionally writes, "I was slightly ill yesterday, but I am beginning to feel better to day." Or the message, "I am seriously

*As we said earlier, to impose pattern requires that one change, alter, or modify something so that it may be perceived and interpreted.
ill today," which, compared to several letters with the same message, "I am well," has a lot of information for you. This is why the most news-worthy items of information are often considered to be the ones which are the most surprising or unexpected. The "new" part of the word news means just that: different, never (or not recently) having occurred before, or not old or repeating again.

Let's consider another example of this principle. The next time you meet a casual acquaintance ask yourself how much information is created with this type of exchange:

"Hello, how are you?"

"I'm fine, thank you. How are you today?"

"Fine."

This kind of standard greeting has become such a ritual that we no longer expect to get much information about how the other person really is today. This is because the probability of other alternatives being stated is so low as to be almost non-existent.

What if the other person said, "I'm very nervous today, big deadline to meet tomorrow."? This statement has a lot of information precisely because it is interpreted in contrast to the most frequently occurring alternative, "I'm fine, thank you." Another way to say this is that it had an element of surprise to it. It is news to hear someone say he's nervous for a change. The statement, "The sun rises in the east," carries no information for us. The sun always rises in the east; there is no alternative. If someone creates another alternative, then we can get information. "The sun will not rise tomorrow," or "The sun will rise one degree further to the north tomorrow." Right or wrong these statements have information value. This third basic principle may be restated as: Information is relative to the alternative possibilities that exist in the situation.

So far we have been talking about information as if it were either right or wrong: as if information eliminated all of our uncertainty in a given situation. Most of the time, however, we have to interpret signs, categorize events or objects, or conceptualize a situation without being 100% sure of our choice. This is why we have used the word "reduce" rather than "eliminate." We reduce our uncertainty by applying concepts in a situation. The unclear pattern in the mud, for instance, may have enough of the characteristics, or signs, for us to say it is a woman's footprint. But we probably would not be sure enough to say absolutely that it is a woman's footprint. We also know that there is a possibility that it could have been made by the shoe of a small man. We are sure enough (80% sure?), however, that we are willing to tell others it is a woman's footprint, or even bet some money on it. But not so sure that we would risk our life on it. For that we would want more certainty, more cues, or additional evidence that it is really a woman's footprint.
As we shall see later, this same principle applies to word-symbols as well as the footprints we may try to interpret in the mud. Take the following statement, for example:

"The loop (IUD) is a safe method of contraception."

Someone who hears this statement may have a pretty good idea what a loop is, but in actuality there are many different kinds of loops, and not all provide the same degree of safety. Does safe contraception mean "safe for the mother's health," or does it mean, "guaranteed to prevent pregnancy"? Most people would want to be very sure they had the right interpretation before they would take any action, or even tell a friend about it.

Where there is any risk involved, people need to be more certain. To become more certain, they will have to get more information to help them decide. In fact, it is useful to think of information as affecting the probability of choice, the choice of one alternative over others. The more information we get (or can extract from a given pattern), the less doubtful we are about the situation. That is, the more certain we are about how we think about, or conceptualize the situation.

How Much Information Is Enough?

To get an idea of how information accumulates over time to affect the probability of choice, imagine that you have been invited to play a game with a brand new Kennedy half dollar. All you have to do is say whether the coin is a "fair" coin or not. By a fair coin, we mean one that is balanced such that if you flipped it in the air, it is just as likely to land on one side as the other. If you choose the correct answer, you win the coin as a prize. Before you call it (conceptualize or categorize it) as a fair or unfair coin, you may collect as much information about the coin as you want. You can do anything to it except alter its current balance in any way. What do you do?

To begin with, you are completely uncertain whether it is a fair coin or not. Each possibility is equally likely, so you cannot really make a choice unless you are simply willing to guess. Guessing is what you have to do when you do not know what to do . . . . when you lack enough information to decide one way or the other.

But since you really want the coin, you decide to get more information. There are many methods of gathering information, from the use of sophisticated instruments to measure weight distribution around the coin's center of gravity to merely flipping the coin to see which side it lands on. One way to find out if it is a "fair" coin is to flip it in the air a few times. If it lands just as many times on one side (heads) as on the other (tails), then it is probably a fair coin, evenly balanced. Suppose you do flip the coin in the air a few times and note that it has landed heads-up two times, and tails-up the other two times. Do you have enough information to
decide? 2:2 looks like a fair coin. Chances are that you would not be sure enough with just four tosses.

Suppose you keep tossing it to get more information. What do you do after twenty tosses if the coin has come up 8 times heads and 12 times tails? Not ready yet? Eventually, you will reach a point where the collection of more information is more trouble (or cost) than your eventual reward, the Kennedy half dollar. If you should get a ratio of say 40 heads and 60 tails after 100 tosses, you might be willing to say it is not a fair coin. In other words, at some point you either become sure enough to categorize the situation, you merely guess, or you just withdraw from the situation without choosing.

This example is similar to many situations where information is collected to help us make an important decision. In the beginning, we may not have enough information. But as we read more about the subject, see more of it for ourselves, and talk to friends about it, we may soon have an overload of information. Information overload exists when a person is exposed to more information than he can possibly process. Processing would involve perception and interpretation, but also the act of relating various pieces of information together and assimilating these elements into a structured whole that makes sense. This becomes especially necessary when we are overloaded with conflicting and contradictory information about the subject.

DO YOU RECOMMEND ORAL CONTRACEPTIVES?

All of us have probably told someone about birth control pills. What do you tell others about the use of oral birth control pills? Are they safe? Are they effective...will they keep a woman from getting pregnant? Before reading any further check how you presently think about oral birth control pills on the following two scales: (Check only one for each scale.)

ORAL BIRTH CONTROL PILLS ARE...

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You might also want to compare your answers to these questions with those of someone else. Ask them why they answered the way they did; then ask them to explain what they meant by the answers that they checked.

Quite likely we have recommended contraceptive pills to others as safe, effective method for preventing conception. But do we actually believe that oral pills are 100% safe and effective? Probably not. However, all of the information that we have collected leads us to believe that oral pills will not cause cancer, or blood clotting, unless certain other necessary conditions are present. We also know that if they are not taken properly, one is likely to get pregnant. For most women the probability is very, very low that they would be dangerous to take or ineffective. Although we are not certain, we are fairly sure that they would be safe and effective. Nevertheless, we do not just guess about such a serious matter. All information that we have collected through reading, talking to doctors or friends, or perhaps personal experience, may gradually lower our expectation that the oral pill would be unsafe, or ineffective. Only when we are sure enough do we decide.

When the probability that they would be harmful is low enough, or conversely, when the probability that they would be safe is high enough, then we are ready to recommend them to others, or try them ourselves. How much information is enough, or how certain we have to be in a given situation, usually depends upon how serious the negative consequences would be if our choice turned out to be wrong, and how much we trust our source and type of information. The act of categorizing the oral pill as safe could have very negative personal consequences. Consequently, we would probably make sure we had the very best sources of information; from experts we trust, from thorough scientific methods for testing the pill, and perhaps from the personal experience of a close friend. We may be even more confident about our choice if the possibility of negative side effects from the oral pill is much lower compared to the possibility of negative effects from pregnancy and childbirth, especially for older women. Information, and meaning itself, is based upon the relativity of the alternatives in a given situation.

THINKING WITH CONCEPTS

This is a good point in our discussion to stop and ask why we have used a term like "concept" when we talk about how people interpret information. When a person sees something and thinks about what it is, he gets ideas about it. Thinking, cognition, and conceptualization are all words that we use to say what a person does when he tries to get an idea about, a picture of, or structure what is going on around him.

Why not just say, "A person thinks about what he sees, and then decides what to do?" This is a much simpler way to say the same thing. We have said that a person interprets what he perceives by applying his own concepts because this kind of description helps us to think about what actually happens when someone thinks.
People do much more than "see" information. They also hear, touch, smell, and even taste things to get information. So we use the word perceive because it includes all of these ways to process information in our environment.

We say a person applies whatever concepts he has available to interpret something he perceives because this description gives us a more specific idea about what a person does when he thinks. Thinking is an active process; it is not passive. Concepts are the tools with which a person thinks. He tries one concept, then another, to see which fits the situation best. He relates one concept to another (or several others), like someone who is constructing a building with blocks, or putting together the pieces of a puzzle to see what the whole picture looks like.

By using the term concept to refer to these tools, blocks, or pieces, we can more clearly see how much thinking and interpretation depends upon the concepts that a person already has. Then it is more obvious how important a person's past experiences are in establishing his present set of concepts. And finally, it is difficult and ambiguous to find out how someone thinks about something (how a potential audience, for example, thinks about family planning), but it is somewhat easier and more clear to find out what kind of concepts someone has.

Concepts which are used frequently by people are often given word-symbols to represent them. If we can get someone to describe something (interpret our message) in his own words then we can get some idea about the concepts he uses. A person's own words may be used to determine indirectly how he thinks about something, or interprets information we share with him.

Some concepts, however, are represented by one word. "A-cane-or-stick-made-a-mark-in-the-mud" may be used to represent a concept rather than one word, like "stickprint." "Gravity" is even a better example of this principle. Some people may not have a word-concept like "gravity," but they have had experience with "things-which-go-up-come-down," or "big-solid-things-are-heavier-than-little-hollow-things." The word, "gravity," is merely a useful tool which helps us to think and talk about this idea, or concept.

If a woman who comes to a clinic has never thought about the "hormones" in her body, or about the "biochemistry of the human body," it will be very difficult to explain to her how the oral birth control pill prevents pregnancy. You either have to teach her new concepts (and perhaps new words), or represent and explain the same thing with concepts which she already has. Since a word-concept like "hormone" requires a whole set of related concepts and medical theory to support it, it might be more helpful to the woman to just say, "the pill fools your body into believing that you are already pregnant, so you do not get pregnant again." Or you might just say, "Taking the pill makes your body act like it is pregnant, but without producing a baby."

Most women know that when you are pregnant you do not get pregnant again. Yet we cannot say for sure which one of these explanations is best without trying
them to see how the woman interprets them with her own words. She may misinterpret what we mean in ways which we are still unaware of. Nevertheless, the phrase, applying concepts to interpret information, tells us what to do to learn how people think about what we say. Simply ask them to tell you.

If you think we have been going in circles, you are right. We have said that to create information which is useful to others and which they can understand, we have to try it with them and see how they interpret it indirectly by listening to the words they use to interpret it. Yet we can only understand the words that they use by applying our own concepts. How do we, or they, know if we are applying the same concepts that they are trying to express with their words? We are back at the beginning of a circle. Now we must use our own words to express the concepts which we have applied to their words, and so on and so forth... Many of you will recognize this circular idea of communication as feedback (going back to the beginning). Feedback refers to knowledge of results. It is a useful conceptual tool with which to think about communication as a process. And it is represented by one, clear word-symbol: feedback. We will return to the concept of feedback later when we begin to build a model of the communication process.

COURSES OF THOUGHT

We have used several examples to illustrate the relationship between information and uncertainty. In effect, we have defined information as that which affects uncertainty in a situation where a choice exists among alternatives. If this definition seems a bit unnatural, it is probably because we usually think of a choice situation as something which requires a decision among alternative courses of action. To use (1) birth control pills, (2) the IUD, or (3) nothing to prevent conception, more closely resembles what we usually think of as a choice situation.

Information is used to decide among courses of action like family planning, buying a house, or selecting a school to attend. Before a decision is made regarding a course of action, however, the individual must first structure the situation in his own mind. He does this by applying those concepts which he thinks are most appropriate for the situation at hand. Selecting and applying concepts is also a matter of choice, which is based upon whatever information can be obtained from the situation. This information affects the probability of one set of concepts being applied rather than another set of concepts.

To remember the distinction between deciding which concepts apply as opposed to which course of action to take in a situation, it may be useful to think of the former as a course of thought. When thinking about a situation a person goes through a series of alternative concepts (and related concepts) until he decides which ones apply best. Eventually, he structures the situation in his own mind so that it "makes sense to him." After he is finished he should be much more certain about what is going on, and hence, what to do about it. That is, he is much more ready to choose a course of action.
Much human behavior can be described as following a course of thought and then choosing the most appropriate course of action in a given situation. In some situations, however, behavior may be quite different, if not just the opposite. For example, we can all think of behavior which is better described as either a "reflex action," "a panic," or an "impulsive response." When an accident occurs, a fire alarm sounds, or we are in a highly emotional state, we are likely to act first, and then think about it later. To the observer, this looks like taking a course of action before thinking about the other choices, or even deciding if it really is a fire.

It is very easy, for instance, to argue that much of the communication of family planning programs will be ineffective simply because some types of sexual behavior are impulsive. "What good does it do to inform people about family planning if they do not think before they act anyway?" Married couples who resist family planning are just as likely to say this as responsible government officials. One of the main tasks of those who use communication to promote family planning is to get people to think before they act; to restructure their thinking about sexual behavior. Not all sexual behavior is impulsive; some aspects do require forethought and planning. And it is repetitive behavior, so you can get people to think about it more the next time around. How do you get people to engage in more courses of thought before they act? Teaching people the concept of family planning is just the first step in this change process.

THE EFFECTS OF INFORMATION ON UNCERTAINTY

Thus far, we have said that information reduces uncertainty. Can you think of any other effect that information might have on one's uncertainty in a situation? How about our soldier on guard duty? Before he asked the question something made him more uncertain. A noise in the night, perhaps. Before he heard the noise, he was fairly sure that nothing was out there. The noise made him less sure, or conversely, increased the likelihood someone might be there. It increased to the point where he was uncertain enough to ask the question. Obviously, some information increases our level of uncertainty, while other information helps us reduce our uncertainty.

We can also think of a case where new information neither reduces, nor increases, our uncertainty, but merely supports or confirms our existing level of uncertainty. In the Kennedy half dollar exercise, for example, you soon reach a point where additional flips of the coin only substantiate what you already believe to be true (most likely). It only confirms how sure you are that it is a fair or unfair coin. It does not actually make you any more, or less, certain. So you are likely to quit collecting that kind of information, at least.

What kind of beliefs do people from your country have that they are already very certain about? You would probably choose a situation for which they have received so much information in their life that they are very sure about the way they
have categorized it (i.e., sure of the concept they apply to it). It may be a situation for which they receive the same information many times a day. Perhaps they even use the concept that their father used, and his father before him. If you asked them about it, they would probably use this concept (or belief) in a statement. What kind of statements like this would they make about family planning or sex?

In the space below, first describe a man or woman from the group that your national family planning program would most like to persuade to practice family planning. (List such things as his or her age, urban/rural location, education, occupation, family size, etc.). Then list three statements that you think they might make which contain the word for a concept or belief like the one described above: they have so much information about it already that they are absolutely sure it applies.

**DESCRIPTION OF SOMEONE WHO STRONGLY OPPOSES FAMILY PLANNING:**

**STATEMENTS THEY MIGHT MAKE ABOUT FAMILY PLANNING WHICH CONTAIN A CONCEPT WHICH THEY WOULD BE VERY CERTAIN ABOUT:**

1. 
2. 
3. 

Now reread each statement and underline any word or phrase which you think might refer to a rigidly held concept.

There is another way in which information can affect our uncertainty. Consider the problem of family planning again. Why would anyone bother to consider family planning in the first place? Why worry about whether or not you should categorize oral pills as safe and effective? If you do not know that contraception is possible, then you will not worry about how to conceptualize or structure it in your own mind. This would also happen if you considered contraception as something irrelevant to you, as something for others to worry about.

Most of us never try to figure out strange patterns in the mud when we pass by them. For the hunter, however, we said that such patterns would be very important; perhaps a matter of life and death. In other words, the information creates a relevant choice situation for him, but not for us. Even when we get concerned, it is not to the same degree as the hunter. We are quite content to quit after we figure out whether or not the mark is a footprint. If someone tells us that a tiger is loose in the area, then the pattern in the mud would very quickly become a serious choice situation for us too. Such information creates uncertainty in a situation where we previously thought no choice existed or was necessary. What could you tell someone?
Applications of the "Uncertainty" Concept to Family Planning Communication

To provide a better idea of how information creates a choice situation, let's return to our example of family planning. Imagine a rural farmer's wife who is finally persuaded by her friends and the local fieldworker to go to the clinic to have an IUD installed. While she is waiting in the clinic a nurse casually remarks to the woman ahead of her, "you know, of course, that some women don't feel well for a few days, but you probably won't miss any work days. " ("Sick in bed! No one Cold me I might not be able to work afterwards. ")

Although this woman has already structured her beliefs about family planning and the IUD to the point where she could choose a course of action (going to the clinic), she is now faced with a new choice situation. It was created by the nurse's offhand comment. What are the alternatives? First, she is forced to reconceptualize the IUD as either something that (1) makes one ill, or (2) does not make one ill for a few days. Secondly, she must also decide (conceptualize) whether she is the type of woman who (1) will not be affected enough to lose a workday, or (2) will be affected enough to lose a workday. This is an oversimplified treatment of her new choice situation. Other factors complicate the situation further. Is it a matter of her general health or her age? How much work she does, or the type of work?

The nurse's comment certainly created a whole new choice situation which is highly important to her, assuming that she has children to take care of the next day, and an already reluctant husband to convince at the same time. Her uncertainty has been increased again, and she is in great need of more information to reduce it. In fact, the nurse's comment created an "information vacuum," an empty space which needs to be filled with information about the immediate effect of the IUD on her health. It must be the right kind of information, and it must come quickly, or else she is liable to change her decision regarding her course of action at the clinic.

Now that we have suggested five possible effects that information may have on a person's uncertainty, we are ready to apply them to one of our first examples of communication: TWO OR THREE ARE ENOUGH, found on a family planning poster. Which of the five ways does this information effect the uncertainty of those who pass by? Increase their uncertainty? Or decrease it? No effect at all? If you think about each of the five alternatives, it becomes apparent that any of the five could apply. Its effect obviously depends upon each observer's own situation, or frame of mind, when he perceives and interprets the message. If he has been considering family planning for some time, then this message might decrease his uncertainty about whether or not to have a fourth child. That is, it might further increase the probability that he will choose to have just three. If he was already sure about having just two children, he may now be less certain about it. If he has never heard of family planning then he might be stimulated to get more information about it. In other words, people use information for their own specific purposes, and they interpret information from their own point of view.

When you have finished you may want to compare your examples with those prepared in the Appendix.

In summary, we have described five effects that information can have on one's uncertainty. Information:

1. may have no effect unless it is perceived and interpreted by someone.
2. may increase one's level of uncertainty in a choice situation.
3. may decrease one's level of uncertainty in a choice situation.
4. may confirm one's level of uncertainty in a choice situation.
5. may create uncertainty (and therefore a choice situation) by specifying previously unknown alternatives; or by making a situation more important, and a decision more necessary.

*Note that if we do not believe the person who said a tiger was loose, it is still not likely to become an important situation for us. The problem of credibility will be discussed again later.
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ARE YOU READY TO GET A VASECTOMY?

Imagine a man who is about 38 years old who has one son and two daughters. Neither he nor his wife want any more children, but his wife has had many physical problems with the modern contraceptives she has tried. One day he overhears someone in a coffee shop telling a friend about a "new" operation for men called a vasectomy which is inexpensive, but prevents conception for the rest of your life without having to do anything else again. It sounded just right for him, but he wanted more information about it before he went to a clinic, just to be sure.

It sounded good, but what is a "vasectomy"? When the man asked his neighbor about it, he replied, "Oh yeah, a vasectomy. My cousin knew a guy who got one. It’s just like castration of animals. It ruins you for life. It made my cousin's friend weak; it really affected his sex life, and he was sick all the time afterwards."

The man could not really believe a medical clinic would perform an operation on a man that would cause all these things. So he was still unsure about what a vasectomy does to you. He was still curious, so he decided to get more reliable information from a doctor at the clinic.

The doctor was very upset about the friend’s rumor. He assured the man that vasectomies were perfectly safe, harmless operations which could be performed quickly even in the clinic. He described the operation and explained how entirely different it is from a castration. So simple that you can go home on the same day after a short rest, and then live a perfectly normal life without ever worrying again about getting your wife pregnant. "If you are sure you will never want any more children, then come back next week and I will be happy to do it for you. Here’s a pamphlet about vasectomies you can read. It will help you explain it to your wife."

Now the man thought he had enough information to decide; he was pretty sure about what a vasectomy would do. He was going to explain it to his wife, show her the pamphlet and then go back to the clinic that week before he changed his mind again. He read through the pamphlet hurriedly, noting that out of thousands of men, just like himself, who had a vasectomy operation, hardly any—only 1.32%—had any complications or after effects. Then he saw a picture of a vasectomy operation. He had never
seen a picture like that before! What was it? How could that be much different from a castration?

Although he was beginning to change his mind again, he decided to tell his wife. She was very confused by his explanation, but as soon as he said "... for the rest of my life," she interrupted, "But you're only 38 years old... what if our son dies?"

Communication is not usually a one-time, one-source process, especially where important life decisions are concerned. We usually can get many different kinds of information from a variety of sources. What does someone do when he does not have enough information to understand his situation well? To decide correctly?

What can someone do when he has too much information and it all seems so contradictory? What can the man in our example do to resolve his vasectomy problem?

The man who thought about getting a vasectomy seems to have a more difficult problem than he had before he started to get more information. Each new piece of information changed his level of certainty or uncertainty. Notice how the order in which the information was processed affected his thinking. If he had obtained his wife's support first, then had gone to the doctor, then had overheard the two strangers, he would have been much more prepared to share his new information with his friend.

He could have shared a different concept of vasectomy with greater confidence. But he did not. Now he is merely confused. He could just guess.

Get a vasectomy and hope for the best. Or he could withdraw and forget about the whole idea. Delay a decision until something happens to change his mind. This would be safer, and besides thinking about it any further might only increase his confusion and anxiety. If he could get more, what kind of information would help him the most?

He could search for more information about himself, about his own body, something which would tell him whether or not he would suffer complications or bad after effects. He could get more information about vasectomy operations, an event which takes place in his present environment. He could get more information about events in his past environment: the number of men in his own community who have had vasectomies, and what happened to them afterwards. He might even find someone nearby who could tell him what this operation was really like. He could try to get more information to help him predict his future environment.

Are malaria and typhoid fever under control forever, or does his only son still have a chance to get them?

There are other kinds of useful information which will affect his decision. The doctor, for example. What kind of doctor-patient relationship does he have with this doctor? Is the doctor really concerned about his safety and well-being, or is he more concerned about adding another vasectomy to the chart on his wall to improve his statistics? The way the doctor talked to him created some information about their relationship. If he asked the man many questions about his family, his son's age and...

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**Figure 1** A Vasectomy Decision as a Complex and Conflicting Set of Information
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state of health, and so forth, then he has some information that the doctor does care about his welfare. On the other hand, if he only talked about the operation itself, the latest statistics, or how fast he could perform vasectomies, then he would think (conceptualize) that their relationship is not very personal.

This last example also provides him with information about the values of the doctor. His conversation may be used to determine whether he places greater value on program targets and statistics or on his patient’s welfare. Information about values is extremely important for deciding to take some action, like getting a vasectomy. In fact, you can go all the way around the "circle" or information set which surrounds our man who wants a vasectomy and interpret the values which are hidden behind each choice of words. Choice usually indicates the existence of values.

<table>
<thead>
<tr>
<th>WORD CONCEPT</th>
<th>VALUE IMPLIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>inexpensive</td>
<td>money $</td>
</tr>
<tr>
<td>contraception</td>
<td>present family and children, versus future children and added expenses</td>
</tr>
<tr>
<td>rest of my life</td>
<td>present welfare (freedom from worry), versus future security (of more sons)</td>
</tr>
<tr>
<td>castration</td>
<td>)</td>
</tr>
<tr>
<td>ruins you</td>
<td>)</td>
</tr>
<tr>
<td>weak</td>
<td>)</td>
</tr>
<tr>
<td>sick</td>
<td>)</td>
</tr>
<tr>
<td>sex life</td>
<td>)</td>
</tr>
<tr>
<td>safe, harmless</td>
<td>)</td>
</tr>
<tr>
<td>quick</td>
<td>value for time</td>
</tr>
<tr>
<td>etc.</td>
<td>etc.</td>
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</tbody>
</table>

To a great extent, the values that a person has will affect which "bits" of information he pays more attention to, or places greatest weight on, when thinking about what to do. If the man in this example can sort out, or decide, which values are most important, then he will have a much easier time deciding who and what to believe, and what to do.

It should also be obvious that if the doctor or communication specialist knew what this man valued the most, they would find it easier to choose the information which would help him the most. If the man has a number of different conflicting
values, then they could provide him with information about the values which would be most important for, or favorable to, his deciding to get a vasectomy.

If you know, for example, that someone is most concerned about (places greater value upon) his own physical safety and ability to work afterwards to support his family, then obviously he needs information about the operation and its after effects. The best source of this kind of information might be what a friend who had the operation can tell him, or it might be a scientific, well-illustrated pamphlet about vasectomies. The kind of information which is most effective (and most helpful) depends upon who it is for. Different people need different kinds of information presented in different ways. You cannot tell which kind of information is "best" by just looking at the information itself.
**THE TYPES OF INFORMATION USED IN COMMUNICATION**

We have considered the kinds of effects that information has upon the uncertainty of those who use it. Our example of the man who wanted more information about vasectomies illustrated how information creates, increases, decreases, or confirms someone's level of uncertainty (or certainty) about something which is important to him. This example also introduced the idea that there are several different kinds of information. We shall now examine the following question in more detail: Information about what?

What are the kinds of things that people use or need information for? At the very beginning of the module we saw many different examples of communication. The cry of the child informed its mother of its existence (in the next room), and its welfare ("I hurt"), and it reminded her of their relationship ("be a mother to me"). The pedestrian used the honk of the car's horn as a warning of the car's presence, and perhaps even its distance from him. The doctor uses his patient's statements to learn that she does not want (or value) more children. The driver learns about his surrounding environment and the distance between places (space relationships) from information on his road map.

In general, participants use the process of communication to share information about:

<table>
<thead>
<tr>
<th>1. What is out there?</th>
<th>2. What, where, when, why, and how do things out there go together?</th>
<th>3. What is good out there?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Their past, present, and future environment, describing the objects and events which occur in these environments.</td>
<td>The relationships among objects and events in the environment. This includes, of course, the relationship that exists between the participants themselves who share information.</td>
<td>The value of objects, events, and relationships in the environment, including the relationship among the participants.</td>
</tr>
</tbody>
</table>

**ENVIRONMENT:**

. . . which is described

**RELATIONSHIPS:**

. . . which instruct

**VALUES:**

. . . which motivate

*Those readers who would like a more elaborate, and more mathematical treatment of this approach to communication may want to read Russell L. Ackoff and Fred E. Emery's recent book, On Purposeful Systems (Chicago: Aldine-Atherton, 1972).*
Most discussions of communication would begin by saying it is important to describe, to instruct, or to motivate receivers for whatever purposes the sources have in mind. Then the question of what kind of information is best to do each of these things is considered.

Our approach begins by asking what kind of information do the participants of communication need to solve whatever problems (or choices) they have? What information helps them to choose appropriate courses of action? We describe the three kinds of information that participants can get (share, or make use of) from the process of communication. Then we turn to the question of what these three kinds of information can do to, or do for, the participants. We have purposely placed greatest emphasis on what kinds of information participants need (or make use of), because we think that the effect of communication ultimately depends upon what the participants pay attention to, and how they interpret the information that is shared. Its effect depends much less upon those who create it (so often referred to as the source).

A good example of this source approach to communication might be the attempts of a governmental official to motivate a general rural audience to practice family planning by describing the values of it over television. Some viewers may interpret his information the way he would like them to, and even feel a greater desire to learn more about contraceptives, and go to a clinic. On the other hand, there may be other viewers who pay little attention to, and who fail to interpret the relationship between family planning and the values that the official is describing. Another part of the audience may not even care about the kind of values that the official is relating to family planning. If he uses education, for example, as a value to motivate his audience to practice family planning, some may accept what he says, some may not see any relationship at all between better education for their children and family planning, and some may fail to see any value in education at all, because they do not want (or think it is necessary for) all their children to get more education. And some may think better education is impossible for their children regardless of what they could do about it.

The effect of the government official's communication in this example depends upon how people in his audience interpret the information which he shares with them. How they interpret his information depends upon their own experiences, their specific situation, and the kind of choices or problems for which they need information. On the other hand, members of the audience can use his information to learn what the official himself values the most (education), and what kind of relationships he himself makes between family planning and education, rather than interpreting his remarks to get information about:

1. the number of vasectomies which occurred in the past (environment),
2. the relationship between vasectomies and bad after effects, or the relationship between the two participants (doctor-patient, impersonal, etc.), or
3. the value which the doctor places upon the patient's welfare as opposed to his job, targets, or statistics, etc.

These three general types of information--environmental, relational, and value information--have been identified or names in response to the simple question: communication may be used to share information about what? There is another useful way to name these kinds of information. If you ask what each of these three types of information does for the participants, then it should be very easy to see that what we have called environmental information simply describes the world around them. What we have called relational (or relationship) information simply instructs them so that whatever courses of action they take to reach their desired goals will be more effective and efficient. And finally, what we have called value information simply motivates them to choose courses of action which lead to certain outcomes, or values, as opposed to others.* These names re-emphasize what we said earlier: For purposeful behavior, information is used for, or applied to, courses of thought about possible courses of action.

In summary, we have talked about the following kinds of information which may be shared through the process of human communication:

<table>
<thead>
<tr>
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<th>Information to do the following:</th>
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<tbody>
<tr>
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<td>DESCRIBE</td>
</tr>
<tr>
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<td>INSTRUCT</td>
</tr>
<tr>
<td>VALUES . . . . . . . . . . . . .</td>
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This raises an interesting question for those who operate family planning clinics to consider. It may be fairly obvious what kind of information they are providing about contraceptives, or the value of a small family, but what kind of information are they giving clients about their relationship with themselves, the clinic, or even the government which sponsors the program? How is this information expressed and interpreted by their clients? By what they say, how fast they say it, tone of voice, or how long they make them wait? And more importantly, in their culture how can they create information in the future to change this relationship...to improve it for both participants? This is indeed a serious matter, because the information which is shared about the participants' relationship can greatly affect how well each interprets the other type of information which they want to share.

In some respects, the participants enter into sort of an implicit contract regarding their relationship. If each one misinterprets the nature of this contract, they are more likely to misinterpret or distort their other messages. A person who visits a doctor, for example, in effect agrees to respect and to follow his advice. The doctor in effect agrees to give the best professional advice he has to the patient. But what happens to their communication if the patient suddenly interprets the doctor's role as that of a salesman who is trying to sell her his preferred type of medicine (perhaps for personal profit)? How does the relationship change if the doctor begins to discuss the religious sanctions for family planning in order to persuade her to accept family planning? Why do many women insist upon a doctor-patient contract with a female doctor when it comes to a pelvic examination, or the insertion of an ND?

In some cases, the participants are quite willing to broaden their relationship and let it change. A patient may only trust a doctor to persuade her about family planning. Some patients also become good friends with their doctor. The perceived relationship can also become a great source of misunderstanding, however. Even the person who replied "very nervous" is expressing information about their relationship: there is enough trust in our relationship to tell you this about myself.

When a person greets another person he has several alternative ways to express how he considers their relationship. The choice of one of those alternative replies has the effect of confirming or disconfirming each participant's expectations, or uncertainty, about their relationship. One can purposely select a new alternative to change their relationship with someone. This happens when you invite a casual acquaintance for a cup of coffee for the first time, or conversely, when you just nod quickly as you pass by rather than stopping. Diplomats often use the protocol for greeting, or the type of reception they give other diplomats to communicate information about the relationship between their respective countries.

The basic principle is the same: the possibility of alternative responses creates a situation where information can be extracted. Even silence has meaning where one knows there are alternative occurrences. Only something which varies can inform; that which is constant cannot inform.
This raises an interesting question for those who operate family planning clinics to consider. It may be fairly obvious what kind of information they are providing about contraceptives, or the value of a small family, but what kind of information are they giving clients about their relationship with themselves, the clinic, or even the government which sponsors the program? How is this information expressed and interpreted by their clients? By what they say, how fast they say it, tone of voice, or how long they make them wait? And more importantly, in their culture how can they create information in the future to change this relationship... to improve it for both participants? This is indeed a serious matter, because the information which is shared about the participants' relationship can greatly affect how well each interprets the other type of information which they want to share.

In some respects, the participants enter into sort of an implicit contract regarding their relationship. If each one misinterprets the nature of this contract, they are more likely to misinterpret or distort their other messages. A person who visits a doctor, for example, in effect agrees to respect and to follow his advice. The doctor in effect agrees to give the best professional advice he has to the patient. But what happens to their communication if the patient suddenly interprets the doctor’s role as that of a salesman who is trying to sell her his preferred type of medicine (perhaps for personal profit)? How does the relationship change if the doctor begins to discuss the religious sanctions for family planning in order to persuade her to accept family planning? Why do many women insist upon a doctor-patient contract with a female doctor when it comes to a pelvic examination, or the insertion of an IUD?

In some cases, the participants are quite willing to broaden their relationship and let it change. A patient may only trust a doctor to persuade her about family planning. Some patients also become good friends with their doctor. The perceived relationship can also become a great source of misunderstanding, however.
Information about what is (environmental) and about what is good (value) is relatively easy to understand. Most of us can think of good examples of these kinds of information. Information about relationships may be further illustrated by the following example from Newsweek Magazine (January 7, 1974, pp. 45-46):

**Selective Attention To:**

- **Personal Relations (teacher-student or advisor-advisee)**
- **Event Relations (means-end relation)**
- **Value Information**
- **Environment**

The fifth-century, B.C., Greek Philosopher Parmenides advised wives to lie on their right sides—event relations—after intercourse if they wanted or instruction to ensure a male heir. Hopeful medieval ladies were told they could ensure a male heir by drinking a mixture of wine and lion's blood. Even today, husbands in the Spessart Mountains of Germany take an ax along to bed as a talisman to produce boys; for girls, the ax is left in the woodshed.

Recently... Investigators in Berlin... have developed a laboratory technique for isolating male-producing human sperm. And in New York, researchers experimenting with mice have devised a method of increasing the yield of females.
Relationships in the World Around Us

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Selective Attention To:

- **Personal Relations** (teacher-student or advisor-advisee)
- **Event Relations** (means-end relation or instruction)
- **Value Information** ("Hopeful"-males are good for heirs)
- **Environment** (Lion's blood in Greece?)
- **Event Relations** (Causal relationship: ax in the shed produces girls . . . male-producing sperm)
- **Value Information** (increase the yield of females implies that many females are good or better for something.)
From all of the information which is potentially available in the above passage, we have selected a few pieces for our attention. Then we labeled them according to the kind of information they provided. This is our interpretation. Naturally, there are other possible selections, and other possible interpretations.

Our ideas about what objects and events are related may change considerably over time as new information becomes available. This passage once again underlines the difference between information about relationships in the environment and information about values. We have several different methods to produce a male or female child. Some also inform us about the relative value of males as opposed to females. It does not tell us whether or not children have any value...not directly at least. It does imply, however, that some people might value one sex over another. Many of the statements, or messages, that we hear do not directly state values, but since each statement requires an act of choice itself, it often implies value. If someone only talks about male children and ways to get more male children, then it is easy to infer that he values males more than females. He does not actually have to state it.

Information can be used to create many different kinds of relationships between objects and events in our environment. In fact, the kinds of relationships which we make really depend upon the concepts we have from our experience and the way we think about, or combine, these concepts. The following list of relationships will give us an idea of the wide variety of relationships that are possible between just two objects or two events, and our concepts of these objects and events.*
Means-ends beliefs (No. 10) have been placed at the end of the list because of their critical importance to a person's behavior, or courses of action. These are the relationships which people assume or believe to be true about:

(a) what leads to what
(b) what produces what
(c) what comes before what (antecedent)
(d) what comes after what (consequent)
(e) what can be used or done (means) to get what ends
(f) or even, what causes what to happen

This kind of belief may be implied in some of the other ways of relating objects and events (No. 1-9). The example, "Planned families are small and happy," implies that if you plan your family, then you will have a small family and it will be happier. Planning produces, leads to, is a means to, is an antecedent of, or even causes one to have a small family and a happy family. It also implies that a small family may be a means to a happy family (end). Nothing contained in the information itself proves that these beliefs are "true." They are merely beliefs implied by the way that the information is presented.

This kind of list only gives you the ways in which people might relate their concepts of the objects and events in their environment. It cannot tell you how to write messages for your own family planning programs. Nevertheless, it should help you to recognize the wide variety of ways to create messages. This list should make you ask yourself: which kind of ways do the people I want to communicate with use most frequently? Which ways of relating concepts are easiest for them to understand? Which ways of relating things would help them the most to see new relationships which they may have never thought about before? And finally, which way of thinking does my audience enjoy the most? To answer these questions, of course, requires once again that you go out and talk to members of your potential audience (or conduct other kinds of research), to find out how the people you want to share new information with refer to think about, or relate, new concepts.

This kind of research is now being conducted by a multinational team of population researchers in six different countries to determine the value that parents place upon having children today. They are trying to find out what parents think are the main advantages and disadvantages of children. This results in a set of statements which are similar to what we have called means-ends beliefs.

Children may be considered as an end in themselves (value for their own sake), or they may also be seen as a means to, or antecedent to, some other outcome or value. In other

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**DIFFERENT WAYS OF RELATING OBJECTS AND EVENTS WITH INFORMATION**

<table>
<thead>
<tr>
<th>General</th>
<th>Examples:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A is a part of B . . . . . . . . . .</td>
<td>Family planning is a part of the national development program.</td>
</tr>
<tr>
<td>2. A is not B . . . . . . . . . . . .</td>
<td>Abortion is not family planning; or vasectomy is not castration.</td>
</tr>
<tr>
<td>3. A and B, or both . . . . . . . .</td>
<td>Planned families are small and happy (or both).</td>
</tr>
<tr>
<td>4. A or B, not both . . . . . . . .</td>
<td>A family is either small or happy (but not both)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inequality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. A is more (or less) than B . . . . . .</td>
<td>Family planning is more than preventing pregnancy. Vasectomy is more manly than having many children.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Space and Time Order</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6. A is next to B is next to C . . . . . .</td>
<td>The clinic is next to the bus stop which is on (next to) the main highway into town.</td>
</tr>
<tr>
<td>7. A comes after (or before) B which comes after (or before C . . . . . .</td>
<td>Before you begin, first visit our clinic, talk to the doctor, then begin taking oral pills. Do not take them before getting instructions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analogy</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>8. A is just like B . . . . . .</td>
<td>Family planning is just like spacing your crops (so they will grow better); or a man with a vasectomy is just like a river without fish . . . the river still flows.</td>
</tr>
<tr>
<td>9. A is to B as C is to D . . . . .</td>
<td>Babies are to time spacing as crops are to land spacing; or sperm is to semen as fish is to a river.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Means-Ends Beliefs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10. If A, then B . . . . . .</td>
<td>If you wear a loop, then you will avoid pregnancy. If you avoid having too many babies, then you will be rich (or lonely?).</td>
</tr>
</tbody>
</table>

*This list of relationships is an adaptation of Triandis' list of elementary cognitive structures (The Analysis of Subjective Culture, New York: John Wiley, 1972).*
Means–ends beliefs (No. 10) have been placed at the end of the list because of their critical importance to a person's behavior, or courses of action. These are the relationships which people assume or believe to be true about:

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It is not easy to predict exactly how people think about something as important as their children. Notice how parents in one country relate the advantages of children compared to parents in other countries. With Korean farmers, the most frequently mentioned advantage of children is simply "play, fun, and avoidance of boredom." In the Philippines it is, "help with the family chores, and housework." In rural Thailand, on the other hand, the most frequently mentioned value of children is "companionship, comfort, and care in old age."

There are also important differences within each country. Continuity of the family name, for example, does not appear among the three most important advantages for Urban Middle Class parents in Korea, but it is ranked second by parents from rural areas. This suggests that people with different social and cultural backgrounds who live in different life situations have different beliefs about the world in which they live.

**AN EXERCISE IN MESSAGE CONSTRUCTION**

After you have carefully examined the ten ways that people relate the objects and events in their environments, use the space below to practice constructing messages of your own which make each of these kinds of relationships. In a sense, you will be writing your own examples for each of the ten ways. Use messages that you have seen in the past, or create new ones for each type.

<table>
<thead>
<tr>
<th>General</th>
<th>KOREA: Urban Middle Class</th>
<th>PHILIPPINES: Urban Middle Class</th>
<th>THAILAND: Urban Middle Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Happiness for family (42%)</td>
<td>1. Happiness for individual parent (38%)</td>
<td>1. Companionship, avoidance of loneliness (38%)</td>
<td></td>
</tr>
<tr>
<td>2. Incentives to succeed (25%)</td>
<td>2. Help with family chores, housework (36%)</td>
<td>2. Children as a bond between spouses (28%)</td>
<td></td>
</tr>
<tr>
<td>3. Satisfaction with childbearing ability (25%)</td>
<td>3. Help in old age (33%)</td>
<td>3. Character development, responsibility, maturity (23%)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rural Lower Class</th>
<th>Rural Lower Class</th>
<th>Rural Lower Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Play, fun with children, no boredom (30%)</td>
<td>1. Help with family chores, housework (48%)</td>
<td>1. Companionship, comfort, care in old age (43%)</td>
</tr>
<tr>
<td>2. Continuity of family name (25%)</td>
<td>2. Help in old age (35%)</td>
<td>2. Continuity of family name (28%)</td>
</tr>
<tr>
<td>3. Happiness for the family (18%)</td>
<td>3. Happiness for individual parent (32%)</td>
<td>3. Unspecified help (old age not mentioned) (18%)</td>
</tr>
</tbody>
</table>

**Source:** For the complete table which includes Taiwan, Japan, and the U.S. (Hawaii) and a discussion of the results, see J. T. Fawcett, et al., "The value of children in Asia and the United States: comparative perspectives," paper no. 32, East-West Center Population Institute, Honolulu, Hawaii, 1974, pp. 36-38.
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<thead>
<tr>
<th>General</th>
<th>YOUR EXAMPLES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A is a part of B.</td>
<td></td>
</tr>
</tbody>
</table>

2. A is not B.

3. A and B, or both.

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The Banan a Tare es of Cavite, Philippines

We have a good example of what can happen when you do this kind of "research" before beginning a large-scale communication effort about family planning and contraceptive methods. Dr. Juan M. Flavier, of the International Institute of Rural Reconstruction (in Silang, Cavite of the Philippines), noticed over a decade ago that most of the words and concepts which health extension workers were using to communicate about family planning were unintelligible to most rural people. * The words being used were unfamiliar and mostly based on technical, medical terminology outside of the audience's experience.

Unable to solve this problem by himself, he confessed his problem to a very well respected, elderly woman in a rural village he was visiting: "I can't seem to put across the messages to potential family planning acceptors. How would you do it if you were in my place?"

She was unsure and hesitated to answer, but finally said:

I do not know. But when you were explaining the whole family planning process what kept coming into my mind were agricultural situations. You mentioned ovary, ovum, uterus, and frankly they do not sound real to me. But I can understand it in terms of string beans whose seeds are (squeezed) out and grow on fertile fields. I do not know. (pp. 3-4)

After this idea for relating family planning principles to agricultural practices was made clear by this village woman, he organized small barangay (or village) groups of seven to ten men and women in various rural areas to teach the family planning experts (fieldworkers, health staff, "technocrats," etc.) about their own farming methods and life experiences. Family planning was put aside as a topic until after the groups had a chance to talk about other things . . . and in their own words.

The family planning experts listened to the way these groups described their life and farm practices, paying special attention to any new agricultural or household "parallels" to family planning like the green bean analogy created by the elderly woman. So, in addition to learning some of the ways that rural people think about their problems and tasks, the staff members which met with each discussion group were able to collect a whole set of agricultural beliefs and practices which could serve as a conceptual springboard or analogy to what they want to share later about family planning and contraception.

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The parallels which looked most useful for helping rural people understand the key concepts about family planning and contraceptive methods were then given to professional artists to create messages to take back out to the villages for pre-testing and then for further group discussions:

The analogies are depicted in small charts (10" x 13") with attractive drawings. There are generally two drawings on each chart, one depicting the agricultural situation and the other drawing out a parallelism in the family. Only one message is projected per chart. The captions are in verse to capitalize on the inherent love and enjoyment of the rural people for balagtasan (debate in verse) and duplo (couplets), two very popular barrio art forms. (p. 5)

On the following page we have printed photographs of one of the analogies which was developed by this method. By listening to how banana farmers were able to prevent their plants from reproducing too many new shoots, the family planning officials discovered a rather interesting parallel to the concept of family planning and the use of the loop (or IUD).

As the drawing shows, a banana plant runs out new plants from the ground at the same time it is bearing fruit. Through their own experiences, the banana farmers had learned long ago that the more new runners that the plant sends out, the smaller the fruit will be (an if A, then B belief). To stop the plant from reproducing too many new plants, the farmers discovered that they only had to cut the ones which they did not want, and then drive a stake down into the middle of each new stalk. Their normal practice is to leave at least two new stalks: one to replace the plant which is bearing fruit, and another for possible transplanting later... just like having two children to take the place of their parents (an A is just like B relationship).

By this simple technique, their bananas would be bigger and sweeter, and the new banana plant would have plenty of room to grow when the old plant had yielded its fruit to the farmer. By coincidence, this whole reproductive cycle of the banana plant takes about nine months!

This particular analogy is fruitful in more ways than one. In addition to its similarity to the concepts of spacing and limiting family size for the health and welfare of the whole family, it also offers a good parallel to explain how the loop (or IUD) works. The stake which is implanted in each unwanted new plant works according to the same principle as the loop. As long as the stake is implanted, the new stalk will not grow and bear fruit. However, every farmer knows that if you change your mind, all you have to do is pull the stake out and the plant will begin to grow again (another if A, then B relationship). Therefore this analogy (the stake is to the new plant, as the loop is to the uterus) could also be used to reduce some couples' fears that the loop would have permanent effects.
One afternoon after using this particular parallel with a group of farmers from this same region, a woman stayed to ask Dr. Flavier about the bleeding which she was experiencing just after having her loop inserted. He asked her if she had heard the story about the banana plant which was discussed that day. Replying that she had, he told her:

"Remember the sap which came from the banana plant where the stake of wood was implanted? There is usually a little flow of sap with each stake, but it usually stops after the plant adjusts to the stake. The bleeding that you are having is very similar. It should get better soon after your body has adjusted to your new loop. But if it doesn't, or if the flow gets stronger then please visit your doctor at the clinic; otherwise you do not need to worry."

Since it was well known that it is the sap of a plant which has the healing effect (much like our blood) for a damaged plant, the twenty percent or so of the loop cases in this woman's village who experienced some bleeding were soon happier than the others who did not experience this side effect.

This example from the Philippines illustrates the most basic principles of communication which we have discussed thus far. The drawings, the banana plant analogy, and the words that go with it during a discussion of family planning are merely tools which both participants helped to create in order to share more easily their thoughts, ideas, and basic concepts about some of the important problems of farming and family planning.

When these tools were finally applied with new groups of villagers, they all found it much easier to communicate about two difficult problems (banana planning and family planning) with people from very different backgrounds and experience (rural-agricultural and perhaps urban-professional). This is what the communication process is all about: sharing information with one another in order to reach a more mutual understanding about a topic or problem of mutual importance. These are some of the basic ideas and principles which can make it more effective.

**Drawing of the Similarity between Banana Tree Planning and Family Planning**

**Close-up of the IUD Analogy**

Figure 2: The Banana Tree Analogy from Cavite, Philippines
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Since it was well known in that area that it is the sap of a plant which has the healing effect (much like our blood) for a damaged plant, the twenty percent or so of the loop cases in this woman's village who experienced some bleeding were soon happier than the others who did not experience this side effect.

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A LESSON FROM THE DISTANT PAST

We began our discussion of communication by looking closely at the meaning of information. We found that information depends upon a choice from among at least two alternatives. Now that we understand this concept better, let's return to our point of departure by asking: Is this idea especially new?
The idea that meaning is derived from information as pattern, and from pattern as two or more alternative states, is a revolutionary approach to communication in many respects. The idea was given great impetus by the publication of The Mathematical Theory of Communication by Shannon and Weaver in 1949, which sets forth a precise measure of the capacity of channels to carry information, based upon binary digits (0, 1), abbreviated as "bits." The basic notion that information is derived from (or relative to) the alternative occurrences in a given situation may date much earlier than this, however. Ask yourself, for example, if the same concept of information applies to the first few passages from the Chinese classic Tao te Ching (first century, A.D.), translated by D. C. Lau:

I  The way that can be spoken of
   Is not the constant way;
   The name that can be named
   Is not the constant name.

II The whole world recognizes the beautiful as the beautiful, yet this is only the ugly; the whole world recognizes the good as the good, yet this is only the bad.

   Thus Something and Nothing produce each other;
   The difficult and the easy complement each other;
   The long and the short off-set each other;
   The high and the low incline towards each other;
   Note and sound harmonize with each other;
   Before and after follow each other.

The last line of this passage seems so strange that the translator is prompted to note that it probably refers to a ring. "Any point on a ring is both before and after any other point" (p. 58). Thus, it only makes sense if you are thinking of a circle, rather than a straight line. We have not yet fully explored the meaning of this concept of circle, but its discovery will have important implications for us later when we begin to model the process of communication.

Definitions From Our More Recent Past

We have attempted to develop a better understanding of how communication works. Now let's look at how others have talked about communication. We have reached a point in our discussion where it would be useful to summarize by considering some formal definitions of human communication. First, let us review a more formal definition of how we have been using communication throughout our discussion thus far. Then we will compare other definitions which various scholars have set forth.
Communication—a process in which the participants share information with one another in order to reach a mutual understanding about a topic or problem of mutual importance.

This process and the relationship of the participants in this process, we call communication.

Communication—is not the response itself but is essentially the relationship set up by the transmission of stimuli and the evocation of responses.


Communication—arises out of the need to reduce uncertainty, to act effectively, to defend or strengthen the ego... Communication ceases when meanings are adequate; it is initiated as soon as new meanings are required.


Interpersonal Communication—is characterized by the presence of expressive acts on the part of one or more persons, the conscious or unconscious perception of such expressive actions by other persons, and the return observation that such expressive actions have been perceived by others. The awareness of having been perceived is the event which signals the establishment of an interpersonal network.


In the most general sense, we have communication whenever one system, a source, influences another, the destination, by manipulation of alternative signals which can be transmitted over the channel connecting them.

The word communication will be used here in a very broad sense to include all the procedures by which one mind may affect another. This, of course, involves not only written and oral speech, but also music, the pictorial arts, the theatre, the ballet, and in fact all human behavior.


Communication—the mechanism through which human relations exist and develop—and the symbols of the mind together with the means of conveying them through space and preserving them in time.

Charles Cooley, 1909.

In place of information some use ideas, thoughts, or knowledge. For Osgood, the source transforms his thoughts into words or pictures, sounds or gestures, that become "signals" for the attention of the receiver. Cooley places stress upon "the mechanisms by which human relations exist and develop." Ruesch is a psychiatrist; Bateson is an anthropologist; Shannon is a mathematical physicist; Cooley was a sociologist. It is noteworthy that scholars from so many different fields have studied communication, not to mention the large number of art forms and professional activities which are communication.

Almost 40 years ago in the first edition of the Encyclopedia of the Social Sciences, the distinguished anthropologist, Edward Sapir, made the following statement:

While we often speak of society as though it were a state structure defined by tradition, it is, in the more intimate sense, nothing of the kind, but a highly intricate network of partial or complete understandings between the members of organizational units of every degree of size and complexity, ranging from a pair of lovers or a family to a league of nations or that ever increasing portion of humanity which can be reached by the press, through all its transnational ramifications. It is only apparently a static sum of social institutions; actually, it is being reanimated or creatively affirmed by particular acts of a communicative nature which obtain among individuals participating in it . . . . If we extend this . . . into every conceivable field we soon realize that every cultural pattern and every single act of social behavior involve communication in either an explicit or implicit sense.
Communication is the fundamental social process. Thus when we study human communication we are working with something very ancient and very powerful, something that is basic to all human relationships and to all social change.

A SUMMARY EXERCISE

For a final review of this section we have prepared a list of the most important concepts which we used in the discussion. These have been organized below in the form of a matching exercise. First read the description of the concept, then select the correct name or label for the concept from the list. There is space next to the concept's description for you to write the name or word which you have selected for it. There are a few more descriptions of concepts than there are names for them, so some of the concept names will have to be used more than once.
List of Concept Names:

a. feedback  
b. communication  
c. Information  
d. interpreting  
e. concepts  
f. perceiving  
g. attending  
h. pattern  
i. environmental information  
j. relationship information  
k. value information  
l. analogy  
m. beliefs  
o. uncertainty  

Concept Descriptions:

1. the application of a concept to reduce uncertainty in a situation.
2. focusing one’s concentration for interpretation.
3. the process of sharing information, and the relationship of the participants in this process.
4. the creation of pattern by changing or modifying some medium of exchange.
5. information which instructs.
6. a state of choice, or a situation which requires a decision.
7. the tools which one uses to think with, or the blocks we use to construct reality.
8. information which motivates.
9. a way of relating objects and events in the environment according to their similarity.
10. that which affects uncertainty in a situation where a choice exists among a set of alternatives.
List of Concept Names:

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11. when someone senses or becomes aware of information that has been created.

12. information which describes.

13. a network of inferences that are or may be set into play by an act of categorization.

14. knowledge of results.

15. relationships of objects and events in the environment which people assume, or accept, to be true.

16. a set of two or more possible alternative states.

17. a process in which the participants share information with one another in order to reach a mutual understanding about a topic or problem of mutual importance.

AFTER YOU HAVE FINISHED, YOU MAY WANT TO CHECK YOUR RESULTS WITH THE ANSWERS IN THE APPENDIX.
SECTION TWO: THE MEANING OF MESSAGES

In the preceding section we treated a message as a collection of patterns, signs, or symbols which have no meaning in themselves since they are only modifications of some medium which is useful for communication; footprints in the mud, sound waves in the air, light waves, and so forth. People agree, however, to give meaning to the symbols which they use. Someone who does not know the code or rules by which meaning is assigned to symbols can only guess at their meaning. People will not have exactly the same meaning for the same symbols, but their meaning can be similar enough that they can share the same message and thus "communicate."

The understanding of meaning is one of the oldest philosophical problems of man. The study of the physics of communication and the work done by modern engineers of communication systems have provided some insights into the problem, but only up to a very limited point: Heard language physically exists as sound waves 'gently knocking' at the ear's 'chamber door.' The problem is that 'meaning' must be brought into the picture somehow, and here's the rub--meaning has no accepted material correlate. --Charles E. Osgood (1953, p. 681)

We therefore turn to the work of modern psychologists for a better understanding of meaning.

In the last section we presented some of the definitions and statements that others have made about communication. Instead of waiting until the end of our discussion to see what modern scholars have said about meaning, we will begin with them. We do this for the obvious reason . . .

1923: The analysis of the process of communication is partly psychological, and psychology has now reached a stage at which this part may be successfully undertaken . . . there is no longer any excuse for vague talk about Meaning, and ignorance of the ways in which words deceive us.

Ogden and Richards, The Meaning of Meaning

1946: Accounts of meaning usually throw a handful of putty at the target of sign phenomena, while a technical [theory) . . . must provide us with words which are sharpened arrows.

Charles E. Pierce, Signs, Language & Behavior
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Signs, Language & Behavior
Signs, Symbols, and Referents

In the first section we said that the participants of communication create messages (as information) in the form of patterns, signs, or symbols in the hope that they will express certain meaning to the other participants. How do these signs and symbols acquire meaning?

The most obvious thing we can say about a sign is that a sign is a sign of something else. A sign refers to something beyond itself. A footprint is a sign of the foot. The foot then is the referent for a footprint. Although it might seem rather obvious that the footprint is not the same thing as the foot that made it, in some situations the confusion between a sign and its referent can be the cause of much misunderstanding and conflict. In some countries, for example, the punishment for mistreating the nation's flag (sign) is just as severe as mistreating the country itself (the referent of the sign). Have you ever had the experience of finishing a delicious meal in a foreign country, and then find out afterwards that you have been served a type of food that you would never think of eating at home? (Like snakemeat, chocolate-covered grasshoppers, or perhaps even a "hot dog" made from pork). Being told that you have eaten "snakemeat" (the sign) actually has the power to make some people sick. The meat itself (the referent) may be otherwise quite delicious.

In this sense, it seems that a sign has the effect of stimulating a response to its referent. A sign has the power to produce a response, not just to itself, but also to its referent. So when someone says "fire," it stimulates us to think of the physical phenomenon of fire, not just the word that was said. When we see smoke we may have a similar response. That is, smoke is also a sign of (makes us think about) fire. There is a very important difference between the word "fire" and smoke, however. Smoke is a natural sign of fire; the word "fire" is an artificial, or man-made sign.

An artificial sign is arbitrary; it can be changed if we want to use a different sign. We can use a different sounding word, like "flame," or "holocaust," and we can even use a word from a different language like "fuego" (Spanish). Smoke is always a sign of fire. We cannot arbitrarily decide to do away with smoke and substitute a new sign. We cannot substitute a different referent for smoke, like water. Smoke and water do not always appear together in nature. On the other hand, if we went to Spain and said "fuego," it could refer either to fire or passion. The referent is not always exactly the same thing, and we can change it.

One reason that language is so powerful is that we can change it when it is necessary. We can try different words, invent new words, and even get others to accept a new meaning (referent) for an old word we want to use a new way.

Many kinds of signs look very much like what they represent. A footprint is in the same general shape as the foot that made it. Most pictures have this quality of looking like their referent. A photograph or a map are good examples of signs that are similar to what they represent. A word in English like "gurgle" has the quality of sounding like the action it refers to (water flowing down a drainpipe).

1961: Meaning is a harlot among words, it is a temptress who seduces . . . from the path of intellectual chastity.

Colin Cherry,
On Human Communication

1965: In a word, what I am trying to say . . . is simply this: Language is exceedingly complicated. Forgive me for taking so long to say such a simple and obvious thing.

George Miller,
The Psychologist

. . . that understanding is no easy task. It is not an impossible task, however. The work that has been done over the last fifty years has shed much light on something which is, for all practical purposes, unobservable.

In the last section we showed how two people overcome the physical barrier which separates them by creating, sharing, and then interpreting information which expresses their thoughts. One of the critical steps occurs when the participants "apply concepts from their own experiences" in order to interpret the information which is shared. This is a useful description of the process, but it is incomplete. Meaning goes beyond the limits of the concepts that one may apply in a situation. The meaning that one gets from (or has for) a concept of something is much deeper, much greater than the concept itself.

William James clarified this aspect of meaning as early as 1892 in one of the first textbooks of psychology:

. . . although (our conceptual states of mind) also possess an immediately given 'content;' they have a 'fringe' beyond it, and claim to 'represent' something else . . . The 'blue' we have just spoken of, for instance, was . . . a word; but it was a word with meaning. The quality blue was the object of the thought, the word was its content. The mental state . . . expressly pointed at something more in which it meant to terminate.

For now, let's just say that there is more to meaning than the concept alone. Sometimes a whole network of associations, related thoughts, and feelings accompany and add meaning to the concepts which we apply. Let's begin our inquiry of meaning by examining the nature of the signs and symbols, and the referents we give them when we communicate.
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Meaning as Reference

Figure 4 shows a diagram of the relationship between a symbol and its referent, and the relationship of the symbol and its referent to the thought of the person who tries to interpret the symbol. This is Ogden and Richard's (1923) classic "triangle of reference."

There is a direct, solid connection between the symbol and the person's thought which it stimulates, and a similar relationship between the thought and the referent of the symbol. But there is no one-to-one connection between a symbol and its referent. The relationship is indirect, and it occurs at all only because someone thinks about it. In other words, the symbol may point to, or refer to, its referent, but it is not the same thing as the referent. Furthermore, the referent of a symbol is not always clear, and there are often a wide variety of referents for the same symbol.

The following type of symbol, for example, is often used in family planning programs. It has the quality of being abstract, yet still resembling what it represents:

![Figure 4](image)

The idea that a concept may have a variety of referents for its meaning can be made very clear with the following message: "Visit your nearest clinic, and begin planning your family today." What does the word "planning" mean to someone who reads this? What does it mean to someone who is familiar with the basic concept of planning, but who has never heard of, or thought about, doing this to a family?

The figure on the following page gives us some idea of the variety of referents which Roget's Thesaurus has recorded for the word "plan." Sometimes planning means to design or to organize. Other times it may mean simply to schedule or to predetermine a set of activities. Which "family" activities could planning possibly refer to? To make matters worse, sometimes planning is used to refer to the idea of conspiring and inventing a scheme or plot to do something... perhaps something illegal.

Moreover, people are continually trying to change or to assign new meanings to the term planning—even to the concept of "family planning." In Honolulu recently it was quite common to hear a message on the radio which urged listeners to consider something...

Nevertheless, it is still not the same thing as its referent. A picture of a man cannot do all of the things the man can do himself. But for many purposes it is a good substitute. Pictures and words that look and sound like the thing they refer to have very special effects on us. They can sometimes elicit very stimulating images in our minds which may not be possible to duplicate with words, no matter how many we use.

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![Figure 3](image)

Figure 3 Two Examples of Nonverbal Family Planning Symbols

If it is used well by both participants—program officials and the public—then it may come to represent the concept of family planning, while at the same time showing the specifically desired outcome of family planning: two children for two adults.

Some scholars of communication prefer to call these signs "symbols." Whatever we choose to call them, their defining characteristic is their capacity to stand for something in the mind of one participant, and if accepted, for something in the mind of the other. Signs are the basic elements that can be decoded into meaning by the participants who share them.
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![Diagram of the Triangle of Reference]

Figure 4  C. K. Ogden and I. A. Richard's Triangle of Reference

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Moreover, people are continually trying to change or to assign new meanings to the term planning—even to the concept of "family planning." In Honolulu recently it was quite common to hear a message on the radio which urged listeners to consider
"family planning as much more than just preventing pregnancies. " The message then explained how family planning can mean many more activities. The purpose of the announcement, in fact, is to teach new meanings for the term. Unfortunately, the year before over the same radio stations listeners heard a similar message which was urging them to think of buying and providing their loved ones with a proper burial plot as an accepted part of their normal family planning activities. So, it seems that family planning continues even after death!

If one word can have so many meanings and even acquire new ones, how can anyone determine which meaning is intended when a symbol is used? In the example above, we used the thesaurus to obtain a list of terms which could be used in place of "to plan." This would imply that maybe the dictionary has the meaning of the symbols we use every day. To prove whether this is true or not, look up the following word-symbol in your dictionary, then write down what it means in the appropriate space:

GORSE means:

What does the dictionary tell us that gorse means? The dictionary which we used (Webster's Collegiate Dictionary) tells us that gorse means "furze." But who ever heard of anything like furze? Fortunately, the same dictionary gives us another meaning, "juniper," and we see that it can also be used as an adjective, "gorsy." Some of our readers may have meaning for juniper, but very few will have much meaning for gorse, furze, or gorsy unless they have spent some time in England, or reading British literature.

Since many readers may think that the dictionary "has" the meaning if you just keep looking long enough, we encourage you to look up the words used to describe "furze."

Furze n:
a spiny yellow-flowered evergreen leguminous European shrub.

This definition will get many readers much closer to the referent for furze and perhaps even gorse. But this is only because they may have finally come across other word symbols for which they already have some meaning or reference. The important point is that the reader must already have some meaning for the words that are listed in the dictionary, otherwise the dictionary is useless. Just more furze without meaning.

Anyone who has learned a new language has usually had the experience of running in circles or to a dead end when trying to find the meaning of an unfamiliar word. This would have happened if the only definition of furze had been gorse again.

Figure 5  The Variety of Potential Meaning for One Word in a Family Planning Message
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The dictionary merely provides a history of how people have used each word, along with some of the other words which have been used in its place. For this reason, dictionaries are out of date as soon as they are published. Many of the words have already been used in new ways to refer to, or mean something slightly, or even radically, different. The use of the word "planning" with the word "family" at first may seem like a radical departure from the usual use of these two words.

One of the curious things about words listed in the dictionary is that the ones which have the longest "histories" (or the greatest number of different definitions and synonyms) are the words which are used most frequently. That is, the more frequently a word is used, the more meanings it seems to have. More common words like "run" have many more listings in the dictionary than rarely used words like "gorse." There is a good reason for this. Psychologically, it is much easier for people to learn and to remember a smaller number of words for frequent usage, than to learn a separate word for each different meaning they want to communicate.

R. F. Terwilliger states this much more strongly in his recent book Meaning and Mind (1968, p. 324):

> We can even state a generality that the more meaning the better; for each additional meaning allows that much more escape from the simple one-to-one control of the mind by words. Meaning is freedom, if you will.

The uncertainty or ambiguity about which meaning or referent a word refers to is reduced by looking at how the word is used. Words do not come with meaning, nor do they have meaning by themselves. Words are given meaning by people according to the way in which they use them. People have meaning, not words, not dictionaries.

In most situations this characteristic of meaning does not cause too much trouble. We can easily recognize that the run in "run around the track" does not mean the same thing as the run in "run to the bank in your car," or the run in "the run on the banks caused the stock market to crash." The first run is done entirely with one's body. The second run just means "go" to the bank in an automobile, but the third run has a connotation or association with "panic" by a large number of people at the same time. Obviously, it is the context in which the word "run" is used which helps us decide what it means in each case. But also notice how the meaning for the word "run" in each of these three examples helps us to understand more clearly what the other words mean: the word "track," the words "bank" and "car," and the words "bank" and "crash." Only our past experience--using these words ourselves, or seeing others use them the same way--allows us to be somewhat certain that these phrases do not refer to railroad tracks or the banks of a river rather than tracks for racing and banks of money.
Interpersonal "Triangles of Reference"

If the meaning of a word-symbol is determined simply by how it is used in the language—that is, by how people use words to communicate in specific situations and contexts—then it is obvious that there can be no purely individual or psychological theory of meaning. The very nature of meaning is social, just as the fundamental nature of communication is social. Meaning is given to words when two or more people use words to share their thoughts with one another in specific social contexts.

Ogden and Richard's triangle of reference which we analyzed earlier presents only half of the picture of how symbols acquire reference and meaning. At least two such triangles and two persons thinking about the same symbols are required to adequately represent the interpersonal nature of the meaning of symbols.

Figure 6  Interpersonal Triangles of Meaning

The interpersonal triangles in Figure 6 show two people who share the same symbol through the process of communication. Although they may be thinking about the same set of symbols when they communicate, the wide variety of referents that each person has for the same symbols means that they will not necessarily be thinking about exactly the same referents for the same symbols.
Two people may be talking about family planning, but one may be thinking about planning in the sense of "scheduling," while the other is thinking about planning mainly as "organizing" his family life better. They are still talking about the same thing—family planning—but their thoughts about the referent for family planning are not identical. As the diagram shows, the referent may be slightly out of focus due to the wide variety or freedom of meaning that is possible when people use symbols to communicate.

Their thoughts may be similar (or they share something in common) but not identical. This can be pictured more clearly as two overlapping circles of meaning.

![Diagram](image.png)

Participant A and Participant B each have their own meaning for the symbols they share as represented by Circle A and Circle B above. The white area where their two circles overlap represents the meaning which they have in common for the symbols they are sharing. On the other hand, the shaded area around the edges of each of their respective circles represents that part of their meaning which is not shared, but which is unique to each one. Sometimes there is a lot of overlap or common meaning when two people communicate; at other times there may hardly be any.

When two people first begin communicating about a topic, they may not have very much common meaning for some of the symbols which they are using. But as they continue to use these symbols (in the appropriate context) according to their own meaning for them, they may learn more about each other's unique meaning and then begin to share more and more common meaning for the same symbols. In fact, one of the primary goals of communication is to discover how much meaning we share in common with others. Sometimes we may find it necessary (or merely want) to increase the amount of meaning which we hold in common with others, or conversely, to reduce the amount of meaning which is unique only to ourselves. Through the process of communication, for example, our family planning "scheduler" and our family planning "organizer" mentioned above may discover the differences and similarities which they have for the term "family planning."

At other times, our main purpose may be to clarify our own unique meanings for something—a tree, a flower, gravity, a child, the world problem of hunger, etc.—so that we can share them with others who have never thought about these
things the way we have. Or, we may simply want to create new meanings for familiar symbols. This is often considered as the special activity of the poet, the artist, the writer, the scientist, etc., but in fact, all of us may sometimes create new meaning. New meaning is by definition unique to the individual until he shares it symbolically with others. Then it may or may not turn out to be so unique after all.

THE CONTEXT OF MEANING

It should be much clearer from the examples and new concepts that we have considered so far that the process of sharing common meaning is not very simple. Why is meaning so complex? Because in order to have meaning at all, there has to be a possibility for the meanings we give signs to vary, rather than be constant; to depend on other factors in the situation, rather than be independent; and to be relative to other things, rather than absolute. Let's now turn to a few exercises and examples which illustrate some of the contextual factors that affect the meanings we give in a situation.

Quotes from the Past

If someone says to you that "black is white," or that you would return to your present position if you kept going the same direction in a straight line, your first reaction might be to think he does not know what he is talking about. He is contradicting himself. This is because we do not see the same conditions--or interpret these messages in the same context--that he does when he makes the statement. So we do not understand his meaning. To convince others for the first time that it is possible to sail a ship back home by continuing in the same direction requires that they first accept a world that is round, not flat. A third dimension in space must be added. To convince you that black is sometimes white, one would have to show you negative film from a black and white snapshot from your camera. In that context--under those conditions--"black is white," and "white is black."

Read the following quote from the past:

Prosperity is not without many fears and distastes;
and adversity is not without comforts and hopes.

Francis Bacon
England, 1625

Two words which are supposed to have opposite meaning are compared, and surprisingly enough, each has qualities usually attributed to the other. How can adversity and prosperity be similar in any way? This statement is not outdated. In many ways it applies to situations that exist in the world today. And most people
which is shared. This makes it easier to understand others, but sometimes this characteristic of meaning causes us to make serious errors. When we anticipate someone the wrong way, or when they purposely try to say something which is unexpected (or even "out of context"), serious misunderstanding may result.

Two Words in One

The Chinese word for "crisis" is a good example of the seemingly contradictory nature of meaning. The following character, for instance, means "danger":

This character means "opportunity":

When you put these two characters together, however, the meaning becomes "crisis." The meaning for crisis is much more than just "dangerous opportunity." You cannot just add the meanings of two words to get their new meaning when used together. It is more like multiplication than addition. Although most crisis contains an element of danger, and an element of opportunity, it contains much more. How about adversity? Emergency, strain, instability, or uncertainty?

Family planning is a concept which is represented by two words but our meaning goes beyond the addition of our meaning for "family" and for "planning." The meaning varies from person to person. To some it may just refer to contraception; to others, just the methods used for contraception. Some use it to mean decisions regarding family size, future income and savings, even the education and careers of their children. The concepts we use to interpret words like "family planning" can be either narrow or broad in scope, concrete or abstract in nature. Sometimes the meaning is so broad it encompasses attributes of a word that means just the opposite.

Context and the Anticipation of Meaning

The idea that context is an important source of meaning can be demonstrated very easily by the following sentence:

If we leave out two ________ from this sentence, you can still understand what the sentence ______.

Many times when we are speaking with someone we miss some of the words they are using without seriously misunderstanding what they mean. Our anticipation of what we expect someone will say to us has a strong influence upon our eventual meaning for what is actually said. The context of communication, especially what has already been said, provides many clues about the meaning of the information.
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EXERCISE ON THE CONTEXT OF MEANING

Now let's consider an example outside the context of family planning programs. Examine the symbol written below in capital letters. After you have thought about it for a while, briefly describe what it means to you. In other words, try to define it in your own words.

REBELLION

A rebellion is . . .
After you have finished your definition of rebellion, go back and add information to it from your answers to the following list of questions:

1. How big is it? In how big an area or space does it occur?

2. It takes two people for a disagreement; how many people must be involved before we call something a rebellion?

3. Why does it occur? List two or three reasons why a rebellion might occur.


5. Do rebellions occur in people? In groups or between groups? In nations or between nations? In continents or between them?

6. Is rebellion good or bad; active or passive; fast or slow?

7. Do people get killed in a rebellion? If no one gets killed, do you still call it a rebellion? What other word might apply?

8. Is it organized, or spontaneous?

9. Do those involved have to be armed, or can they have a rebellion without arms?

10. Is it violent, or can it also be nonviolent?

Please finish your own description of rebellion before turning the page.
Now that you have finished describing what you mean by rebellion, examine the following statement. Note any differences between the meaning you had before and the meaning it has in this context:

"What country before ever existed a century and a half without a rebellion?"

He is using rebellion to mean . . .

Now examine the same use of this word, but within the larger context of its use:

"What country before ever existed a century and a half without a rebellion? . . . The tree of liberty must be refreshed from time to time with the blood of patriots and tyrants. It is its natural manure."

Return again to the previous ten questions. How has the meaning for rebellion changed? Is it still good, or bad? Big or small? Violent or nonviolent? How often is "from time to time"? How did the association with "liberty" affect its meaning?

We have examined the sentence in which rebellion is used, and then the context in which this sentence itself is found. What effect would the source of the message have on our meaning for rebellion and the other words used in this passage? How about its historical context? When and where was it stated? What were some of the other conditions at the time which might affect how we interpret his meaning for rebellion?

Before reading any further, place a check mark next to the person (and date) that you think most likely made this statement about rebellion:

52 B.C.: Julius Caesar
1776: George Washington
1787: Thomas Jefferson
1810: Simon Bolivar
1946: Mahatma Gandhi
1958: Charles de Gaulle
1960: Martin Luther King
1966: Mao Tse-tung
The statement that was used in the preceding exercises was made by Thomas Jefferson in a letter to William Stevens Smith on November 13, 1787. It may seem as if we took a very long journey just to find out what one symbol like "rebellion" really means. As a matter of fact, we still do not know what Thomas Jefferson really meant when he used this word. But knowing more about the context in which he said it gets us a little closer to the appropriate meaning. Notice all of the things that this meaning depended upon: the surrounding words, the order and pattern of relationship among these words, the author or source, characteristics of this source, the time and place, and even the social and political environment in which it was used. Meaning is relative and extremely complex. We could go further with this example, for instance. We still do not know the specific situation in which the letter was sent, nor what went before and was expected to occur afterwards. Who is William Stevens Smith? What was his relationship with Jefferson...friend, professor, or gun smuggler? And notice that he used a letter, which is meant to be a rather private channel of communication. Both his statement and its intended meaning would be different is he had said this to a large political gathering, or over television. This example is designed to increase our appreciation for the richness of human meaning. The basic principle involved is similar to applying a concept to categorize a pattern in the mud. But the processing of symbolic information like "rebellion" is incredibly more complex. The symbol remains the same, but the meaning for the symbol assumes an incredibly rich variety of meaning depending upon the context, who used it, why they used it, and so forth. The meaning which we eventually have for rebellion in this context seems to depend upon an almost unending network of related information, both internal and external to the one who tries to interpret it. This is that fringe area of meaning for a concept which William James referred to in 1892. This why applying a concept to interpret symbolic information is only the first step in understanding what it means.

a. How does your choice of source and time affect your meaning for rebellion in the quotation?

b. How would one of the other sources change this meaning?

c. And finally, what information did you use to choose the source?
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We usually interpret someone's words very quickly, without much deliberation over the many possible meanings that they could have. Most of the time we can communicate well enough without being too careful... without pausing to go over a particular word with another participant until we reach more common meaning.

The more experience we have doing this with a particular person, the easier it becomes. When we communicate with a large number of people with whom we have little direct experience, it is unnecessary to spend much more time investigating what kind of meanings they have for the words or pictures we plan to use. We need to be careful about the source of our messages, the timing, the place, the situation of the other participants, and what might have occurred before and after we communicate.

It is very easy to assume that the other person we are communicating with is interpreting the words we use in the same context in which we use them...
that he is considering all of the situational factors and related pieces of information that we are. Unless we are careful, however, this is often not the case.

LEVEL OF ABSTRACTION

We have seen an example of how it is possible for two people to interpret the same sign differently because they are not considering it within the same context. Context has been used rather broadly, from the surrounding words and non-verbal signs all the way to the social and political environment of the times. One function that this context performs is to tell us at which level of abstraction to interpret a sign, especially verbal signs.

In Language in Thought and Action, S. I. Hayakawa presented this idea in terms of what he called a "ladder of abstraction." He used this ladder approach to illustrate, for instance, how such a simple image as the family cow might be treated at different degrees of abstraction depending upon one's purpose. Let's use this ladder and apply it to the concept we have for CHILD.
LADDER OF ABSTRACTION

Step on the Ladder

1. The microscope and submicroscopic child known to medicine and science.

2. The child as we perceive it.

3. "Kim" or "Paco," the personal names given by parents to particular children for identification.

4. Child—a sign we use to stand for the characteristics of "childness" we have abstracted from Kim or Paco and all the other children we have known.

5. People (or Human Being)—a still higher level of abstraction, standing for the characteristics children have in common with other children and with adults . . . with people of all ages and types.

6. Home Asset—a sign to indicate what a child has in common with other valuable or useful objects in the home.

7. Asset—what home assets have in common with other valuable or useful objects outside the home. (e.g., rice land, machinery, farm labor, industrial labor, etc.)

8. Wealth—a higher degree of asset, that may include the value of a Kim or Paco, but a great deal more to the future of the family, the community, and the nation.

After you have studied each of these eight levels, write the type of person who would be most likely to talk about children at each of these levels in the space provided within each step. (Some people, of course, talk about children at more than one level even in the same conversation.)
A PHOTOGRAPHIC REPRESENTATION OF THE LADDER OF ABSTRACTION FOR "CHILDREN"

The following two pages present a display of photographs which show different levels of abstraction for the concept of CHILD or CHILDREN. Each row of photographs shows a child or group of children at a different step on the ladder of abstraction discussed on the previous page.

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<tr>
<th>Ladder</th>
<th>PAGE 76</th>
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<tbody>
<tr>
<td>Step 1:</td>
<td>(First Row) A picture of an unborn fetus. Human life as it might be discussed by medical doctors or scientists.</td>
</tr>
<tr>
<td>Step 2:</td>
<td>(Second Row) Three pictures of children as we might perceive them if we were visiting Korea, Peru, or Colombia, respectively.</td>
</tr>
<tr>
<td>Step 3:</td>
<td>(Third Row) Three babies as they are known and cared for by their own mothers (Peru, Colombia, Korea).</td>
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| Step 5:      | (First Row) Children in general, who have much in common with one another and with all children of the world. |
| Step 6:      | (Second Row) Children as an economic asset to their family and to their local, national, and international economy. A young boy operating a lathe in a Korean factory; a young boy in Colombia carrying his fish to market. |
| Step 7:      | (Third Row) Children as an abstract number, as a point on a curve, or a line on a graph of the population growth curve. A source of national wealth or economic burden? |
THE "POPULATION CRASH CURVE"
What is likely to happen when a community health worker attempts to explain the advantages of good nutrition for the health of children (at the microscopic level and for children in general) to a mother who is thinking of "Kim" and "Paco" (her own particular children). Some mothers may not even have a concept of a child at the microscopic level. To refer to her own children at home, she can use their names, "Paco" or "Kim." But when she refers to them outside of her home, she often has to add, "Paco and Kim, our children."

Differences of interpretation may also occur at a higher level. A government economic planner may be making a public statement about the tremendous national wealth that his country has for the future because of the quality and spiritual fortitude of the nation's children. A farmer listening to this same government official may be preoccupied with what to do with his four daughters whom he cannot afford to give any more education. In fact, he may not think of his children as an asset, but as a liability for the future.

Most communication takes place at various levels or combinations of levels on this ladder of abstraction. At times there are advantages to moving further up the ladder; sometimes we can communicate better by dropping down to a lower level. The important thing to ask yourself when you communicate is: Can the other participant conceptualize what I am talking about at the same level? And, when I switch to a different level, has the other participant moved with me? Many problems and misunderstandings can result by not understanding at which levels the other participants are dealing with the same subject. Naturally, this makes convergence toward more common meaning much more difficult.

**THE KINDS OF MEANING**

Meaning is a response to a message. As we have noted, a message consists of signs or symbols which are meaningless by themselves until someone interprets them and tries to understand what they mean. Psychologically speaking, they act as a stimulus to bring about a response in the receiver of the message. But what kind of response?

Let's share the following three letters from the English language (d-o-g):

```
D O G
```

What do these three letters mean to each of us? We each see a pattern in them and "read" them as a word that refers to a particular type of animal that we have had experience with in the past--direct experience, and indirect, through various forms of communication and pictures. This pattern elicits or stimulates a "picture" in each of our heads. But the meaning we have for our picture of DOG goes well beyond the object it stands for in the environment. Do we all have the same meaning? Let's find out.

---

**THE "POPULATION CRASH CURVE"**

![Graph showing the "population crash curve" with billions on the y-axis and years on the x-axis from 1970 to 2150.](image)
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Let's share the following three letters from the English language (d-o-g):

DOG

What do these three letters mean to each of us? We each see a pattern in them and "read" them as a word that refers to a particular type of animal that we have had experience with in the past—direct experience, and indirect, through various forms of communication and pictures. This pattern elicits or stimulates a "picture" in each of our heads. But the meaning we have for our picture of DOG goes well beyond the object it stands for in the environment. Do we all have the same meaning? Let's find out.
EXERCISE ON THE SIMILARITY OF MEANING

Answer the following set of questions about your meaning for the word DOG. Compare your responses with those of another participant, then place a check or "X" by those parts of your respective responses which are similar, or common, to his responses.

A. Briefly describe what you mean by DOG so that someone who has never seen one would be able to recognize one if he saw it.

B. Now fill in the following additional information about the DOG you just described:

1. size: length = _________
   height = _________
   width = _________

2. shape: approximately, __________________________
   __________________________

3. color: __________________________

4. What do dogs eat? __________________________

5. What do they do? __________________________

6. How good are they? __________________________

7. How strong are they? __________________________

8. How fast are they? __________________________

9. How safe (or dangerous) are they? __________________________

10. How much do they cost? __________________________

11. Do they have personal names like "John"? __________________________

12. Are they good to eat? __________________________

Approximately, how many of your twelve responses are similar to or overlap with the other participant: 0% . . . 25% . . . 50% . . . 75% . . . 100% (Circle One)

(0/12) (3/12) (6/12) (9/12) (12/12)
People are supposed to be afraid when they get caught in a dangerous situation like a riot. It is a useful reaction; it might even save our life some day. Other people are not especially surprised if we do get scared in some situations . . . but not all situations.

When we begin to worry about doing our job, for instance, in some cultures we are not supposed to show it. It may not be socially acceptable to admit that we are afraid of not being able to do part of our job well enough. In a situation like this, it is very difficult to tell someone else that we are worried, even though we actually begin to feel that way. We may avoid trying to label these feelings with a concept like "fear," or "afraid." If we continue to feel this way without properly classifying the signs, then it is quite possible that the job we do will be affected by our emotional state.

More importantly, if we do not label it (or apply a concept to it) and begin to think about the problem in terms of "being afraid," then it is difficult for us to remedy the situation. Since we cannot tell other people about it, we also lose any support and help they might be able to give to us. In fact, the people around us may have difficulty understanding why we are behaving as we are.

Sometimes we may not even be aware of these emotional signs ourselves, until someone else, a friend perhaps, points them out for us. Did you ever suggest to a friend that the reason he might be upset is because he hates the kind of work he is doing, and ought to change jobs? This is often the theme of movies or novels where a character is reluctant to admit (or label his feelings) that he is jealous of another character, or is "in love" with the heroine, until someone else points out all the signs.

We do not try to interpret all of the external signs that we are exposed to, or perceive. We do not try to interpret all of our feelings with concepts either. Nevertheless, they still affect our behavior, especially our communication with others. The way we feel about someone else, or the words he uses, has serious consequences for the way we interpret what he says to us.

This phenomenon has very important implications for family planning communication, where the subject matter is extremely sensitive for some people. Sex, relationship to one's spouse, one's own self-concept, and many related subjects are especially likely to arouse our emotions. These are not neutral subjects for discussion. They are the source of many of our greatest fears, as well as our greatest hopes. They are central to our well-being, and consequently may be related to a great many other matters that concern us. In most cultures, some of the emotions that are aroused by subjects related to family planning, sex, childbirth, abortion, vasectomy, childrearing, etc., are not openly identified, discussed in public (or private), nor adequately handled. The feelings may remain unidentified, even by the person who has them, and indirectly affect the way he thinks and acts towards family planning. Therefore, it may be necessary to bring these feelings out in the open. Recognition that other people have similar fears and hopes may increase one's

The image, or picture, that we each have in our heads of dogs is enriched with lots of other information from our past experience with dogs. Some of us may have a rather neutral emotional response when we read DOG, but other may have a very strong emotional response. We might feel revulsion or liking, and perhaps even fear. One who has been recently bitten by a dog and has gone through the difficult series of anti-rabies shots may have a very strong reaction indeed . . . much different from someone whose lifelong pet dog has just died.

The reason that the word DOG is so useful for this type of exercise is because of the great difference that often exists from one culture to another for its meaning. Meaning is the central core of what we mean by culture. This becomes most obvious when one culture comes into contact with another.

Throughout many islands of the Pacific, for example, dogs have traditionally been used to test certain kinds of poisonous fish because of the difficulty of distinguishing them from very similar, but non-poisonous fish. With the introduction of television recently, many of these islanders have been exposed to a different kind of dog: one with a name (Lassie) just like people. People actually talk to this kind of dog. They show it affection, and it even seems to talk back to them occasionally. Informal reports have noted that young children and some adults are beginning to give their dogs names and treat them more like pets.*

The comparison of your meaning for DOG with another participant's meaning should suggest that there are several kinds of meaning for signs. Some of our responses are like pictures of the object we have seen in the past. Other responses are more like feelings or emotions. And there seem to be not just one but many related concepts associated with our meaning for a given sign. Sometimes we go a step further and apply concepts to these internal pictures and feelings. Emotional feeling is an especially important type of meaning.

The Meaning of Emotional Responses

Think of all the internal signs that are associated with strong emotions like love, hate, or fear. When we are afraid our muscles tense, our skin may begin to perspire, and our stomachs may even begin to react. If it is an especially strong feeling of fear, it is not too difficult to read these signs and apply the appropriate concept: fear. If we are in an obviously fear-arousing situation like a riot, for instance, we also have some external signs to help us identify our emotional state.

*Other changes have been occurring at the same time, however, from the way the islanders make their living (away from fishing) to the kind of food they eat (more imported). How much effect television has had in relation to these other changes is certainly a good question for more research.
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confidence in himself and family planning. And finally, unless we can get these fears and hopes verbalized with the right concepts, then we cannot correct them when they are unnecessary or unfounded (fear that oral pills might cause disease, or permanent sterility, for instance).

**Denotative and Connotative Meaning**

It is obvious that meaning is much deeper, much richer than we usually recognize. First, there is a type of response like naming or describing the object or event to which a sign refers. This is usually called denotative meaning. That is, it identifies, points to, and separates out something. A chair is not a table is not a person is not a house. The sign for each of these points out, or distinguishes one from the other. This is what denotative meaning tells us.

But there is also the emotional side of meaning. The implicit, as contrasted to the explicit, aspects of meaning causes us to react to a sign with fear, confidence, dislike, etc., quite apart from the picture we see in our heads. This is what we call connotative meaning. Connotative meaning elicits the implied attributes of something. Since connotative meaning is much more difficult to understand and to anticipate when we communicate, we shall give it special attention.

**An Example of Connotative Meaning**

What are the important attributes of connotative meaning? And, more importantly, how can we discover the connotative meanings that people have for the words that we use when we communicate? In some situations it is possible to get people to label their internal feelings associated with words. Although we may not be able to label all of these feelings and associations, we can at least measure many of their important attributes.

**EXERCISE ON THE MEANING OF CHILDREN**

On each line below is a pair of words which you may use to help yourself describe how you feel about children. Notice that each line has a descriptive word on each end of a scale with seven blank steps. These two words are the opposite of one another, like good-bad, or strong-weak.

First, decide which word of the pair best describes how you feel about children (good or bad?). After you have chosen the word that fits best, then use the seven blanks in between the two words to show how strongly you feel the word applies to CHILDREN. The more strongly you feel that the word you have chosen describes how you feel about children, the nearer you should place a check mark to the word. If you do not feel very strongly, then place it closer to the center where the box is.
If you feel neutral, or cannot decide which word best describes how you feel about children, then place your check mark in the middle box. It is usually better to mark your response quickly, putting down your first, or most immediate response. Only place one check mark on each scale (line). Please respond to all of the scales and do not skip any.

For Example:

In general, CHILDREN are . . .

pleasant ___: ___: X: /\: ___: ___: ___: unpleasant

loud X: ___: ___: /\: ___: ___: ___: quiet

In these two examples we have marked the scales to indicate that we feel children are somewhat, or moderately, pleasant. The X is closer to "pleasant" than to "unpleasant," but not right next to it. On the second scale we have placed our X right next to "loud" to indicate that we feel children are very loud most of the time. You may have resonded differently. Someone who thinks children are usually unpleasant would have placed his X closer to "unpleasant."

Now go on to the next page and mark how you feel about CHILDREN.
In general, CHILDREN are...

- clean __:__:_ __:__:_: dirty
- useless __:__:_ __:__:_: useful
- boring __:__:_ __:__:_: entertaining
- good __:__:_ __:__:_: bad
- costly __:__:_ __:__:_: cheap
- warm __:__:_ __:__:_: cold
- passive __:__:_ __:__:_: active
- convenient __:__:_ __:__:_: inconvenient
- unimportant __:__:_ __:__:_: important
- strong __:__:_ __:__:_: weak
- sloppy __:__:_ __:__:_: orderly
- for me __:__:_ __:__:_: not for me

Obviously there are many other word pairs like these that we could apply to express how we feel about children. In fact, there may be some better words that you can think of. In the space below write your own pairs of opposite words using your own (or different) language this time:

______________ __:__:_ __:__:_: ________________
______________ __:__:_ __:__:_: ________________
______________ __:__:_ __:__:_: ________________
______________ __:__:_ __:__:_: ________________
______________ __:__:_ __:__:_: ________________
______________ __:__:_ __:__:_: ________________

Now going down the page, take a ruler and draw a straight line from one check mark to the next so that all of your marks are connected by one line. Then compare the pattern your line makes with that of another participant. In what ways do your meanings for CHILDREN differ? What new word pairs did you each add to the list?
The types of scales which are used in the above exercise were designed to facilitate our measurement of the various attributes of connotative meaning. You should have recognized that the process involved in using these scales is similar to the act of applying concepts to external signs in the environment to extract information. The major difference is that the person who uses the scales is attempting to describe his internal feelings about external objects, and the many past associations he has for these external objects. Can you think of other methods that might be used to elicit these internal associations?

For about the last ten years, Charles Osgood has done a major part of the research on connotative meaning. He has found that when you look at the connotative meaning that people in the American culture have for a very broad range of objects and events, three general types of connotative meaning emerge: evaluative (good-bad), power (strong-weak), and activity (active-passive).

A general evaluative factor (or type of connotative meaning), for example, can be identified because when a large number of people use these scales to describe many different kinds of words, similar scales of word-pairs tend to be applied the same way. In the exercise above, for instance, those of us who categorized CHILDREN as pleasant are also very likely to categorize them as good, useful, and clean. Similar attributes which generally tend to be applied the same way as good, comprise what is called the evaluative dimension of connotative meaning. The evaluative dimension is used as one of the general categories of connotative meaning, along with power and activity.

This measuring instrument has become very well known and applied throughout the world; it is called the Semantic Differential.* Perhaps the most important finding from research with this instrument is that across twenty other cultures of the world, with few exceptions, these same three general factors of connotative meaning seem to be used by people. Not that all people describe all signs the same way, or think of the same things as powerful or good, but they tend to respond to things along (or in terms of) these same three general dimensions of connotative meaning.

We have described Osgood's approach to give you a better idea of connotative meaning and to show you at least one way to measure and to interpret it. The most important thing to remember, however, is that it is not sufficient to ask whether an audience understands a word or picture denotatively. To communicate effectively, it is also necessary to be concerned about the connotative meaning that our audience has for what is in our messages: the feelings and evaluations that a sign elicits, or calls up, in its readers, listeners, or viewers.

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*"Semantic" refers to meaning; the Semantic Differential is an instrument which helps us "differentiate," tell the difference, between types of meaning.
Meaning as a Network of Associations

Our discussion of the variety of referents, the context of meaning, and the connotative components of meaning should make it obvious that meaning is not a singular, one-to-one response to a symbol, but rather a whole network of related associations and feelings from present and past experiences, and even from our anticipation of future experiences. Or, more simply, meaning is very complex and difficult to understand.

Everything we have said about meaning so far should have increased our understanding of the process of communication. In the first section, for example, we stated very simply that information is interpreted when someone selects and applies concepts to it from his past experience. The meaning of these concepts, however, is much more complex, going beyond the concepts themselves to some kind of "fringe" area of meaning. These "going beyond" and "fringe" notions about meaning should be much clearer by now. Clear enough, in fact, that Bruner, Goodnow, and Austin's (1956, p. 244) full definition of a concept should be much easier to understand:

We have found it more meaningful to regard a concept as a network of sign-significant inferences by which one goes beyond a set of observed criterial properties exhibited by an object or event in question, and thence to additional inferences about other unobserved properties of the object or event. We see an object that is red, shiny, and roundish and infer that it is an apple; we are then enabled to infer further that "if it is an apple, (then) it is also edible, juicy, and will rot if left unrefrigerated, etc." The working definition of a concept is the network of inferences that are or may be set into play by an act of categorization.
A SELF-TEST: DOES A FOOTPRINT MEAN MORE THAN A "FOOT"?

Our descriptions of concepts and meaning may seem very appropriate for something as rich as the word-symbols we used like child, dog, rebellion, liberty, and so forth, but they are just as appropriate for something as simple as a footprint in the sand.

To illustrate what we mean by this, let's review what we have learned so far by analyzing one of the most well-known footprints in literature. Notice how Daniel Defoe describes Robinson Crusoe's discovery of a footprint on the beach after surviving for eighteen years all alone on a deserted island:

IT HAPPENED one day, about noon, going towards my boat, I was exceedingly surprised with the print of a man's naked foot on the shore, which was very plain to be seen in the sand. I stood like one thunder-struck, or as if I had seen an apparition...; I could see no other impression but that one. I went to it again to see if there were any more, and to observe if it might not be my fancy; but there was no room for that, for there was exactly the very print of a foot—toes, heel, and every part of a foot.

All of the basic processes are described in this passage. The "print" of the foot was very "plain to be seen" in the sand. Nevertheless, he is uncertain enough to look at it again to be sure it was not just an "apparition," or just his "fancy." Looking more closely, he makes sure that the pattern has all of the necessary attributes of a foot: "toes, heel, and every part of a foot" in the right place and shape. No doubt about it, he has found a footprint.

He applies the right concept to interpret the print in the sand, but is that enough? Does he really understand what the footprint means? The remaining passages selected from this same scene suggest that the interpretation of the print is just the beginning of his understanding of what it means:

Notes:

How it came thither I knew not, nor could in the least imagine... perfectly confused and out of myself, I came home to my fortification... terrified to the last degree.

—
Sometimes I fancied it must be the devil, and reason joined in with me upon this supposition; for how should any other thing in human shape come into the place? Where was the vessel that brought them? What marks were there of any other footsteps? And how was it possible a man should come there?

Notes:

... but he would never have been so simple to leave a mark in a place where it was ten thousand to one whether I should ever see it or not, and in the sand too, which the first surge of the sea, upon a high wind, would have defaced entirely. All this seemed inconsistent with the thing itself, and with all the notions we usually entertain of the subtilty of the devil.

... I presently concluded then, ..., that it must be some of the savages of the mainland over against me, who had wandered out to sea in their canoes, ... loth, perhaps, to have stayed in this desolate island as I would have been to have had them.

... These thoughts took me up many hours, days, nay, I may say, weeks and months.

In the middle of these cogitations, apprehensions, and reflections, it came into my thought one day, that all this might be a mere chimera of my own; ... this foot might be the print of my own foot, when I came on shore from my boat. ... and that if, at last, this was only the print of my own foot, I had played the part of those fools who strive to make stories of spectres and apparitions, and then are frightened at them more than anybody.
Understanding as an Open-Ended Inquiry

Understanding what something means is an open-ended process: it can go on for as long as someone is willing to try to get more meaning from something. The basic categorization or conceptualization is usually done much more quickly, or not at all. Of course, we rarely run across footprints which are as important to us as Crusoe's. But most of us can remember things—perhaps something which someone told us once—which we are still trying to understand. Sometimes we can understand very quickly what someone else means when he communicates with us. Other times may require considerable thought before we are sure what someone "really" meant. And most of us can remember when we were mistaken; when we thought we understood what someone meant and learned later that we were wrong.

Understanding is a process of inquiry in which meaning is enriched or deepened. We seek to understand something in order to make it more meaningful. When we interpret a sign, a symbol, or a whole message, we apply our concepts to it (think about it) until we decide what it means at some basic, perhaps literal, level of meaning. But understanding continues to a much deeper level; it goes beyond the word-symbols and the concepts themselves.

Avoidance, Resistance, and Distortion of Meaning

What can a person do in a situation where he just cannot interpret our message? Suppose that we did not give him enough background, or context, to understand what we were talking about. Maybe we used a few unfamiliar words, or a different level of abstraction than he was used to. What are his alternatives? One response, of course, would be to just tell us what he does not understand. This would be the ideal response from our standpoint, because then we could try again, or find out which parts of our message are not clear.

In some situations, however, it is not easy for people to say they do not understand us. We all have a tendency to say we understand sometimes, even when we really do not. Why? Perhaps it would be too embarrassing; it might cause us to "lose face" in front of others. To admit that you do not understand implies that you may be to blame for the problem. As we have seen, however, the one who encodes the message also shares a large responsibility for communication. There are many things that a source can do to make his message more clear from the standpoint of the receiver.

This is another reason why it is better to refer to participants who share messages, rather than sources and receivers. It is too easy to blame "receivers" when both participants actually share the responsibility for communication. If a participant is made to feel that he is to blame for not understanding, then he faces a difficult situation. To admit it, might affect his own self-concept. No one likes to think, "maybe I'm just too dumb to understand what he is saying." A more acceptable alternative might be to avoid trying to interpret the message at all.

Robinson Crusoe

AFTER YOU HAVE READ EACH PASSAGE CAREFULLY, REREAD EACH ONE AND CIRCLE OR UNDERLINE ANYTHING WHICH YOU THINK CONTRIBUTED TO HIS MEANING FOR THE FOOTPRINT.

For example, in the first passage he relates how terrified he was when he returned to his fortification. Since terror is one of his emotional responses to the footprint, we would circle the word "terrified." How did it contribute to his meaning for the footprint?

THEN NOTE IN THE MARGIN NEXT TO EACH PASSAGE HOW YOU THINK IT CONTRIBUTED TO HIS MEANING.

Using the same example as above, we would write in the margin that "terrified" as an emotional response contributed to his connotative meaning for the print. Notice how his feelings of terror may have affected his later understanding of the footprint... his first reaction is to think that the devil must have made the footprint. Why wouldn't a man who had lived alone for eighteen years be happy at the possibility of finally having the opportunity to see another man?

WHEN YOU HAVE FINISHED YOU MAY WANT TO COMPARE YOUR NOTES WITH THE EXAMPLE IN THE APPENDIX.
Avoidance of meaning can take several forms. In some cases, the other participant may just withdraw from the situation without ever trying to decide what the other participant meant. In defense of this withdrawal, he may: (1) reconceptualize the source, (2) reconceptualize himself, or (3) reconceptualize the situation itself.

When a family planning fieldworker delivers a lecture about family planning to a group of villagers, for instance, a member of the audience who cannot understand what is being said may just label himself as "a person for whom family planning (whatever that is) is unimportant, or has no relevance." If the movie to come is entertaining, he might stay and watch anyway. He might also label the fieldworker as "just another one of those city guys trying to get something away from us again." And finally, he may just categorize the meeting as "another one of those situations where everyone gets together at night for a change, but where no one is expected to learn anything new." Perhaps he just labels the situation as "an obligation that a good villager has for government officials, but nothing important for me personally." Many alternatives are possible.

In some cases this avoidance may take the form of more active resistance, and even distortion of the messages that are shared. A young woman's concept of motherhood is based to a large extent upon her own mother, and her mother's relationship with her children. To ask her to have two children rather than six like her mother, for example, is also asking her to accept a new concept of motherhood. By the time she is 36-40 years old these two children may have little need of the type of "mothering" she knows how to give. What is she supposed to do then? Who will she be, if not a mother?

It may be easy for family planning officials to tell such a woman that she must take this opportunity to be a better mother, or a different kind of mother. "have two and raise them well . . . feed them better . . . educate them better." If such a woman begins to see that a great deal of change will be necessary, that she will be expected to be a different kind of mother, then there is a likelihood that she will feel threatened and even fearful that she may not be capable of these new expectations. After all, how can she raise them any better? How can she contribute to their education? What can she possibly do after they are gone? She only knows one way to be a mother. She may not be educated herself. She may not know of other activities for her future.

Such thoughts are liable to make her feel afraid that she would not be capable of the changes which are expected or unknown. If these feelings are strong enough, it is possible that she will actively resist trying to decode threatening messages about family planning. And if she does interpret them, she would be much more likely to distort their meaning: "mild side effects in the beginning, you say . . . we know all about the woman who died in the next village; why try to hide it from us?"
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The Practical Significance of Meaning

What this discussion of meaning means for our own programs and specific tasks is for each of us to decide for ourselves. It is quite likely, in fact, that the full implications of what meaning means will be discovered gradually, as we attempt to implement some of these ideas in our work. That is, the more experience we have with these ideas, the more meaning each of us will have for them. And this meaning will certainly not be the same for each of us. Let us start with a few suggestions, however.

If so many things can go wrong with the interpretation of meaning in a message, then a communicator—especially one who deals with a sensitive and difficult subject requiring much new learning—should know his audience very well. He should know what they already know about the subject, their past experiences, the terms they can understand, how well they can read, listen and view what is likely to interest them most, and what they believe so strongly that it might lead them to distort our meaning.

Since a professional communicator can never be absolutely certain about his audience concerning all of these factors, he should pretest his messages on a small sample of his intended audience to find out what kind of meanings they will have. Pretesting offers a good opportunity to listen to how people conceptualize their problems and your information. By engaging a few participants in a longer discussion we can discover better symbols, or more appropriate contexts in which to share "our" symbols. Pretesting is an experience which is shared by all participants, and as has been noted, previous common experiences enhance the likelihood that more meaning will be shared in the future.

In most interpersonal communication, the participants have the opportunity for immediate feedback that tells each one the meaning that the other is getting out of his messages. This makes it advantageous to utilize the situation where interpersonal communication is possible: with patients in a clinic, with women in their homes, with men at their place of work, where people gather in small groups like mothers' clubs, and so forth.

These are some of the practical things that a communicator can do to improve the likelihood of sharing more common meaning. You should not be satisfied with just these ideas, however. Discuss this problem with other participants in the module. Ask the people with whom you work what ideas they might have to remove the barriers to common meaning. As useful ideas occur to you during your work, write them down for future reference, especially if you try them with a certain message and discover that they work well.
AN EXERCISE ON THE OBSTACLES TO MEANING

This unit has dealt entirely with the subject of meaning. Looking just at what we have learned in this unit about meaning, what are the factors that are likely to interfere, or hinder, the amount of meaning that is shared between participants who communicate with one another? In the space below, list all of the factors (or principles of meaning) which you think would affect the amount of meaning that is shared:

NOW TURN THE PAGE.
FACTORS WHICH AFFECT THE AMOUNT OF MEANING THAT IS SHARED

Now compare your list with the list of factors suggested below:

1. Participants' situation before and after--

2. Unknown symbols, signs, or codes--

3. Confusing/contradictory non-verbal signs--

4. Different denotative use of same word--

5. Unusual connotative differences for the same word--

6. Use of unknown level of abstraction--

7. Undetected shift in level of abstraction--

8. Low importance for subject of discussion--

9. Uninterpreted feelings which interfere with decoding--
   (especially regarding one's self-concept or personal safety)

10. Avoidance, resistance, distortion of meaning--
11. Interpretation of the context of the communication--
   a. Not enough context known to apply one's concept to a symbol which is used.
   b. Context of surrounding words and whole messages--
   c. Characteristics of the source of the message--
   d. Relationship of the participants--
   e. Time and place (immediate environment)--
   f. Perceived social and political situation (distant environment)--

12. Past experience with the symbol(s) used--

After you have examined each of these factors, go back over the list and in the space provided briefly describe how each of these factors would affect the meaning that each participant would have for a given symbol that is used. If necessary, just use a new example of each to describe it.

Now compare your answers to those of another participant, and then to the answers suggested in the Appendix. There are many ways to describe how each factor affects meaning. The important thing is to make sure that you understand what each factor means.
PERSONAL CHECKLIST OF IDEAS TO INCREASE COMMON MEANING

The following space has been left in this unit so that you can begin recording your own list of suggestions for future reference. Go back over the list of factors, or obstacles, which affect the meaning of symbols, and develop a strategy to handle each factor. Then begin your list of ideas in the space below. After you have finished, you may want to compare your list with other participants, and then look at another list which has been started in the Appendix. And remember, communication is a very creative process; we never know for sure what might work until we try it.

1.

2.

3.

4.
SECTION THREE: TOWARDS A GENERAL CONVERGENCE MODEL OF THE COMMUNICATION PROCESS

Human Communication as a Social Process

Thus far we have considered the basic elements and steps in the processes of (1) information creation, (2) perception, (3) attention, (4) interpretation, and (5) understanding. Meaning, we have discovered, is very complex and seems to be both a part of our interpretation of the symbolic information which we share and the process of inquiry which takes us to a much deeper, richer level of understanding.

First we described meaning as something within the individual, or infrapersonal, but we soon found that the meaning for the symbols used in communication is also dependent upon what goes on between the individuals who share them. The process of understanding, then, is an intrapersonal process which depends greatly upon the interpersonal situation or context—what goes on between people. As we turn now to a discussion of mutual understanding between people, we will be looking at communication as a social process.

At this point it may be useful to say more clearly what we mean by the term "process." One of the uses which the dictionary lists for this symbol is simply, "something going on" (Webster's Collegiate Dictionary). We would elaborate upon this definition somewhat by defining process as a change or series of actions and events over time which lead toward a particular result. Thus each of the steps from information creation to understanding are processes within the more general process of human communication.

Let's begin our inquiry of communication as a social process by examining a conversation between a new mother in a maternity ward and her doctor.

"Good morning, Mrs. Rao," he says.

"Good morning, Doctor.

"How are you feeling today?"

"Quite well, I think."

"You can go home today, Mrs. Rao. Here is a page of instructions as to how to take care of yourself and the baby for the first few weeks. You can always call us, of course, if you have any trouble. And if it is serious just bring the baby back in."
Human Communication as a Social Process

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And then the doctor enters. "Good morning, Mrs. Rao," he says.

"Good morning, Doctor."

"How are you feeling today?"

"Quite well, I think."

"You can go home today, Mrs. Rao. Here is a page of instructions as to how to take care of yourself and the baby for the first few weeks. You can always call us, of course, if you have any trouble. And if it is serious just bring the baby back in."
"Thank you, Doctor." The young mother pauses a moment. "May I ask you a question," she says with a little embarrassment. "If we don't want any more children right away, what can we do to space them safely?"

"Let's talk about that a minute," says the doctor, sitting down and pulling out a note pad. And then... .

This is enough conversation for now. Let's analyze the process that occurred. Here is communication in action. How would you describe what is going on? What kind of model would represent this appropriately? A patient is talking to her physician, obtaining information about how to keep herself and her baby healthy. It is evident that none of this could have happened before man learned to write. But how are the mother's anxieties and the physician's stored knowledge being communicated to one another? Before proceeding, try to describe this process, first in your own words, then by applying the new concepts you have learned thus far.

USE THIS PAGE TO DESCRIBE THE PROCESS OF COMMUNICATION IN THE EXAMPLE OF THE PHYSICIAN AND HIS PATIENT. THEN TRY TO DRAW A DIAGRAM THAT CLEARLY REPRESENTS THE PROCESS AS YOU HAVE DESCRIBED IT:

Description:

A Simple Diagram Based On My Description:
with previous problems of our own, or in too much of a hurry to consider how previous experiences might affect our communication. Sometimes we over-generalize about the previous experiences of those with whom we communicate. Our doctor, for instance, might have stereotyped Mrs. Rao as "just like all the other rural patients I have," failing to recognize that some of Mrs. Rao's experiences are unique to her alone, making her different in some respects than the "others."

Regardless of what the situation might be, we have discovered a useful principle which applies to the process of communication: communication has neither beginning nor ending—something always occurs before and after, depending upon where we enter the process. Our model of the process should reflect this principle.

Basic Elements of the Process

Many of the other elements of the process are much more evident. There is a doctor and Mrs. Rao, the participants in the process. These are sometimes referred to as a "source" and a "receiver" depending upon which one you look at first, or perhaps depending upon who talks the most. There is the message that is shared by each of the participants during the process. But there is at least one more element, because we need to say how the message is communicated (or shared). We sometimes call this the channel of communication. The doctor and his patient are communicating mostly through the channel of the spoken word, but at one point the doctor gives her a sheet of instructions. So they also have available a channel of writing, or perhaps printing. *

What other channels might the doctor and patient have available to communicate? Film? Slides or cassettes? Video tape? How about the use of gestures? At a minimum, the elements of human communication are the participants (sources and receivers), a message, and a channel.

What else do we know about the messages of communication? We already know that there is a point in the process where the message is quite separate from both participants, the source and the receiver. This is more obvious in the case of the sheet of instructions the doctor gives the patient. Once written, it is no longer a part of him. But this is what happens in all communication, written, spoken, or otherwise. Once expressed, the message is separate from the participants involved.

*Confusion sometimes exists because channel and media are usually used interchangeably.

Analysis of a Conversation

The first thing we notice about this conversation is that it seems to begin and to end with the same words: AND THEN. Conversations like this one never occur in isolation, separated from events that occur before and after communication. In other words, what goes on before a given segment of communication, and what is expected to occur after this communication, can greatly affect what occurs during communication. What was the doctor doing before he entered Mrs. Rao's room? He might have been reviewing Mrs. Rao's medical record. Perhaps he was thinking about their last conversation, trying to remember exactly what he has, and has not, already told her. On the other hand, maybe he just left an emergency childbirth, or lost a patient, or had a fight with his head nurse about whether or not to send Mrs. Rao home yet. Perhaps he just left a staff conference where the national problem of population and family planning were discussed.

The same question can be asked about Mrs. Rao. Is she thinking about how rudely the doctor dispensed with her questions the last time they talked, or remembering how gently the doctor treated her child the last time? Maybe she just overheard the nurses in the hall discussing one of the newborn babies that needed special attention. Her baby? If you think about it, practically all of her previous experiences with doctors, hospitals, newborn babies, and even sex itself will have an effect upon what she expresses during her next conversation with the doctor, what she gives the most attention, and how she perceives and interprets what he says to her. What she expects will occur afterwards also has an effect upon their conversation. Does she expect trouble later with her baby? Is she worried about getting pregnant too soon again? In this case she actually mentioned her anxieties about getting pregnant. What was left unsaid? If she is not too worried about her own health when she goes home, how well do you think she listens to her doctor's advice? What informs the doctor that she probably will not read the instructions he just gave her?

Most of us have experienced a breakdown in communication because we failed to anticipate correctly what had occurred before, and what might occur after, we communicated with another person. This is no easy matter. Think of all the things that the doctor should consider before he attempts to communicate with Mrs. Rao. Fortunately, many of the doctor's patients have had similar experiences and similar expectations. This means that he does not have to start completely fresh with each patient he talks to. He can generalize some of his experience with other patients in the past to the one he must deal with now.

This may be why the doctor in our example brought out his note pad before beginning to talk about contraceptive methods. Previous experience with similar patients may have taught him that pictures as well as words are necessary to express these thoughts well. Many times, however, we are too preoccupied...
This is an important idea, because many people have thought of communication as a sort of pipe that carries ideas from one brain to another, or as an electrical wire carrying electricity from one point to another. There is no pipe in communication; no direct wire which connects our brains. Rather, a message is a completely separate, physical thing which is quite meaningless until someone reads meaning into it. Earlier we said that this occurs when someone perceives and interprets the message by applying his own concepts to it. In other words, the message is not an idea, not a concept, not an emotion. These things are in people, not in messages. A message is a set of signs or symbols that a person has created for a given channel in the hope that it will express or elicit a certain meaning for another person. As we have seen, many things affect the meaning that is finally elicited in the other participant in addition to the message itself. Meaning is not transferred or transmitted like messages (information), meaning is elicited or created within people by the information they share.

Encoding and Decoding

What is "going on" is also obvious: first one says something and then the other one says something. The usual word for expressing one's thoughts (imposing pattern) is "encode." Hence, a source encodes a message, using a code that he thinks will be familiar to a receiver. The receiver then decodes the message (perceives and interprets it). A code is simply a special kind of pattern, a pattern which has been standardized with a systematic set of rules which can be learned by more than one person. Pattern is imposed in a modern abstract painting by an artist, but it is unique to that particular creation. The pattern used in a painting of a landscape or portrait follows a standard set of rules to the extent that others can at least tell what the painting "refers to." Trees have trunks and only certain colors and shapes are permissible for their leaves. Painting of human faces are required to place the nose and eyes in certain limited positions, although considerable freedom of expression is possible before others can no longer "decode" them as human faces. This is what makes art such a creative process. This is what makes communication such a creative process.

The concept of encoding and decoding is useful, because all human communication uses a code, or codes. For example, language is a code. We sometimes find a tablet with an inscription from an ancient, lost language, and are unable to say what it means. We no longer know the rules for this particular code. To people in some cultures the color white means one thing, to other cultures it means another. Behavior encoded in one culture to express friendliness may be decoded as just the opposite by people from a different, less open culture where the rules are different. The pattern used in a code, its rules and referents, are quite arbitrary, and can be changed if necessary as

Regardless of what the situation might be, we have discovered a useful principle which applies to the process of communication: communication has neither beginning nor ending—something always occurs before and after, depending upon where we enter the process. Our model of the process should reflect this principle.

Basic Elements of the Process

Many of the other elements of the process are much more evident. There is a doctor and Mrs. Rao, the participants in the process. These are sometimes referred to as a "source" and a "receiver" depending upon which one you look at first, or perhaps depending upon who talks the most. There is the message that is shared by each of the participants during the process. But there is at least one more element, because we need to say how the message is communicated (or shared). We sometimes call this the channel of communication. The doctor and his patient are communicating mostly through the channel of the spoken word, but at one point the doctor gives her a sheet of instructions. So they also have available a channel of writing, or perhaps printing. *

What other channels might the doctor and patient have available to communicate? Film? Slides or cassettes? Video tape? How about the use of gestures? At a minimum, the elements of human communication are the participants (sources and receivers), a message, and a channel.

What else do we know about the messages of communication? We already know that there is a point in the process where the message is quite separate from both participants, the source and the receiver. This is more obvious in the case of the sheet of instructions the doctor gives the patient. Once written, it is no longer a part of him. But this is what happens in all communication, written, spoken, or otherwise. Once expressed, the message is separate from the participants involved.

*Confusion sometimes exists because channel and media are usually used interchangeably.
This is an important idea, because many people have thought of communication as a sort of pipe that carries ideas from one brain to another, or as an electrical wire carrying electricity from one point to another. There is no pipe in communication; no direct wire which connects our brains. Rather, a message is a completely separate, physical thing which is quite meaningless until someone reads meaning into it. Earlier we said that this occurs when someone perceives and interprets the message by applying his own concepts to it.

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One of the uses of convergence recorded in Webster's dictionary is "to approach a limit as the number of terms increases without limit." In communication, the participants may move toward a more common understanding for each other's meaning, but they are limited by the fundamental nature of the communication process from ever understanding exactly what each other means regardless of how many words are shared.

Just how well the participants need to understand one another usually depends upon the purpose of the communication, or the task at hand. If someone casually asks you what kind of day it is today, and you reply, "beautiful!", it is not always necessary to elaborate further (or achieve more mutual understanding). Little damage is done to the other person if he learns it's really cold and raining, but just happened to be the day that you are getting married. When NASA prepares to launch a multi-million-dollar spacecraft, however, they need to understand very well what their meteorologists mean as does the farmer who must decide when to harvest his crop. How much time and precision would you demand if you were suddenly asked to follow instructions for taking over the controls of an airplane in an emergency, or to help another person defuse a live bomb. The meaning you share for these instructions must reach a very close approximation indeed. How close must you get to persuade someone to play their family size, to instruct someone to take oral pills, or perhaps deliver a baby in their own home?

Notice how quickly the doctor and Mrs. Rao skipped past his statement, "And if it is serious, just bring the baby back in." Probably the most difficult problem of communication faced by doctors and hospitals today is the misuse of that word, "serious." When is one's condition serious enough to return to a physician? What are the signs to look for? Many people either: (1) categorize their condition as serious prematurely, hence visit a doctor when it is unnecessary, or else (2) categorize their conditions too late, and visit the doctor after their illness has become difficult to treat.

BRIEFLY LIST THE THREE SIGNS THAT YOU WOULD HAVE TOLD MRS. RAO TO LOOK FOR TO BE SURE THAT HER BABY'S PHYSICAL HEALTH IS SERIOUS (BAD) ENOUGH TO BRING IT BACK TO THE DOCTOR TO LOOK AT AGAIN:

1. 
2. 
3. 

Which ones do you think Mrs. Rao would have already known about? (Please check.) Now compare your three signs of a serious health problem with someone else who has done this. How many of your three signs overlap, or agree, with those he wrote down?

*Convergence toward mutual understanding of each other's meaning is similar to the concept of accuracy in coorientation theory, except that accuracy refers to the measure or degree of convergence at any point in time—the accuracy of each participant's estimate of the other's "cognitions" or thoughts about an object toward which they both coorient (see J. M. McLeod and S. H. Chaffee's "Interpersonal Approaches to Communication Research", American Behavioral Scientist, 16 (No. 4), 1973, pp. 469-499).

**We often say that a person has a great deal of empathy, or is empathetic, if he has a high capacity for participating in and sharing another person's feelings or thoughts.
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1.
2.
3.

Which ones do you think Mrs. Rao would have already known about? (Please check.) Now compare your three signs of a serious health problem with someone else who has done this. How many of your three signs overlap, or agree, with those he wrote down?*

*Did you list things like: high temperature, vomiting, diarrhea, loss of appetite, convulsions, etc.?"
How well did the doctor understand what Mrs. Rao meant by serious? How well did she understand what her doctor meant when he used this word? We do not know how much mutual understanding they had for each other's meaning. Neither participant took the time to discover how closely they converged, nor did they check to see if they agreed upon the meaning for "serious" in that situation... even though someone's life may have depended upon it. Rather, they shifted to a new topic, avoiding pregnancy, before they knew for sure that they understood what each meant by serious. They shifted to new topics before much convergence had occurred.

The term "feedback" is often used for the information that a source gets back from a receiver in order to judge the effect of his message, or the degree to which the receiver understands the source's meaning for the message which he is sharing. A receiver may look puzzled, for example, or a patient may return to the clinic in one month as instructed to get another cycle of oral pills. Sometimes the feedback is very delayed, as when the client returns several months later, but pregnant. And sometimes, one never receives any feedback, or he receives it too late, as when the bomb he is helping to defuse explodes in his face.

If a receiver does not do what we expect him to do, or if he reacts as if he does not understand what we mean, then we had better do something about it. Encode a similar, but different message. Say it more clearly, perhaps over a different channel, or maybe even more loudly. Feedback is one of the most important events in communication because it allows the participants to try again, or to change directions, in order to keep from diverging away from rather than converging toward more mutual understanding.

Diagrams of the Process

Twenty years ago the communication process was often diagrammed like the electric current from battery to light bulb. This was based on definitions like, "thoughts and ideas being transferred from mind to mind." Because we treat the message as separate from the meaning held by the participants, we no longer diagram it like this. Today, the communication process, at its simplest, is diagrammed as follows.
The next diagram of this process shows two participants who encode and decode messages in a pattern which switches back and forth from one to the other.

And then...

A encoding act 1
Message
decoding act
encoding act B
Message2
decoding act
A
encoding act
Message3
... and so forth...

Figure 8 A Switchback Model of Communication

In this diagram feedback is treated simply as another act of coding which creates another message. More importantly, notice that there is no arrow going directly from participant A to participant B. Rather, all of the arrows point toward the message. That is, each participant works on the message which is shared, one decoding and the other encoding. Neither participant is passive; both are active. This diagram suggests that we think of the communication process as one of sharing messages, rather than transmitting them. Transmission implies that the meaning of a message is sent and arrives intact, just as it left the source. Sharing, however, implies that each participant contributes his own meaning to the message, and that each participant's meaning may be more or less similar depending upon many elements in the process besides the message. The switchback diagram puts meaning in the participants rather than in the messages they share.

*Switchback means "to zigzag in ascending or descending curves."

Both the message and the feedback are information, but since the information which is created by the source is referred to as a message, and that of the receiver as feedback, the diagram gives the impression that the communication is basically one-way, from source to receiver. The diagram obscures the idea that the receiver may use the source's message as feedback about an earlier message of his own. It also implies that receivers mainly supply "feedback" to their sources, rather than directly sending them "messages" of their own. And finally, it implies that the process begins with the source rather than the receiver. What occurred beforehand? What will occur after the source receives his feedback? The feedback model has most of the elements which we have discussed, but to use it to represent a conversation over time we have to re-label receivers as sources and vice-versa, in order to describe what is going on.

It would be more fruitful to diagram two people (or more) who create messages. Any message may be used to get feedback about one person's earlier messages to the other person. Each person is capable of initiating a new message for the other person, or of shifting the topic of their messages to a new subject. In our example, the patient, Mrs. Rao, began the conversation by saying, "good morning." Then the doctor initiated the first topic of their conversation by asking about her health and telling her that she could go home. Mrs. Rao responded to his message (feedback), but then she shifted the topic of conversation to something which was upsetting her--how to avoid getting pregnant again right away.

This is a very important point: if Mrs. Rao had not been allowed to become a source as well as a receiver, then the doctor might have missed the opportunity to talk about contraception at a time when she was most uncertain about it...when contraception was most important to her. For this reason alone, it is useful to think of communication as process in which both participants encode and decode messages which they each want to share.
The next diagram of this process shows two participants who encode and decode messages in a pattern which switches back and forth from one to the other.

And then . . .

A → encoding act → Message 1 → decoding act → B

decoding act → Message 2 → encoding act

A ← decoding act ← Message 3 ← encoding act

... and so forth . . .

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*Switchback means "to zigzag in ascending or descending curves."
Notice that this second diagram of the communication process goes beyond the source's reception of information about the effect of his message (feedback) on the receiver. Rather than stopping after feedback, the process switches back to the first participant to encode a new message. In other words, the cycle repeats itself. Communication is diagrammed as a series of two acts—encoding and decoding—which continues over time, switching back and forth from one participant to the other.

And finally, the second diagram shows that the participants are moving, progressing somewhere, rather than stationary. The source does not just move "at" the receiver, the diagram shows that both participants in the relationship are moving together in the same direction. The only remaining question is: Where does the process of communication take the participants?

At the very beginning of this section we said that a process is a series of actions or events over time which leads to a particular result. A diagram of the communication process should, if possible, indicate what this end result might be. We already discussed one of the end results of the communication process. We said that participants use communication to converge toward a more mutual understanding of each other's meaning. If the doctor and Mrs. Rao, for instance, had continued to discuss what each meant by the word "serious," then they might have converged toward a more mutual understanding of one another, with greater assurance (certainty) that she would bring her baby back to the doctor if she perceived what the doctor considers a sign of danger. Unfortunately, they shifted the topic before they knew how much convergence had developed.*

To diagram a series of encoding and decoding events by two participants which converges toward a common point requires a circular model rather than a linear one, or even one which descends through switchback curves. If we re-diagram the switchback model to show this circular motion, it resembles a series of concentric circles converging toward more mutual understanding at their center. It is a center, or end result, however, which is never quite reached, since mutual understanding—like understanding—is an open-ended process of inquiry by two or more people which can always continue to deeper levels of mutual understanding.

*Of course, we were only able to look at one brief conversation between Mrs. Rao and her doctor. We do not know what may have occurred earlier. Perhaps they had discussed this before, and Mrs. Rao already understood what the doctor meant by "serious," and vice-versa.
By using converging circles to represent the process rather than straight lines or zigzag curves, we lose the geometric shape of the two interpersonal "triangles of reference" presented in the last section on the meaning of meaning. The basic concept of the triangles of reference still applies. For "symbol" we have substituted the term "information," which is defined much more broadly. The convergence model also omits the "referent" about which the participants have "thoughts" in response to the same "symbol." We have used the overlapping circles of meaning to represent this basic concept that a variety of referents and meanings are possible for information which is shared. We used these circles earlier to illustrate the idea of "unique" and "common" areas of meaning.

In the section on meaning we were only describing how one person arrives at the meaning which another person is trying to communicate. When we describe two people who are trying to converge toward more mutual understanding we need to double the number of overlapping circles. The process is much more complex.

1. The circles of meaning for Participant A:

   A's Understanding of what B means

   WHERE the circle for A represents A's estimate of B's meaning for the information, and where the circle for B represents B's actual meaning for the same information. The shaded area, or overlap, represents the accuracy of A's estimate.

2. The circles of meaning for Participant B:

   B's Understanding of what A means

   WHERE the circle for B represents B's estimate of A's meaning for the information, and where the circle for A represents A's actual meaning for the same information. The shaded area, or overlap, represents the accuracy of A's estimate.

Figure 9 A Convergence Model of Human Communication

The process begins with "and then . . ." to remind us that something has occurred before we begin to look at what is going on. Participant A takes this into account before he shares information (I_1) with Participant B. B interprets the information which A has created to express his thoughts, and then B responds by creating information (I_2) to share with A. A interprets this new information (I_2), and then expresses himself again with more information (I_3) about the same topic. B interprets this information and then they continue this process (I_4 . . . n) until they are satisfied that they have reached a mutual understanding of each other's meaning for the topic being discussed. Then they might shift to a new topic of communication, or return to a previous one.
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(2) The circles of meaning for Participant B:

\[
\text{B's Understanding of what A means}
\]

... WHERE the circle for B represents B's estimate of A's meaning for the information, and where the circle for A represents A's actual meaning for the same information. The shaded area, or overlap, represents the accuracy of A's estimate.
The degree or level of mutual understanding would be the combination of each participant's estimate of the other's meaning which overlaps with the other's actual meaning. In other words, mutual understanding is a combination of the accuracy of each participant's estimate of the other's actual meaning. Rather than showing both of these sets of overlapping circles separately in our model of convergence, we have simply superimposed, or placed one on top of the other, and then re-labeled the central shaded area as Mutual Understanding. The shaded area in the model represents a combination of the accuracy of both participants. The un-shaded, white area would represent the inaccuracy, or incorrect, part of their estimates of each other's meanings. Although only two overlapping circles appear in the diagram, we should remember that mutual understanding is a combination of two estimates, or two sets of overlapping circles.

The following diagram illustrates mutual understanding as the combination of A's and B's understanding of what each other means: the combined accuracy of each participant's estimate of the other's actual meaning:

(3) The combined circles of meaning for Participants A and B:

THE END RESULT OR PURPOSE OF THE CONVERGENCE MODEL OF THE COMMUNICATION PROCESS
The more people who participate in the same communication, the more the complexity of the process is multiplied. Since each pair of participants requires two sets of overlapping circles (or two estimates of meaning) to represent mutual understanding, three people discussing the same topic would require six sets of circles. Mutual understanding among four people would require twelve sets of circles, or twelve separate estimates of meaning. Five people would require twenty estimates, and so forth.* When the number of participants becomes too large, then mutual understanding among everyone is usually not attempted, even though agreement may be achieved. We will have more to say about agreement below.

The convergence model of communication is similar to the two-act, switchback model except for: (a) the change of direction—from linear to circular—taken by the participants in the relationship, and (b) the addition of mutual understanding as the end result of the process, or the purpose for sharing information. The nature of the circles also implies that no matter how much the participants share information with each other (continue expressing themselves), they can only get close, but never exactly understand each other's meanings. To understand someone else's meaning perfectly would probably require identical life experiences, which is impossible. And it would ignore the idea that understanding is always open to deeper, richer levels of understanding.

Mutual understanding is treated here as the ideal direction, or the ideal end result of the communication process. We will discuss some of the other results of communication later. Although the diagram does not show it, notice that rather than converge, the lines could diverge outward, or away from better understanding for each other's meaning to worse understanding. In other words, the participants might say something which would lead them to misunderstand what they each mean. One of them might use symbols in ways which are unfamiliar, or out of the other person's prior experience. The next diagram shows an artist's interpretation of the shift from topic to topic during a conversation, along with one case of divergence rather than convergence.

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*The general formula to compute this is two times the possible number of combinations of people, $2 \times \frac{n(n-1)}{2}$, or simply $n(n-1)$, where $n$ equals the number of people participating in the same communication. It should be apparent how rapidly the complexity of the process increases with each additional person, if everyone attempts to reach a mutual understanding with everyone else who shares the same information.
The Choice of Models

Having three alternative models of the communication process available for our use, we might ask which one should be used. Since we can no longer engage Aristotle or Confucius in a discussion in order to get closer to what they meant, how useful is the convergence model of communication? We cannot "switchback" to let them speak again, nor give them feedback, but we can share information with someone else—a friend or perhaps an expert on Confucius. We can also reread what they once wrote. We can develop some understanding of their work, but as the centuries pass we always face the possibility of seriously distorting what they once meant... or of developing a much deeper understanding of their subjects than the original authors. Nevertheless, they cannot return to share or to clarify our meaning.

Communication through mass media like radio and television reaches many people simultaneously, but the original source of the message is often vague and unspecified, and whatever feedback that is created is usually delayed. Sometimes only partial feedback is obtained from mass media efforts, often with considerable distortion and little opportunity to "switchback," or encode another message for the receiver to see how distorted the feedback is. On the other hand, the receiver of mass media messages rarely exists in isolation. If he is not listening or watching with other receivers, then he certainly has the opportunity to discuss what he has learned from mass media with his friends and acquaintances. He cannot "go around" with the original source, but he may have the opportunity to converge toward better understanding with other listeners.

The switchback model, or the convergence model, would be more applicable to the listeners, but the feedback model is better for describing the mass media source and his audience.

As we explained in the introduction to the module, models are meant to abstract the general principles involved in a process. They do not include everything, nor do they fit every specific situation equally well. The main task for those who use such models to improve their communication is to decide which model fits, or is most useful, for each specific situation or problem. In other words, using whatever information you have available about the situation, you must apply the model which you expect will be most effective to solve your problem.

Beyond Mutual Understanding

The fundamental purpose of human communication is to strive for greater mutual understanding. Once some minimal level of understanding is reached, we can begin to consider other objectives, or end results, of communication. It may seem unusual to some readers that up to this point we have not mentioned whether or not the participants believe each other, or agree with each other's interpretations.

Not shown is the case where the participants seem to "get stuck" at a certain level of mutual understanding without moving any closer or farther away. This could be drawn as circle with a fixed radius. It would be analogous to the familiar expression of "going around and around in circles with someone without getting anywhere." In other words, neither participant would get any closer to the other's meaning. The next unit of the module will consider some of the ways which communication may be used to help people change and restructure their meaning... and to develop new understanding in a rapidly changing environment.
or "points of view." Believing and agreeing are important, but they become important results of communication only after some minimal level of understanding is attained. It is inappropriate to ask someone if he believes you if he does not yet understand what you are talking about. And, if someone does not believe what you are saying, it makes little sense to ask if he agrees with you. Although it seems illogical to ask about credibility and agreement before mutual understanding, we often do just that. And we are not completely inconsistent when we ask if we believe and agree with each other before we completely understand each other. This is because—as we have been saying all along—understanding is not something a person either "has" or "does not have." Understanding is something which develops over time through a process of convergence. Credibility and agreement are often assessed at the same time one is trying to reach a better understanding with someone. In fact, it is not unusual for someone to decide before he begins communicating with someone whether or not he is going to believe and agree with what the person will say. One of the main obstacles to getting people to agree may be that they do not trust us enough to believe us, or do not listen well enough to understand our point of view.

Believing is accepting the information someone shares with us as valid, and it is also accenting the person who shares the information as sincere. Thus, there are two kinds of credibility: the credibility of the message (or the information) and the credibility of the source of the message. Both are important for the process of communication; and the distinction between the two is necessary.

A few examples should make this difference more clear. If one of our national leaders tells us that inflation is not a result of our own country's spending and production, but is really due to international forces beyond our control, we might believe what he says and still doubt his own sincerity. Or, conversely, we might not believe that inflation is really due to international forces, but we might still believe the national leader who said so. Similarly, a patient at a family planning clinic might believe that the doctor is trying to tell her the truth (sincere), but she still might not believe that the side effects from wearing a loop (I. U. D.) would be minor.

Credibility is very important when our purpose is to change someone's basic beliefs (if A, then B) about the world in which he lives. The validity of a belief is usually dependent upon the quality and the quantity of information which we have about it, that is upon how certain we are about it. It is also dependent upon how consistent it is with all of the other related beliefs which we have about it. As we explained in the introduction to the module, models are meant to abstract the general principles involved in a process. They do not include everything, nor do they fit every specific situation equally well. The main task for those who use such models to improve their communication is to decide which model fits, or is most useful, for each specific situation or problem. In other words, using whatever information you have available about the situation, you must apply the model which you expect will be most effective to solve your problem.

Beyond Mutual Understanding

The fundamental purpose of human communication is to strive for greater mutual understanding. Once some minimal level of understanding is reached, we can begin to consider other objectives, or end results, of communication. It may seem unusual to some readers that up to this point we have not mentioned whether or not the participants believe each other, or agree with each other's interpretations.
or "points of view." Believing and agreeing are important, but they become important results of communication only after some minimal level of understanding is attained. It is inappropriate to ask someone if he believes you if he does not yet understand what you are talking about. And, if someone does not believe what you are saying, it makes little sense to ask if he agrees with you.

Although it seems illogical to ask about credibility and agreement before mutual understanding, we often do just that. And we are not completely inconsistent when we ask if we believe and agree with each other before we completely understand each other. This is because—as we have been saying all along—understanding is not something a person either "has" or "does not have." Understanding is something which develops over time through a process of convergence.

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Credibility is very important when our purpose is to change someone's basic beliefs (if A, then B) about the world in which he lives. The validity of a belief is usually dependent upon the quality and the quantity of information which we have about it, that is upon how certain we are about it. It is also dependent upon how consistent it is with all of the other related beliefs which we have about it.
Robinson Crusoe, for example, used both of these criteria before he would accept what he knew about the footprint. First he searched for as much information as he could get about the footprint itself, then he began testing this information against everything else he believed was related to it: his beliefs about the devil, about the action of the wind and waves, his memory of where he had walked earlier, and so forth. Each time he tested what he believed the footprint meant to see if it was consistent with all of these other beliefs.

Scientists also use certainty and consistency to decide whether a new belief (a causal relationship, for example) is valid or not. The experiments and other kinds of research which they do are mainly conducted in order to get more information so that they can be more certain about their "if-then" beliefs. Even when they are certain, they still test their relationships to see if they are consistent with the currently accepted system of scientific knowledge. Each new belief has to fit into its related network of beliefs before it is completely accepted as valid... before it is believed to be "true."

We should not expect that only scientists require certainty and consistency in order to believe something is valid. Almost anyone who engages in communication will attempt to gather as much information as he can before he is certain enough to believe something is true. Then they will accept it if it fits into their related network or system of beliefs which they already "know" are true.

Some people demand more certainty than others, of course; and some people demand more consistency. This brings us again to one of our earliest conclusions about communication: to make communication more effective, find out how much information the audience already has, and find out the related network of beliefs which they already accept as "true." It is normal practice for people—including scientists—to ignore new information which appears inconsistent with the accepted system of "true" beliefs in the hope that it will eventually prove to be false or irrelevant for their purposes.

In this sense, traditions or traditional beliefs are merely accepted beliefs which have been handed down from the past. They often deal with the relationships of important values to other outcomes and aspects of life. Even though traditional beliefs are transmitted from the distant past, they can only be our present interpretations of the past which are understood within the context of our own immediate problems and situation. For this reason, they are always subject to misinterpretation, or re-interpretation, or change by people living today.

Traditional beliefs are often advocated by the respected opinion leaders of a society. In a rural setting, for example, the respected elders of the village may take the responsibility for reminding others of their traditional beliefs and values. Their advice may be followed because of the respect for their age and
their honored position within the village society. And it may be followed because their advice has proven competent, safe, and useful in the past.

There are generally three criteria used to evaluate the credibility of a source of a message: (1) how competent he is about the subject, (2) how much he can be trusted to tell the truth, and (3) sometimes how dynamic he is, how much enthusiasm and sincerity he exhibits when he shares the information with us. A traditional opinion leader may have all of these characteristics in addition to his respect and position in society. If not, there is always the potential for other opinion leaders who are perhaps more competent about a given subject, or more dynamic and trustworthy, to replace some of the old beliefs with new ones. We will have more to say about source credibility in the following unit on communication and change.

Agreeing

Agreement occurs when two people (or more) have similar interpretations and similar understanding, or in other words, similar meaning for the messages which they share. For two people to know, or to be certain that they have similar meaning, they first have to understand what each other means at some level of mutual understanding. Agreement also implies that two people have similar beliefs, or believe the same things are valid.

Figure 11  A Diagram of Agreement as the Actual Similarity, or Overlap, In What A Means and What B Means

One brief example will illustrate how agreeing is related to the other two social processes of communication. Suppose two people arrive at some mutual understanding that there is indeed a world food shortage accompanied by starvation in some parts of the world. In other words, each person understands what the other person means by the terms "food shortage" and "starvation." If you think arriving at a mutual understanding for these two terms is easy, try to achieve it with someone who does not believe that there is a world food shortage. Not everyone believes there is. One reason they may not believe it exists is because they have a different meaning for what a food shortage is. But there are other reasons, of course. They may not have enough reliable information
to be certain there is a shortage and not just poor distribution of existing food supplies. Or, the idea that there is a shortage of food may simply be too inconsistent with the total possible supply of food which they believe the world is capable of producing.

Let's assume for now that they each understand what the other means by food shortage and starvation. One of them may believe that the food shortage is caused by a lack of fertilizer or technological development throughout the world. The other one may understand what he means by this, and he may believe that the other person is sincere about it. He may also believe that fertilizer shortages and technological development are related to the problem, but he may not agree that they are the primary cause of the food shortage. He might believe that overpopulation or some other reason is the most important cause of the world food shortage. When they consider all their networks of related concepts and beliefs, they may discover that they do not have very similar meaning—or agreement—about the world food shortage and its relationship to starvation. Communication offers no guarantee that agreement will result. In fact, communication may only reveal where the disagreement is, or allow people to discover that they disagree. This is always one of the potential outcomes of better mutual understanding.
A BRIEF NOTE ABOUT KNOWLEDGE AND ATTITUDES

We will end our discussion of the basic principles of human communication with a brief explanation of why knowledge and attitudes seem to be completely omitted from our discussion of the communication process. It may seem strange that we have not used these words more often. Actually, we have been discussing "knowing" and "attitude" at almost every stage of the process without mentioning them by name. We have left them out until now because of the wide variety of meaning, confusion, and misunderstanding that often results by using them.

Knowledge is often treated as one of the most important end results, or goals, of human communication. But what does knowledge mean? According to the dictionary, knowing may mean any of the events and activities which we have discussed thus far. So we have not really omitted it. The following list of referents should make this obvious (from Webster's College Dictionaries):

- **Knowing**
  - to perceive directly
  - to have experience of
  - to be acquainted or familiar with
  - to recognize as being the same as (something previously known)
  - to have understanding of
  - to be convinced or certain of
  - to be aware of the truth of

Knowledge...
- the body of truth, information, and principles acquired by mankind
- the sum of what is known

The truths, information, and principles which are not disregarded by mankind are commonly the ones which are accepted by mankind as being true or otherwise worthy of keeping. Thus, knowledge always requires a certain amount of agreement among men before it is accepted as true. In other words, there is a social aspect to knowing and to knowledge. Communication is one of the most important ways that knowledge is created and acquired by mankind.

We have also omitted any mention of the term "attitude," even though it is frequently treated as one of the important outcomes of communication. "Attitude" has been used to mean many different things depending upon the purpose of those who used it. In general, an attitude is a tendency to respond to an object, idea, or situation with a predisposed reaction. One's attitude is the way he is inclined to respond to something, like the idea or practice of family planning, for example. As we have seen, however, a person may respond to something in many different ways. It is generally

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A SUMMARY OF THE CRITICAL EVENTS IN THE COMMUNICATION PROCESS

Since the beginning of this module we have taken a journey through the important events or activities involved in the process of human communication. Some of these actions occurred "out there" in the physical world, while others occurred in the psychological world of the individual, or in the social reality that exists between two or more people. We have summarized all of these important events into one list for easy review:

<table>
<thead>
<tr>
<th>PHYSICAL REALITY</th>
<th>1. Expressing</th>
<th>--creating information by imposing pattern upon some medium capable of being modified into two or more states.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Perceiving</td>
<td>--becoming aware through one's senses of the many kinds of information which are potentially available for interpretation.</td>
</tr>
<tr>
<td></td>
<td>3. Attending</td>
<td>--focusing one's concentration upon the information which has been selected for interpretation.</td>
</tr>
<tr>
<td>PSYCHOLOGICAL REALITY</td>
<td>4. Interpreting</td>
<td>--applying one's concepts from past experience in order to decide what the information may mean.</td>
</tr>
<tr>
<td></td>
<td>5. Understanding</td>
<td>--inquiring or searching for deeper, richer meaning by examining the context and the implications of the information in light of the intentions and purposes of those who created and/or share the information.</td>
</tr>
<tr>
<td>SOCIAL REALITY</td>
<td>6. Mutual Understanding</td>
<td>--understanding what each other means by the information which is shared.</td>
</tr>
<tr>
<td></td>
<td>7. Believing</td>
<td>--accepting the information which is shared as valid, and accepting the person who shares the information as sincere.</td>
</tr>
<tr>
<td></td>
<td>8. Agreeing</td>
<td>--reaching a similar interpretation and understanding with another participant(s) who shares the same information</td>
</tr>
</tbody>
</table>
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**Knowing . . . . to perceive directly**
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- to be acquainted or familiar with
- to recognize as being the same as (something previously known)
- to have understanding of
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- to be aware of the truth of

**Knowledge . . . . the body of truth, information, and principles acquired by mankind**
- the sum of what is known

The truths, information, and principles which are not disregarded by mankind are commonly the ones which are accepted by "mankind" as being true or otherwise worthy of keeping. Thus, knowledge always requires a certain amount of agreement among men before it is accepted as true. In other words, there is a social aspect to knowing and to knowledge. Communication is one of the most important ways that knowledge is created and acquired by mankind.

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One's attitude is the way he is inclined to respond to something, like the idea or practice of family planning, for example. As we have seen, however, a person may respond to something in many different ways. It is generally
accepted (agreed) that an attitude has at least three components, or kinds of response: a cognitive response, an affective response, and a behavioral response. If we translate these things into the words that we have been using in this module, we can see that an attitude towards something consists of how a person thinks about it, how he feels about it, and how he acts towards it.

Attitudes, like knowledge, are important throughout the whole process of communication. The most important part of the meaning of "attitude" is the concept of predisposition, inclination, or readiness to respond, rather than the many different ways that people can respond. We have repeated many times throughout the module that effective communication depends upon knowing as much as possible in advance how our audience already (is ready, or is inclined) thinks, feels, and acts towards the topic and the information we wish to share with them about that topic.

A FINAL CONVERSATION

We ended our section on the meaning of meaning by analyzing an excerpt from Defoe's Robinson Crusoe. Crusoe's mental monologue with himself demonstrated how meaning is deepened and enriched through a process of inquiry. In this example, a more thorough understanding was reached by one man alone. In fact, he had been in complete isolation from other human beings for eighteen years when he came across the footprint in the sand. We may wonder how his struggle for greater understanding might have been influenced or enhanced if he had been able to talk about the footprint with another human being. His fear and personal torment surely would have been reduced, and he might have understood the footprint much faster than he did by himself. On the other hand, with another person to talk about it, he would have to be prepared for the possibility of misunderstanding, disagreement, and conflict over what the footprint meant.

Let's end our discussion of the process of communication the same way that we began, by analyzing a conversation between two people. A conversational, or dialogue, form of communication dramatizes for us the idea that understanding and knowledge about the world in which we live is very much a social undertaking.

A problem does not have to isolate an individual and leave him to his own resources. By talking about a problem with another person its meaning and implications can be exposed more readily by taking into account another point of view, or understanding besides one's own. In other words, a person's own point of view about a problem becomes clearer as it comes into contact with, or conflict with, the points of view expressed by others who participate in dialogue. When we put a dialogue in its written form we are able to broaden the scope of the inquiry by inviting the reader to introduce his own point of view into the conversation which takes place.
A dialogue, of course, is the oldest and most fundamental form of human communication. It has been used in its written form for many centuries as a method for helping others to understand. The dialogue we have selected for analysis is an example of the process by which mutual understanding may be reached between two people. The dialogue itself is about knowledge. The result, then, is a metologue about knowledge.

A metologue is a conversation about some problem which is written in such a way that the participants not only discuss the problem, but the structure, or pattern, of their conversation as a whole is also relevant to the same subject. In this case, a father and his young daughter discuss one of the most fundamental problems of man: what is knowledge?

As you read their dialogue, you will notice that the form of their whole conversation is itself an example of how mutual understanding, and therefore knowledge, is achieved through the process of communication. Naturally, at times it may appear as if participants really do not know how to explain what is in their minds, as if "... ... Whatever statement we put forward always somehow moves round in a circle, and will not stay where we put it."*

**Metologue: How Much Do You Know?**

Daughter: Daddy, how much do you know?

Father: Me? Hmm—I have about a pound of knowledge.

D: Don't be silly. Is it a pound sterling or a pound weight? I mean really how much do you know?

F: Well, my brain weighs about two pounds and I suppose I use about a quarter of it—or use it at about a quarter efficiency. So let's say half a pound.

D: But do you know more than Johnny's daddy? Do you know more than I do?

F: Hmm—I once knew a little boy in England who asked his father, "Do fathers always know more than sons?" and the father said, "Yes." The

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D: I wanted to find out if I could think two thoughts at the same time. So I thought "It's summer" and I thought "It's winter." And then I tried to think the two thoughts together.

F: Yes?

D: But I found I wasn't having two thoughts. I was only having one thought about having

F: Sure, that's just it. You can't mix thoughts, you can only combine them. And in the end, that means you can't count them. Because counting is really only adding things together. And you mostly can't do that,

D: Then really do we only have one big thought which has Lots of branches—lots and lots of branches?

F: Yes—-that makes a difference. I mean, it means that knowledge is all sort of knitted together, or woven, like cloth, and each piece of knowledge is only meaningful or useful because of the other pieces—and . . .

D: Do you think we ought to measure it by the yard?

F: No, I don't.

D: But that's how we buy cloth.

F: Yes, But I didn't mean that it is cloth. Only it's like it—and certainly would not be flat like cloth—but in three dimensions—perhaps four dimensions.

D: What do you mean, Daddy?

F: I really don't know, my dear. I was just trying to think. I don't think we are doing very well this morning. Suppose we start out on another tack. What we have to think about is how the pieces of knowledge are woven together. How they help each other.

D: How do they?

F: Well—-it's as if sometimes two facts get added together and all you have have is just two facts. But sometimes instead of just adding they multiply—and you get four facts.

D: You cannot multiply one by one and get four. You know you can't.

F: Oh.

D: I did an experiment once.

F: Yes?
D: I wanted to find out if I could think two thoughts at the same time. So I thought "It's summer" and I thought "It's winter." And then I tried to think the two thoughts together.

F: Yes?

D: But I found I wasn't having two thoughts. I was only having one thought about having two thoughts.

F: Sure, that's just it. You can't mix thoughts, you can only combine them. And in the end, that means you can't count them. Because counting is really only adding things together. And you mostly can't do that.

D: Then really do we only have one big thought which has lots of branches--lots and lots of branches?

F: Yes. I think so. I don't know. Anyhow I think that is a clearer way of saying it. I mean it's clearer than talking about bits of knowledge and trying to count them.

D: Daddy, why don't you use the other three-quarters of your brain?

F: Oh, yes—that—you see the trouble is that I had school teachers, too. And they filled up about a quarter of my brain with fog. And then I read newspapers and listened to what other people said, and that filled up another quarter with fog.

D: And the other quarter, Daddy?

F: Oh—that's fog that I made for myself when I was trying to think.
INTRODUCTION

The first unit of this module presented the basic principles and models of human communication. We made a very important distinction between the meaning and the messages that participants share during the process of communication. Many examples were used from the general area of population and family planning, but there was no explicit description of how communication can be used to produce change in one or more of the participants. In this unit we will look at some of the ways that communication may be purposely used to produce change.

The basic principles of communication suggest that some change is unavoidable for those who participate in communication. Why? The very foundation of the meaning we have for symbols is derived from all of our experiences, and related experiences, with the symbols we use to communicate. Communication is one of the most important experiences that human beings have. Each new experience with a given symbol contributes some new meaning to it. Sometimes the change is very slight, but there are times when communication changes the very image that a person has of himself and the world in which he lives.

Although change is an unavoidable result of the communication process, the direction and rate of change are not always predictable. Much of the change from communication is spontaneous and unintended. In order to solve a specific problem, however, it is usually desirable to design communication to produce greater change over a shorter period of time, and in the direction that contributes to the solution of the problem. Planned change, as opposed to incidental change, is directed by one or more of the participants by intentionally sharing new information in order to achieve goals which they have selected.

In some situations, the problem and its solution are mutually selected by the participants involved. Change is certainly easier when all of the participants understand and agree about the causes and consequences of the problem, the goals (end results) to be achieved, and the obstacles to be overcome in order to solve it. If these conditions hold, then communication can be directed towards accomplishing the accepted courses of action. On the other hand, if some of the participants do not see their situation as a problem, or do not think about the problem the same way, then communication must be directed towards reaching a better mutual understanding and agreement about the problem and the best solution.
UNIT II

COMMUNICATION AND CHANGE

INTRODUCTION

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The problem of rapid population growth offers good examples of both directed and nondirected change. The introduction of radio into traditional rural villages brings new sources of entertainment and enjoyment, especially for young people. Radio dramas, or soap operas, expose rural youths to an entirely different, more urban, style of life where women work outside the home, and perhaps where young men and women actually choose husbands and wives for themselves. These changes in the beliefs and values of marriage, and new opportunities for women, are not planned or directed by the producers of the radio programs in order to solve a particular social problem.

Nevertheless, the changes from this communication experience may contribute unintentionally (1) to the solution of the population problem by raising the average age of marriage, and (2) to the cause of the problem in the relationship between young people and their elders. The only thing we can be sure of is that change occurs. Some may desire these changes, while others do not. But none of the participants intentionally designed their communication to produce these particular effects.

Family planning programs are organized to provide contraceptive services and to introduce new messages into a society in order to produce changes which will help solve the problems of rapid population growth. Members of the organization define the problem a certain way, and then use communication to get other people to take a particular course of action which will help them prevent unwanted pregnancies and slow down the rate of growth.

Although this may sound very one-sided—directed entirely by only one group of participants—there are usually many participants outside of the family planning organization who also understand the problem in a similar way, and who are already willing to accept the recommended course of action. These are the "ready adopters" of family planning who only need information about the most effective course of action—contraceptive methods and where to obtain them.

Obviously there are many others who share the messages of the family planning organization who do not think a large family is "their problem," nor overpopulation "their nation's problem." Even if they do want smaller families, they may not accept the recommended course of action as the best solution "for them." In this case, communication must be designed: (1) to change the way that people think about the problem and its solution, (2) to change the way that members of the family planning organization think about the problem and its solution, or (3) both. The last alternative is often overlooked, even though a mutual change in understanding the problem may lead to a faster solution.

Whether communication is planned and directed by formal organizations or unintended and incidental (like popular culture and informal conversations), the type of information that is created is the same. In other words, whether the
communication is intended to solve a problem or not, the participants share information about:

(a) the objects and events in their environment,

(b) the relationships among the objects and events in their environment, including their own personal relationships, and

(c) the value of the objects, events, and relationships in environment.

Once understood, this information will create, increase, decrease, or confirm the participants' uncertainty about their own beliefs, values, feelings, and potentially, at least, their future courses of action.

Deciding what to communicate requires that we focus not so much on messages as on change, specifically upon the changes we expect for our audience. Therefore, when we discuss change we must necessarily be concerned about the psychological and social forces which will most likely bring about, or induce, the kind of changes which we desire. This is why such a large part of communication theory is psychological and sociological: fundamentally, communication is concerned with the behavior of individuals and groups of individuals who interact with one another.

When we plan communication to induce change, we must design the content of our messages in terms of psychological and sociological change. Unless our messages are understood in terms of the audience's prior experience, unless our messages help the audience to see a strong practical benefit or value in what we recommend, and unless our messages achieve a certain amount of agreement and cooperation, then no amount of moving messages from point to point is likely to accomplish a great amount of desired change.

In this unit of the module we will examine a few of the approaches which have been developed to induce change in individuals and groups of individuals. We have categorized these approaches into four main groups: (1) the information transmission approach, (2) the instructional approach, (3) the persuasion approach, and (4) the dialogue approach to change. We have decided to look at a variety of approaches since no single approach will fit all of the situations that professional communicators might encounter, and since some may feel more "comfortable" using one approach rather than another.
SECTION ONE: THE INFORMATION TRANSMISSION APPROACH

The first and most simple approach to change is to assume that if we can get our message transmitted to the people we want to change, they will evaluate its contents and respond accordingly. Since the audiences lack the information that they need to solve their problem, the most important activity is sending messages. The greatest emphasis is placed upon information transmission.

Since mass media such as radio, television, and the press are the most efficient way to transmit a lot of information quickly to the largest number of people in the shortest period of time, they are the preferred channels of communication. Shannon and Weaver (1941) described this flow of information through five points: source, transmitter, signal, receiver, and destination. Lasswell (1948) stated it more simply with a question- who says what in which channel to whom with what effect? From an engineering point of view, Shannon and Weaver were interested in designing "perfect" information systems capable of information transmission with the highest possible fidelity per unit of cost. A system which receives messages as clearly and accurately as transmitted has high fidelity. Anything which interferes with the fidelity of information transmission is called noise.

Since the emphasis is placed upon designing a communication system with high fidelity (for a television picture, a radio or telephone signal, for example), the process is stated in engineering and mathematical terms. As we discovered in the first unit, however, receiving a message very similar to the one transmitted does not mean the same thing as interpreting the meaning of that message so that it means what the source meant by it. Receiving information and interpreting what it means are two different processes.

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Nevertheless, some scholars and professional communicators borrowed these engineering terms and applied them to the problems of human communication. Noise is used to mean anything which interferes with the intended meaning and effect of the information, and fidelity is what you have when the


information which is transmitted has its intended meaning and effect. Since the audience shares the information by means of the mass media, little attention needs to be given to the audience as sources of information. Thus, it is appropriate to apply the term source to those who produce the messages for transmission, and the term receiver to members of the audience who receive them over radio, television, etc. And finally, in situations where modern facilities for mass media transmission are nonexistent or underdeveloped, primary emphasis must be placed upon the design and construction of transmitters, and upon the mass production of inexpensive but reliable receivers like radios.

**Transmission for Family Planning Programs**

This approach is easy to apply to the national problem of rapid population growth and the related family problem of unwanted pregnancies. In a location where people have very little information about modern contraceptive methods and where to obtain them, it is necessary to transmit this information to as many people as possible. If the messages are received accurately, then those who do not desire any more children, but have no means to prevent pregnancy, will be likely to seek the services which are described.

This has been the experience in many countries around the world. Couples whose own parents may have had seven or more children, because they lacked the means to stop earlier, may find that they only want four or five children. If they obtain information soon enough about how to prevent their sixth or seventh child, they are likely to use that information to do something about it, especially if there are no other cultural influences or social pressures to prevent them.

After these initial, "ready adopters" have responded, however, there is usually a decline in the number of couples who seek family planning services in spite of the continued transmission of information. Furthermore, some of those who adopt early also discontinue early because they have not obtained enough instruction to use their contraceptives properly. Public channels of communication may be inappropriate for contraceptive instructions, and health clinics, though more private, are often too understaffed to devote enough time to this kind of communication, especially after they have just been established.*

*For a more thorough discussion of the "plateau effect" and the problem of discontinuance see E. M. Rogers, Communication Strategies for Family Planning, 1973, pp. 299-301.
When the goal of communication is to reduce the desired family size from four or five children down to two or three children, then the kind of information which is transmitted must deal with the values related to children, and with the relationships between family planning and other important life activities. The information transmission approach is still useful as the goals of communication become more complex and more conflicting with other cultural values and social pressures, but it may have to be supported with strategies from the instructional, persuasion, or dialogue approaches to change.

Misleading Assumptions About Information Transmission

Since the information transmission approach is relatively simple and easy to apply, there is a built-in tendency to expect too much from it. When these expected results do not occur, some people may become dissatisfied with the whole idea of using communication to induce such difficult changes among a large audience. Whether planned or not, however, we should keep in mind that communication is involved in almost all individual and social change.

If our planned programs of communication seem to fail, it may be due to:

(a) the limitations or inadequacies of our approach,
(b) obstacles and counter-forces beyond our immediate control, or
(c) simply the short amount of time that our programs have been operating.

Information transmission does not promise "instant" changes, especially if the changes are related to the audience's most central values and norms of social behavior.

There are many limitations and false assumptions about the information transmission approach which cause unrealistic expectations. Those who use this approach often assume that the audience has already accepted, or will easily accept, the problem as their problem, that the benefits for solving the problem reflect their values, and that the recommended course of action will be their preferred solution. It also assumes that by transmitting the information it will be perceived, interpreted, and readily understood by the audience in their own terms (concepts), and in their own situation. If these conditions, or assumptions, are valid then the information transmission approach may produce the changes which are expected.

Dorwin Cartwright discovered another important condition which is often overlooked in mass communication campaigns when he was studying a large-scale campaign to sell government bonds in the U.S. during the Second World
War.* He found that the campaign was more successful . . .

(a) when specific instructions were given about the proper course of action to solve the problem and to achieve the desired results,

(b) when the course of action is specifically located in time, and

(c) when a person is placed in the situation, or at least knows when he is in the situation, which requires him to decide to take, or not take, the recommended course of action.

In other words, a person may want what is being proposed and he may even understand what it is, but if he does not know specifically what to do and when to do it, he may not do anything.

In order to help someone adopt a method of family planning, we must do more than describe contraceptive methods and the value of using them to limit family size. The audience must also know the conditions in which the appropriate action should be taken for these particular beliefs and values. The campaign messages for war bonds were more effective when they stressed buying "...an extra $100 bond during the drive from the solicitor where you work." Potential adopters of family planning must be ready to act "when the mobile van visits your village." Or, "when you have obtained the number of children that you desire, then take your wife to the clinic at . . ."

Contraceptive behavior is much more complicated than bond purchases. Depending upon the particular method for preventing pregnancy, the required course of action can range from a single act (male or female sterilization), through a series of actions (taking oral pills and IUD insertion), all the way to frequent actions that must be carried out before each occasion of sexual intercourse (with chemical or mechanical methods). The first type of action requires one momentous, irreversible decision, while the others require a continuous series of decisions which are sometimes awkward and inconvenient. The messages which specify the conditions to act will require different creative approaches.

**Targets Which Won't Fall**

The most harmful assumptions caused by the information transmission approach are about the nature of the audience. It is easy to imagine, for

This knowledge allows us to segment, or break up, our audience into categories of people who can be expected to respond in similar ways to our messages. In other words, in place of one large mass target, we can aim our messages at several target subgroups composed of similar, but still separate, individual receivers. By designing special messages (bullets) for each kind of audience it is more or less assumed again that each of these audience segments (targets) will fall together when hit.

This approach can be refined further by considering the actual groups in which individuals in the audience hold membership. There is no actual group of "married women with primary education and four or more children," but in a specific village or city location there may be a group of women with different educational levels and parity who meet face-to-face occasionally to talk about mutual problems and topics of interest. Parent-teacher associations, mothers' clubs, sewing cooperatives, political clubs, even neighborhood gossip groups are just a few examples of the kinds of real groups to which women might belong. Men have their own groups and associations, and there are many groups for men and women together.

Like the previous refinement, we can design messages which take into account the specific values and goals which are important to these groups of people. This is a great improvement over the category approach, since actual groups of people communicate with one another. They are not separate, isolated individuals who react the same way simply because they are similar to one another. Real groups talk among themselves, and if they begin talking about the information which we share through the mass media, it's possible that they will reach a better mutual understanding about the topic, and some degree of agreement among themselves. Depending upon many other things—the importance and treatment of the topic, the group's prior level of understanding and agreement, the way the group discusses it, the other sources of information and influence upon the group, and so forth—these groups may begin to understand and agree with the source of information they receive through the mass media.

Networks that Bind

We can continue our analysis one step further by looking inside these natural groups at the network of relationships among their members. Not every member has the same amount of influence upon the group. Many groups have formal leaders whose opinions and advice are given more attention. Other members may also be considered as experts or leaders of opinion about a wide range of subjects. Others' opinions may be highly regarded, but only about one or two specific topics. Older members and better educated members of a group may receive extra respect for their opinions.

For example, millions of individuals listening to their radios, or watching their televisions, who are, for all practical purposes, alone with their receivers and absorbed in the messages which are being transmitted to them. In fact, one of the earliest fears of modern mass media was that they would gradually create one, homogeneous mass of people no longer in touch with one another and preferring to satisfy their needs for communication through these more impersonal, perhaps de-humanizing channels of communication.

When you can only transmit one message at a time to a very large number of people it seems as if you must also treat the audience as one mass of individuals who all respond to the same message the same way. Many of the words used to refer to mass media audiences reflect this basic idea. The audience is often called the "target" for a mass media "campaign," as if a war were being waged against them. In a very oversimplified "bullet" theory of mass communication, messages are treated as if they were magic bullets that transfer ideas, feelings, bits of knowledge, or motivations almost automatically into the minds of the target. The fact that some messages do seem to act this way tends to confirm this belief. When a deeply respected national leader suddenly dies, for example, or some other major event occurs which is important to almost everyone, then there is often a simultaneous emotional reaction throughout the country.

Topics which are less important, or important to a smaller number of people, do not usually have this kind of effect. Many audiences, when "hit" by messages, refuse to "fall over," or they respond differently than the source intended. It may seem as if the audience does not know a "bullet" when it sees one. As we emphasized in the first unit, however, there is no one-to-one connection between a message and the way that a person interprets and understands it. There is always a variety of responses possible due to the natural variation across members of the audience and the variation in the situation and context in which each interprets the same messages.

The assumption that the audience is composed of a homogeneous, distinct set of individuals who all respond the same way, is improved slightly by taking into account some of the major differences between individuals. As we discovered in the first unit, "different people need different information presented in different ways."

People who graduated from high school are different from those who only attended primary school. Young people may respond as a whole differently than their elders. People in the same general categories—education, age, sex, residence, marital status, parity, etc.—have had more similar experiences; therefore they tend to have more similar beliefs, values, and behavior.
This knowledge allows us to segment, or break up, our audience into categories of people who can be expected to respond in similar ways to our messages. In other words, in place of one large mass target, we can aim our messages at several target subgroups composed of similar, but still separate, individual receivers. By designing special messages (bullets) for each kind of audience it is more or less assumed again that each of these audience segments (targets) will fall together when hit.

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Research by Lazarsfeld and others on the 1940 U.S. presidential election led to the well known two-step flow hypothesis of information transmission: "that ideas often flow from radio and print to opinion leaders and from these to the less active sections of the population." Research since then has shown that this description of the influence process is too simple. Some opinion leaders, for example, are just as likely to wait for someone to ask for their advice as they are to actively attempt to persuade others. Opinion leaders may consult other opinion leaders as well as the mass media for information and advice. In other words, the chain of influence and information sometimes consists of one step, two steps, or many steps of various lengths, with the true origin sometimes unknown.

In general, it is more accurate to describe this process as a continuing flow of information and ideas through the networks of society. The mass media greatly influence—directly or indirectly—what flows through a society’s channels of communication. Because of their special expertise, ability to communicate, or conviction about a certain topic, some people influence this flow more than others. Thus, it is more realistic to think of a multi-step flow rather than a simple two-step flow, "...with information moving continuously through a social system, following the constraints and the needs of the system, shaped by the roles and sped by the institutions within the system" (Schramm, 1973, pp. 124-125).

The realization that audiences are actually composed of interrelated networks of individuals with leaders whose opinions have greater influence has important implications for planned programs of change. It may mean that all of the individuals in the audience do not have to achieve the same high level of understanding about a problem and its solution in order to believe and to agree that the recommended solution will have the best results (value) for them. According to our concept of opinion leadership, perhaps only a few well trusted, competent leaders need to understand thoroughly the problem and the solutions which are being recommended, then they can convince others that the problem is important and that they should try to do something to solve it.

If the problem is very complicated—like rapid population growth and contraception—then it will be difficult to get everyone in a group (a village or neighborhood, for example) to achieve a good enough understanding that they would individually feel confident enough to act. If a few trusted leaders understand it well enough, however, they may be able to explain it better to everyone else. Following their advice, some might try modern contraceptives long enough to see how they work. In other words, some members of the group do not need to know everything themselves if they believe and accept what others say and do.

*For a review of the research that has been done on this hypothesis since its introduction, see W. Schramm’s Men, Messages, and Media (N.Y.: Harper and Row, 1973, pp. 120-125).
What leaders do—their own experience with family planning—is important and will greatly affect what they say about it to others.

When people experience bad side effects from their new contraceptive, for instance, they do not have to know everything that might be wrong as long as they can talk to someone else nearby who does know, and who can competently advise them what to do. This will not work very well, of course, when people are afraid to talk to others about family planning or when nobody else has the necessary competence and trust. If the trust is there, but not the competence, then opinion leaders are likely to give bad advice. Either way, the implications are important for family planning communication programs. If possible, we should give these opinion leaders more attention and more support, then encourage them to give their attention and support to others.

Since these conclusions are so important for applying the information transmission approach to change, we have visually represented our audience analysis on the following two pages. The first picture represents a homogeneous mass of individuals as circles evenly spaced, and completely separated from one another. They look like unconnected "atoms" in space, or targets ready to be shot down.

The second picture shows this same set of individuals with some as triangles and squares, and they are numbered according to the rank ordering of their ages. Since we are especially interested in family planning, we have drawn the women who use contraceptives as triangles, the women who are pregnant or want to become pregnant as circles, and the women who do not want any more children but do not practice family planning as squares. Surely women of different ages and in three different family planning situations need different kinds of information, and will respond differently to the same information.

The second picture also indicates that these individuals tend to cluster into groups. We have made this more clear in the third picture by drawing circles or boundaries around clusters of individuals which are closer to one another. Notice that the sizes of some groups are larger than others, that one woman (No. 2) does not seem to belong to any group, and that some groups are closer to one another than to other groups. Before turning to the full communication network, notice that if none of the women in these groups talks to one another about family planning, then this third picture which still shows the women unconnected is also a picture of their family planning communication network. But it is a network of individuals without connections, and hence no opportunity of reaching a mutual understanding about family planning.*

*Although members are unconnected concerning family planning, they will be connected and talk to one another about a wide range of other subjects. The task for family planning programs is to get people to use these other networks for family planning communication.
Figure 12  A pictorial analysis of the audiences of mass communication
The fourth picture illustrates a communication network for family planning in a real village located in Korea. The data with which this diagram was created were collected by asking all of the women eligible for contraceptive practice "who they talked to most frequently in their village about family planning." The solid lines indicate a connection between two women who chose each other. The single lines with arrowheads indicate one-way choices between women.

As expected, some women in the village are chosen much more frequently than others. No one talks to No. 5, for example, even though she does not want any more children and is relatively young. But look closely at No. 29 and No. 24, two women in their mid-thirties. A large number of other women inside and outside of their immediate group talk to them about family planning. The woman represented by No. 29 also told us that she once tried to use a loop (ND) to prevent another pregnancy, but that she experienced very severe side effects and had to remove it. She will not try another method. On the other hand, No. 24 is successfully using oral pills to prevent another pregnancy. Although they talk to each other about family planning, they obviously disagree about practicing it. We do not know how well each understands what the other means by family planning, but we can expect that they are saying quite different things to other women in the village who talk to them about it.

This disagreement takes on more significance in light of other information we have about this village. The husband of one of the women's opinion leaders (No. 29) is the chief of the village. Both she and her husband have a lot of influence with other villagers, and her husband is also very much against family planning practice. The husband of No. 20, whose wife consults both No. 29 and No. 24 about family planning, is a very influential leader among younger members of the Village Development Committee. Although he is strongly against practicing or even talking about family planning in his village, his wife (No. 20) continues to talk to No. 24 and No. 17, who are using oral pills and the rhythm method, respectively.

No. 20 and No. 24 are also members of the same formal group in the village. All of the figures which are shaded belong to a recently organized Mothers' Club, whose purpose is to improve the quality of life in the village and the family, and to promote the practice of family planning. When all of the members of the club meet, they will discuss family planning and contraceptive methods as a group, so they will be open to many of the influences and dynamics of change which groups have over their members. Unfortunately for the family planning program, however, the village chief selected No. 39 to be the formal leader of this Mothers' Club. She is the oldest woman in the group and already past menopause. Only one other woman (No. 31) said she talks to her about family planning, and the leader herself told...

Figure 13 The audience as an interconnected network of individuals who communicate with one another about family planning
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us that she thinks it is improper to influence others to practice family planning. Nevertheless, there is always the possibility that the informal opinion leader, No. 24, might emerge someday as the formal club leader, or find other ways to direct the club's attention and influence towards helping its members reach a better understanding and acceptance of family planning. *

Our analysis of mass media audiences went in two different directions. First, we reduced the homogeneous mass of people into pieces, treating it as if there were not just one audience, but many audiences of individuals who are similar according to categories like age, education, etc. Then we took this collectivity, or aggregate, of separate-but-similar pieces, and we began to tie them together again according to how they form themselves into groups. Finally, we looked more closely at these natural groups to see how their communication—specifically, their networks of communication—binds members together in terms of the flow of information and influence. This reduction of something to its basic elements, followed by the emergence of functional systems greater than the sum of their parts is a very fruitful type of analysis frequently used by scientists to improve their understanding of what goes on in the world.

How can the whole ever be greater than the sum of its parts? The effect of communication upon an audience can be much greater than the sum of its effects on each individual member of the audience when members of that audience are interconnected by means of their own interpersonal communication networks. The basic idea is similar to the multiplicative effect of releasing new money into an economy. The overall impact of each dollar is multiplied several times as each person who receives the same dollar spends it again, and thus passes it on to someone else.

If a message we are trying to share, for example, stops with each individual who receives it and he does not talk about it with anyone else, then the overall effect is merely the sum of its effect on each individual. On the other hand, if each individual who understands our message talks about it with other

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*We will continue our analysis of this communication network in the Module Case Study. Those who would like to learn more about the Korean Mothers' Club Program should see the book by Park and others (1974) of Seoul National University, or the East-West Communication Institute paper by Kincaid and others (1974) listed in the additional reading in the Appendix.*
people in his own communication network--family, friends, and acquaintances, then the overall impact is multiplied. It is multiplied not only in terms of the greater number of people who try to understand it, but also in terms of each person's own contribution--his ideas, feelings, and meaning--to our message. When the input of this interpersonal network is negative, then the overall desired effect of our message will be less than the sum of its effect on those who receive it, but a positive input can greatly amplify the power of our original messages to bring about change.

Channels that Connect

When we speak of mass media, we usually refer to channels of communica-
tion in which a machine or electronic technology transfers information which has been processed by an organization such as the staff of a newspaper or broadcasting station. In other words, the message does not go directly from one person to another; both the organization and technology are interposed between those who participate in communication, the source, and the audience. With interpersonal channels of communication, on the other hand, the messages are shared directly by each of the participants. We often use the term "face-to-face" communication for direct communication among the participants. The distinction is not always perfect, however. A speaker from a platform can directly reach up to 100,000 or more people with the help of a loudspeaker system. This channel is still face-to-face, but it reaches a large number of people at one time. A telephone conversation, on the other hand, seems to have many of the advantages of face-to-face communication, yet it is mediated by the telephone system and the participants cannot see one another.

There is nothing from research or from our own personal experiences to make us doubt that a person can learn from, and be influenced by, any medium of communication. There is no clear and consistent evidence that a complex and costly channel like television is more efficient than less costly ones like radio and visual materials.* The greatest differences in the effect of media are more likely within the media than between different media. In other words, what one does with a medium may have more differences in effect than the choice of the medium.

When it is necessary to deliver information simultaneously and widely to a large number of people, however, then media like television and radio obviously have an advantage over film and interpersonal channels of communication. When it is necessary to show movement, then television and motion pictures are recommended. Using music to get attention requires a sound medium and so forth.

The cost of using a medium is also an important factor. The unit cost of a medium is strongly affected by the number of people who receive the message. Not only is television time and production cost more expensive than radio, for example, but in most developing countries the number of people reached by television is usually

*See W. Schramm's Big Media, Little Media (Stanford, California: Institute for Communication Research, Stanford University, 1973).
much smaller than radio. So the cost per person reached by radio is often much smaller than for television.

Once we have a good idea about what to communicate, and with whom, then we should compare the advantages of each of the available channels with respect to the goals we hope to achieve.

Guidelines for Selecting Channels*

1. Which senses are used by the audience? A person can obtain information through the stimulation of all of his senses. Some media restrict the use of some of our senses. Social norms, or the cultural "rules of society," may also restrict participants in certain situations from using some of their senses to communicate (touch, for example). Within these natural and social limitations, some media offer special advantages for stimulating some senses over others.

Radio and telephone reach only the ear; printed material and posters are designed for our eyes. Television, films, slide-tape presentations, puppet shows, etc., stimulate both our eyes and ears. Face-to-face communication provides the opportunity to use many of our senses at the same time. We must weigh the advantages of using many senses against the advantage of having the receiver concentrate most of his attention on information perceived through one sense. Radio, for example, allows the receiver to concentrate his attention on what he hears, but also allows his other sense to engage in different activities. The housewife and working man are therefore able to listen to a broadcast while working. Will more attention than this be required for the receiver to understand the message? Does he need to see an example of what is being discussed, or can it be adequately described with words? These questions depend upon the message itself and the intended receivers.

2. How much opportunity is there for feedback? Face-to-face channels offer the best opportunity for two-way exchange of information. All participants are able to get information immediately regarding the impact of the messages that they have shared. Each can ask questions to clarify potential misunderstandings. In some situations—such as when a fieldworker makes a home visit—there is opportunity to switch back and forth between the participants allowing both to introduce new information and questions ... to converge towards more mutual understanding.

The larger the audience, and the more technology interposed between the participants, then the less opportunity there is for this kind of interaction, and the more delayed is the feedback. A strategy like the radio forum overcomes some of these limitations by organizing local listening groups who follow a broadcast with informal group discussion and sometimes share correspondence with the producers of the radio programs.

*See also W. Schramm's chapter on "The Media and Communication: Mass and Personal," in Men, Messages, and Media, pp. 113-130.
3. By whom and how will the pace of communication be controlled? In face-to-face communication either participant has the opportunity to slow down the other, or even ask him to repeat his message. A newspaper or a poster can be read at the reader's own pace. A person who listens to the radio or watches a film is required to adapt to the pace set by the source. People who can process information much faster must slow down to the pace set by the broadcast; those who cannot keep up with the information will not be able to interpret very much, and perhaps will become frustrated and stop listening. Mass communicators are thus forced to set their pace for the slowest level and hope that faster receivers will not become bored, or else try to attain an average pace which will suit the greatest proportion of the intended audience.

4. Which codes are available? A high proportion of face-to-face communication is non-verbal. Tone and rhythm of voice, emotional feeling, facial expression, body movement, and so forth, can be used to add emphasis, arouse emotional feelings, and increase credibility. Radio and television have access to many of these codes. Posters, films, and television can use color to create special moods, arouse positive feelings, or create emphasis. Print media can use enlarged print (headlines) or use special characters, drawings, or still photographs to vary the message and draw attention. Traditional forms of dance or puppets make use of color, music, body movement, etc., to create information which complements or reinforces the central message.

5. Which channels reach which audiences? The most important advantage of mass media is that they are mass channels of communication. They have the power to make a very large portion of a given society aware of and thinking about a single issue or event at the same point in time. For family planning and many other topics, mass media also have the power to legitimize the discussion of a topic which might otherwise be prohibited from public discussion because of its sensitive or taboo nature. Family planning fieldworkers often credit mass media with making the job of discussing sex-related matters with housewives much easier for them.

Face-to-face communication can be multiplied through a society only with great effort over a long period of time. Mass media, on the other hand, have enormous power to multiply one-way communication and make it available in many places at once. The primary receivers of mass media messages are then able to take this initial transmission a step further by discussing the message with others who may have missed it over the mass media. In two or more such steps a very large number of people can be reached quickly. This multiplicative power of mass channels of communication must be weighed against the advantages of face-to-face communication, such as the opportunity for feedback and control over the pace.

Mass media expand the audience's information environment through time and space. People can be exposed to lifestyles very different from their own. The comparison and contrast with other ways of doing things can greatly affect one's set of
values and expectations in life. Rural residents may be filled with a desire to visit
the city, or to move there permanently. Urban residents may develop a value for
travel to other countries, for new forms of dress, and even for new languages.

Closely associated with media "reach" is the popularity of each channel of
communication. At certain times of day, for example, television may be used by
more people than radio, or vice versa. Some media may currently be more pres-
tigious than others, and hence may indirectly enhance the credibility of the mes-
gage. Some media may be more credible for news and government announcements,
others for entertainment, and still others for learning new skills.

Some members of the audience may not yet be very "literate" with new forms
of media like film and television, which will limit the speed with which they can
process and absorb information and the amount and variety of content that they can
learn. On the other hand, it may require less time and experience for them to
become literate with radio than it would to learn to read and write printed material.
All of these factors will affect which people and how many people can be reached
by a given channel of communication. Sound communication planning depends upon
knowledge of how, when, and how well various audiences use channels of communi-
cation.

6. How important is it for the receiver to retain a copy of the message for
future use? One of the advantages of printed material is that the receiver is often
able to keep a copy to read again later. A pamphlet describing how to take oral con-
traceptive pills can be read many times and retrieved whenever a new question arises.
Even a wall poster can be kept in place over a relatively long period of time, and one
can attach maps or drawings showing the way to clinics for the passerby to tear off
and use later. Face-to-face communication is gone in a second. Unless the receiver
has access to a recorder of his own, electronic media like television and radio are
also gone as soon as they are finished. How important is it to be able to preserve
a message? Would it be feasible and worth the cost to equip radio forum leaders
with cassette tape recorders to preserve a radio broadcast to play over again the
following week, or to have available for those who miss the program and want to
hear it later?

7. Which channel has the greatest power to hold the receiver's attention?
It is a very simple matter for one to change the radio to a music or sports program
if a disagreeable family planning message comes on the air. It is not so easy to
turn off a neighbor's conversation, or to ask a government fieldworker to leave your
home. It is easier to fall asleep during a speech to the whole village, much more
difficult during a small group discussion. Newspaper advertisements can be skipped
more readily than a radio advertisement inserted between one's favorite programs,
but it may be easier for someone to interrupt you while the radio is on than while you
are reading. Telephones have a notorious ability to interrupt whatever other chan-
nels of communication are being used.
It is useful to think of channels as competing for the receiver’s attention. Although social norms and the nature of the channel may influence attention, very often it is the message itself which determines how much attention is given. Once again, it is difficult to generalize about the power of communication channels to get attention without also considering the information being shared and the characteristics of the audience—the kind of messages that they want and the specific situations in which they use each channel.

8. Which channels have greater power to meet specialized needs? It should be obvious that most forms of mass media are very useful for serving common needs of the general public. National and international news events, the latest football scores, announcements about the nation’s population problem, and so forth, are most efficiently transmitted via some mass channel of communication like radio. For more specific messages about family planning, there may be large enough differences among various regions of a nation that one general message would be inappropriate. It is unmanageable, for instance, to name all of the locations of the nation’s family planning clinics over national television. People in one region certainly do not want to know where the clinics are in another region. To find their own clinics, they have to turn to more localized channels, perhaps a municipal radio station, a flyer, or a neighborhood poster.

Some areas may have been exposed to the family planning program long enough that it is no longer necessary to describe family planning in general. They may be ready for more persuasive messages which clarify the advantages of smaller family sizes (values), or the reasons why contraception is relevant to their current situation (relationships). In yet another area, the local audience may have a greater need for information about the location of contraceptive methods and the services available. Information to reduce individual anxieties and the problems with specific methods may best be handled via face-to-face communication with a medical doctor or a trained nurse.

Research on the adoption of a wide variety of innovations has shown that mass media channels of communication are most important in the earlier stages of a planned program of change. When very few members of an audience are aware of a new idea or practice, mass media are a powerful means of making a large number of people quickly aware of its existence, and for giving them a basic understanding of what it is and how it works. Interpersonal channels of communication become more important to the audience for gaining acceptance of the value of the innovation, for gaining enough instruction to use the innovation, and for gaining enough trust of the innovation to accept it for themselves. Direct, personal experience, along with interpersonal communication, is more important for confirming whether or not they have made the correct decision.

The research that has been done specifically on the adoption of family planning contraceptives indicates that interpersonal channels are the most important sources of information and influence to adopt. * Both clinic adopters and respondents to sample

surveys cite friends, relatives, and neighbors as the dominant sources of influence about family planning. These findings are not surprising, given the special nature of family planning as an innovation, and the great amount of trust usually required for new courses of action with potentially dangerous physical consequences for those who adopt.

9. **How many channels at one time?** More than one communication channel and more than one source are usually necessary to satisfy all of the informational needs of a large audience. One channel will not reach all of the intended audience; one type of source will not have the right kind of credibility for everyone. It is sometimes more effective and efficient to use **multiple channels** and **multiple sources** of communication, rather than relying on just one.

Family planning organizations often plan special communication campaigns to promote family planning. A campaign is a well-planned, intensive set of communication activities which are designed to accomplish a specific set of goals with certain audiences over a specific time period. Although family planning may be promoted through many communication channels throughout the year, there are advantages to increasing the effort through an intensive, multiple-channel campaign for two weeks, one entire month, or perhaps even three months during the year. To increase the attention that is given to family planning, these campaigns are often planned to coincide with relevant national holidays, or more relaxed periods during the year, such as right after a major harvest.

An intensive campaign produces a **variety** of **messages** and **materials**, and thus may attract **greater audience attention** and participation. Messages are multiplied throughout the audience over a short period of time, and the probability of being exposed to, and thinking about, family planning is greatly increased. It is much more probable that someone will hear a family planning message on the radio, step outside where he meets a friend who also mentions the subject, and then turn and see a new family planning poster on the street corner.

Campaigns permit organizations to focus their attention on a particular type of audience, or set of goals. Since there is a more precise beginning and end to a campaign, it is easier to evaluate how successfully the messages and selected channels achieve these goals. They also offer a **change of pace** and activity for the family planning staff, and may help to renew their interest and creativity. If the campaign is scheduled regularly every year, there will be more time to prepare materials in advance, and more opportunity to pretest new materials before they are used on a wide scale.

And finally, it may be easier to obtain the cooperation of other organizations and government agencies if they know that the **extra effort** required on their part will only be necessary for a specific period of time. This point underscores one of the potential dangers of intensive campaigns. To be effective, the messages which are produced for different channels should complement each other. **Radio messages** and **posters**, for example, should **support**, not contradict, one another. The campaign should be planned from the beginning so that messages over different channels are designed to accomplish the same set of goals, including the communication activities of cooperating organizations and agencies.
SECTION TWO: THE INSTRUCTIONAL APPROACH

Inducing people to change requires that they learn to think, to feel, and to behave in new ways. People are capable of many different kinds of learning; and as might be expected, there are many different theories of how people learn. The scope of learning theory is much too broad and too complex to present in this module. Therefore, we have limited our discussion to the basic principle of rewarding changes in behavior and to the generally accepted factors which make instruction more effective in many different situations.

Rewarding Changes in Behavior

The most fundamental principle of learning is that a person's current beliefs, values, and actions are acquired as a result of past occurrences that have been rewarded under similar circumstances. In other words, a person usually thinks, feels, and behaves in ways that have been beneficial and satisfying to himself in the past. When these previously learned ways of responding to a situation cannot be used, or are no longer rewarding, then a person will usually begin responding in new ways until he finds one which is rewarded.

A reward is sometimes a physical thing like food or money, but it may also be something psychological like a feeling of satisfaction or pride, or something social like the esteem and respect given to us by other people. Learning theory simply defines a reward (or reinforcement) as anything which increases the tendency or likelihood that a person will repeat a response to the same thing (stimulus) in similar circumstances. A harmful result, or punishment (negative reinforcement), is anything which decreases the tendency or likelihood that a person will repeat a response to the same thing in similar circumstances. And finally, responses which receive no reward or punishment will gradually disappear over time as their tendency to repeat becomes less and less likely.

This basic principle of learning explains how and why people respond one way rather than another. It does this by adding the concept of reward, or reinforcement. Of all the possible responses that a person might make in a situation, the one that is most likely to occur is the one that has been rewarded most frequently in similar situations in the past. For us to influence the rate and direction of change, we only have to control how frequently responses are rewarded, and the kind of rewards that are obtained. If one response fails to be rewarded, and another response receives more reward, then this other response will occur more often when the same situation occurs again.

Some kinds of rewards, like verbal approval or praise, are received by way of communication. Others, like receiving a raise in salary we requested, or a doctor's help, are things obtained by means of communication. And some
kinds of rewards can be learned indirectly by showing new responses being rewarded in the messages used in communication.

The amount of control that professional communicators have over the type and frequency of rewards that their audiences receive is, of course, limited. Nevertheless, we can use the principle of rewarding responses to improve the design of our messages and communication strategies, and to make our programs more effective.

In many cases, people are aware that they are responding a certain way because they expect to be rewarded as in the past, and because they expect to continue acting as they have in the past. In the terms used in the first unit, they believe with a great deal of certainty that if they continue responding the same way, then they will continue to be rewarded as usual.

If people do think about their behavior, or if we can get them to think about their behavior, then we are in a position to share information with them to raise doubts that their usual ways of responding will continue to be rewarded. We can...

(a) show them that they are no longer being rewarded as much as they used to be,

(b) show them new rewards which are possible for them if they would change their behavior, and

(c) show them people just like themselves actually being rewarded for trying the new behavior that we are recommending.

We have indicated three very important phrases in order to emphasize the limitations of this principle when it is used indirectly for designing messages. First, no amount of symbolic information we share with someone about their own rewards and experiences will have much effect on them if it contradicts, or is inconsistent with, the actual rewards which they receive. Or, as we said in the first unit, our messages will be believed and accepted only if they are valid (true to their own experiences) and consistent with other beliefs and information they receive about the same subject.

People will pay little attention to messages about how harmful "overpopulation" is to them, if they are not at the same time actually experiencing some of those harmful results. To a rural villager, for example, emphasizing the harmful effects of urban migration and overcrowding will have little effect if he does not experience these harmful effects personally. Losing his own children to the city because they can no longer afford to stay in the village may be something which he is actually experiencing, or some of his neighbors are experiencing. If these same
What Makes Instruction More Effective

It is not necessary for us to understand all of the various theories of learning to apply many of the useful findings that have come to us from years of research on the learning process. The seven general factors which we have selected set forth the guidelines or rules by which people can more effectively achieve better understanding, new knowledge, and new skills.

These guidelines should be useful for a wide variety of settings and problems of learning. Since they tell us what we should do as means to higher quality instruction, they are also useful as a general yardstick, or set of criteria, for criticizing and evaluating a particular way of teaching or instructing. You may want to refer to them later as a checklist to evaluate your own communication for programs of planned change. In short, these seven factors tell us what to do in order that what we want to teach can best be learned by others, to improve instruction rather than to describe or explain how it takes place.

Guidelines for Improving Instruction

1. Begin with the learner's present level of ability, knowledge, and accustomed ways of learning. Vocabulary, rate of presentation, difficulty and complexity of content, the channels and codes of communication, etc., should be chosen on the basis of the learner's level of capability. Messages should be clear and easy for the learner to understand. It is necessary to know from the beginning what will motivate the learners to learn, what their needs are, and what will be rewarding for them.

2. The learning objectives must be clearly stated, and as concrete and specific as possible. In a learning situation (as opposed to a persuasion situation) a person will be open, receptive to new ideas, and motivated to learn if the intent (the learning objectives) of the communication is clearly stated at the beginning. Knowing the specific learning goals makes it easier for the learner to understand and to organize the content and learning process which follows.

*For a discussion of these factors and educational television, see chapter five of Schramm's (ed.) Quality in Instructional Television (Honolulu: University Press of Hawaii, 1972, pp. 211-222), from which the guidelines were drawn.

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children cannot afford to send money back to their parents in the village as in the past and as expected, then we have another harmful consequence of overpopulation and large families which is real to him or others just like himself. The crucial lesson is that whatever we say has to somehow "fit" or be consistent with our audience's other sources of information and their actual rewards and punishments.

The second limitation of this approach is that if we try to show our audience new rewards which they will receive by changing their behavior, we have to be careful that the rewards really are possible for them. Sometimes we can prove this to our audience by getting them to try new behavior on a trial basis to see what happens. If this new behavior is rewarded as expected, then it is likely to be repeated; if not, then the new behavior will be discontinued.

Whether or not the rewards are actually possible for them is very important, but it is also important that our audience believes or expects that it will be possible for them. Some people may not think that they are competent enough to carry out a new behavior well enough to be rewarded, or achieve its reward. Some may think that only other people really get the kind of rewards which we might point out to them. And finally, some may not personally know anyone else like themselves who actually tried the new behavior and were rewarded.

To overcome this last problem, we can design messages about people who are like our audience, and show them being rewarded for their new behavior. If the audience sees that these rewards are possible for someone just like them who has already changed their behavior, then they may indirectly learn to try the new behavior for themselves.

This approach is especially effective for mass media. Television or radio, for example, can present a man with a small family who has just had a vasectomy, and who consequently gains the respect and admiration of his friends, his co-workers or boss, or religious leader. Show how this man's new behavior improves his self-concept as a man, how he gains greater affection from his wife. The viewer or listener will learn indirectly how family planning works and how it would benefit him personally.

This approach sometimes works better than presenting direct, factual information about the subject. The people we select as our models for the new behavior must be similar to our audience. The final limitation of this approach, then, is that if we show the wrong kind of people in our messages, or people not very much like our audience, then learning will not be very effective.*

*A variation of this approach is to show people who are not just like our audience is, but like our audience wants to be someday, or hopes to be like in the future.
What Makes Instruction More Effective?

It is not necessary for us to understand all of the various theories of learning to apply many of the useful findings that have come to us from years of research on the learning process. The seven general factors which we have selected set forth the guidelines or rules by which people can more effectively achieve better understanding, new knowledge, and new skills.

These guidelines should be useful for a wide variety of settings and problems of learning. Since they tell us what we should do as means to higher quality instruction, they are also useful as a general yardstick, or set of criteria, for criticizing and evaluating a particular way of teaching or instructing. You may want to refer to them later as a checklist to evaluate your own communication for programs of planned change. In short, these seven factors tell us what to do in order that what we want to teach can best be learned by others, to improve instruction rather than to describe or explain how it takes place.

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*For a discussion of these factors and educational television, see chapter five of Schramm's (ed.) *Quality in Instructional Television* (Honolulu: University Press of Hawaii, 1972, pp. 211-222), from which the guidelines were drawn.
3. Obtain and maintain the attention of the learner.

One of the best ways to get the learner's attention is to show him how and why the learning objectives will be relevant and meaningful to him personally, how they will fit into his life, and how they will make his life more rewarding. Attention and interest can be maintained by occasionally varying the pace of presentation, the degree of emphasis, the type of examples that are used, the channel of communication, etc. Attention can also be increased by allowing the learner the opportunity to become actively involved and to participate in the learning process.

4. Allow for sufficient repetition with variation of the content to be learned.

One trial is seldom enough for learning to be effective. Say the same thing more than once, but in different ways. Use a variety of examples and learning exercises to teach the same thing. Learning is based upon rewarded experiences, so give the learner plenty of experience with the material in a variety of context, situations, and styles of presentation. Then make sure he is rewarded for correct responses.

5. Proceed step by step, beginning at the learner's initial level and gradually moving toward the learning objective at the appropriate pace.

Learning will be difficult if the learner is expected to learn new beliefs, values, or behavior which depart too greatly from his initial level. Learners should be presented with a well-planned sequence of learning experiences which lead to the position or level specified in the learning objectives.

6. Give the learner the opportunity to practice what he has learned followed by an effective reward.

To be effective, learning requires active and persistent responses followed by satisfying reward. Give the learner the opportunity to do something, to respond actively rather than to passively receive information. Have the learner try the new task, or behavior, for himself. Ask questions for the learner to answer, present problems for the learner to solve, ask the learner to talk about what he has learned with other learners, and so forth. Reward each successful response with knowledge that it is correct (feedback), with social approval (from the teacher, fellow learner, friends, etc.), or with even more material rewards such as prizes, awards, monetary incentives, and so forth.
SECTION THREE: THE PERSUASION APPROACH

The most basic assumption of the persuasion is that the participants communicate with the conscious intent to influence each other to change what they believe, what they value, or how they act. Failure to induce these kinds of changes is usually attributed to: (1) ineffective communication and understanding, (2) disbelief, and (3) resistance to the beliefs, values, and actions which are being advocated. The research on persuasion has attempted to identify the factors which influence another person or an audience to accept a different point of view, a new position, or a new interpretation of the objects, events, and relationships in the environment and their value.

There are several important differences between persuasion and instruction, which were summarized in the last section. In an instructional situation the participants are more or less ready, or expecting, to learn something new. The second guideline for effective instruction, for instance, recommends that we clearly state the learning objectives to make it easier for the learner to understand and organize his task. Furthermore, in an instructional situation most participants voluntarily accept the role of students in relation to their teachers. It is more or less assumed that the teacher is sincere, and that his instruction is valid. The primary task is to understand, and then to remember, what is being taught.

In a persuasion situation the participants must also understand and remember what is advocated, but they may not be easy to learn. They usually do not accept the role of student, nor assume that what they are influenced to learn is valid. Thus, most of the factors which improve instruction will also be useful for persuasion, but much more is usually required to get the audience to accept what they are being asked to learn.

If audience members realize that they are being "persuaded" to accept a different point of view, they sometimes become defensive and resistant to communication. For effective instruction it is often necessary to repeat many times with variation, and to give the learner ample opportunity to practice what he is expected to learn. In persuasion, understanding and remembering is sometimes easy without much repetition and practice. The proposition that...

Limiting the size of your family makes it easier to save money for your children's education.

...is not very difficult to understand and remember. Very few repetitions and little practice are required by most people to learn it. Learning is necessary for persuasion, but the main problem for persuasion is to influence someone to accept one position rather than another position, such as...

Having many children in your family increases your earning power for better old-age security.

7. Show the learner an example of the new behavior for him to imitate.

Some people, especially those with low levels of education and literacy, do not learn very quickly from written material or from verbal messages, which are too general and abstract for them to understand. They may be able to learn faster by just seeing a specific, concrete example of what is to be learned.

Using these seven guidelines of instruction to create your own specific communication will not be easy, nor will it guarantee "instant" success. Before using them yourself, we recommend that you first use them to critique, or to evaluate, communication that has already been created. Find a recently developed poster, radio announcement, or television program which was designed to teach something. By yourself, or with a group of co-workers, analyze this communication in terms of the seven factors presented in the guidelines.

Based on your knowledge, does the message seem to begin at the intended audience's initial level of knowledge, or does it assume they already know more than they actually do? How does the communication get, and then keep, the audience's attention? Are the learning objectives clearly stated, as concretely and specifically as possible? Continue asking questions like these about all seven factors, and you will gradually learn to identify places where a particular communication could be improved. Soon you will develop the skill to apply these to your own work without having to refer to the list.

Although instant success is not guaranteed, the effectiveness of your own communication should be improved by trying to apply the basic principles of instruction in each guideline. By carefully pretesting your efforts to apply these principles, you should be able to learn the most effective ways of using them. A rule or guideline for action can only accomplish so much; the rest depends upon our own hard work and creativity.
The most basic assumption of the persuasion is that the participants communicate with the conscious intent to influence each other to change what they believe, what they value, or how they act. Failure to induce these kinds of changes is usually attributed to: (1) ineffective communication and understanding, (2) disbelief, and (3) resistance to the beliefs, values, and actions which are being advocated. The research on persuasion has attempted to identify the factors which influence another person or an audience to accept different positions, or new interpretations of the objects, events, and relationships in the environment and their value.

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Having many children in your family increases your earning power for better old-age security.
This problem introduces the third major difference between instruction and persuasion. Students are seldom exposed to competing instruction (immediately, at least) which is purposely designed to break down, or to reverse, their new learning. In persuasion, however, where there is controversy there is likely to be (opposing) communication soon afterwards which advocates another point of view. Interference and counter-information by others who oppose our point of view makes persuasion much more difficult to achieve than instruction. In addition to learning, then, persuasion usually requires strong logical arguments and reasons for acceptance, and special incentives (rewards and punishments) to induce change, such as an emotional appeal like "love for one's family or nation," or a fear appeal like "overpopulation will lead to widespread starvation."

The factors which make persuasion more effective are usually categorized according to (1) the characteristics of the source, (2) the content of the persuasive message, (3) the characteristics of the audience, and (4) the response of the audience. As with the instructional approach, it is beyond the scope of this module to review all of the research which produced these factors. We will review the main findings from this research, and then concentrate on one of the most useful models of persuasion.

Guidelines for More Effective Persuasion

The Source of Persuasion:

1. Persuasion will induce more change in the desired direction if the source has high credibility according to his audience. Credibility of a source is composed of two factors: (1) his competence and expertise, and (2) his trustworthiness and safety.

2. Sometimes a source's characteristics which are irrelevant to the topic of communication—the way he looks, his clothes, his accent, etc.—can influence the acceptance of his point of view.

3. A source's persuasion is more effective if he first expresses some of the beliefs, values, and behavior which are already accepted by the audience.

4. A source's credibility is less of an influence on change later (as the memory of the original source gradually fades, than it is during communication or immediately afterwards.

5. Change from the persuasion of a positive source may be reversed, or changed again, more rapidly over time than change from a negative source, perhaps because the change is attributed more to the contents of the information itself than to the source.

6. What an audience thinks of a source of persuasion may be directly affected by what it thinks of the information he tries to influence them to accept. In other words, the message can affect the acceptance of the source, as well as the source affecting the acceptance of his message.

The Content of Persuasion:

1. A source is likely to achieve more change, the greater the amount of change he asks his audience to accept, up until the change he advocates is so extreme compared to the audience’s initial position that they reject it immediately, perhaps without really trying to understand or accept it.

2. There is likely to be more change by presenting one side of a controversial issue ...

   (a) when the audience is generally friendly to the source,

   (b) when the source’s point of view, or side of the issue, is the only one to be presented, and

   (c) when the source desires only immediate, though temporary, change.

3. There is likely to be more change by presenting both sides of a controversial issue ...

   (a) when the audience initially disagrees, or is generally unfriendly to the source,

   (b) when the audience is very likely to hear the other side of the issue anyway from someone else, and

   (c) when the source desires change over a longer period of time.

4. When presenting two opposing points of view one after another, the one presented last will probably be more effective.

5. Research has been unable to determine whether the most important information about the position being advocated should be placed at the beginning or at the end, but don't allow the best arguments and appeals to get lost somewhere in the middle.
6. There is likely to be more change in the desired direction if the source explicitly states his conclusions about the changes he desires than if he lets the audience draw its own conclusions (except when the audience is very intelligent).

7. Whether an emotional appeal or a logical argument based upon fact will have more influence depends upon the nature of the audience, and therefore, information is necessary about the specific audience to be influenced.

8. Research generally shows that moderate fear arousal can produce change in some situations, but only if the specific courses of action to reduce the fear are clearly stated at the same time and are actually possible for the audience to take; otherwise the audience is likely to avoid thinking about the issue and reject the information.

9. A change which is based on more complex or subtle information is likely to last longer than change based on more simple and obvious information.

10. Information which warns the audience of a source's intent to manipulate them increases their resistance to the change he is persuading them to accept.

11. Sometimes pleasant distractions (like good food or entertainment) presented at the same time as the persuasive information decrease resistance to change.

The Audience of Persuasion:

1. Effective persuasion takes into account the audience's other beliefs, values, and actions which are related to the ones which they are being influenced to change ... the related network which will either support or resist the desired change.

2. Persuasion is likely to achieve less change when it advocates changes which are central to the audience's most cherished, deeply rooted beliefs, values, and behavior; and when the likelihood of personal, negative consequences from the change are greater.

3. Some members of an audience will be easily changed by any attempt to influence them, but they are just as equally likely to change after exposure to counter-information from other points of view.

4. The personality of the members of the audience affects their acceptance of persuasive influence; individuals with low esteem for themselves are more easily influenced by persuasive communication.

5. The desired change lasts longer over time if the audience actively participates in the communication rather than passively receives the information with little effort on its part.
6. Members of the audience are strongly influenced by the groups to which they belong, or want to belong to in the future, especially members who are the most strongly attached to their groups.

7. Members of the audience are rewarded for conforming to the beliefs, values, and behaviors accepted by their groups, and they are punished for changing, or deviating from them.

8. Resistance to change will be greater the more obviously the change is associated with, or related to, the groups in which members of the audience have, or hope to have, membership.

The Responses to Persuasion:

1. The powerful influence of a consensus among an audience to resist change can be weakened if a person can get at least one other member to support the change with him publicly, especially if they are both consistent in their responses.

2. Participation of the audience in discussion and decision about the desired change helps to overcome resistance to influence.

3. Beliefs, values, and behaviors which people make known to others are harder to change than those which people hold privately.

4. Members of the audience who actively advocate a position which was previously unacceptable are more likely to change their position afterwards.

5. More of the desired change may occur some time after exposure to persuasive communication, than during, or immediately after exposure.

Most of the research which supports the effects of these factors on persuasion was conducted in the United States over the last thirty years. The social system and culture in which persuasion occurs may affect the amount of influence these factors will have for increasing change. Some may be applicable to a wider range of cultural and social settings; others may be more limited. The influence of a person's group memberships may be stronger or weaker than they are in the United States, for example. Until more information is obtained about a particular audience, however, it is probably safe to assume that the groups a person belongs to will influence his response to persuasive communication. As with the guidelines for effective instruction, applying these factors will not guarantee instant changes, but taking them into consideration when you plan your communication should take you a few steps ahead on the road to improvement.
CONSISTENCY MODELS OF CHANGE

One of the most useful contributions to the study of human communication is the concept of "strain toward inner consistency," or "toward cognitive balance," first developed by Heider. The basic idea is that a person tries to keep his feelings regarding another person consistent with his understanding of their mutual liking or dislike for a third person, object, or idea. Inconsistency is one of the main forces which leads to change.

From this came Newcomb's A-B-X theory, which is now familiar to most students of communication, at least in the form of the diagrams used to illustrate "a strain toward symmetry," or balance in cognitive relationships. If two people, A and B, have a positive feeling (+) toward each other, and toward an object, idea, or third person, X, then the relationship is balanced. If Mrs. Chung and Mrs. Lee, neighbors in the same village, for example, have positive feelings toward each other and toward family planning, then the three relationships are balanced as shown:

\[
\begin{array}{c}
\text{family} \\
\text{planning} \\
X \\
+ \\
\text{Mrs. Chung} \\
+ \\
\text{A} \\
+ \\
\text{B} \\
\text{Mrs. Lee}
\end{array}
\]

If Mrs. Chung and Mrs. Lee dislike each other, and one is favorable toward family planning (X), and the other is unfavorable, then the relationship is still balanced.

\[
\begin{array}{c}
\text{family} \\
\text{planning} \\
X \\
+ \\
\text{Mrs. Chung} \\
- \\
\text{A} \\
+ \\
\text{B} \\
\text{Mrs. Lee}
\end{array}
\]

In other words, if Mrs. Lee, who has negative feelings about family planning, finds out that Mrs. Chung, whom she does not like, does favor family planning, then the relationships are still consistent. In fact, the knowledge that Mrs. Chung

*For additional reading, see F. Heider (1958) and T. M. Newcomb (1953) in the reading list.
favors family planning provides Mrs. Lee with another reason to continue disliking her. It creates no pressure or force to change her feelings toward family planning or toward Mrs. Chung.

But if A and B are favorable toward each other, but disagree about X, or if they are both unfavorable toward each other, but agree about X, then the three relationships are inconsistent and out of balance:

\[
\begin{align*}
\text{Mrs. A} & \quad + \quad X \quad + \quad \text{Mrs. B} \\
\text{Chung} & \quad - \\
\text{Lee} & \quad + \\
\end{align*}
\]

When two friends like Mrs. Chung and Mrs. Lee find out that they disagree about family planning there is pressure to change the system of relationships. This often results in much communication as one tries to convince the other that family planning should be accepted more or less favorably, so that their friend's position agrees more closely with their own. The failure of one or the other to change toward family planning places pressure on them to think less favorably of each other: "How can a friend of mine be so wrong about family planning?" On the other hand, if two people who do not like each other discover that they each like the same thing, there is pressure created: (1) to begin liking each other more than before, or (2) to begin feeling less favorable toward the object than before.

The consistency concept is a useful tool because it tells us the source of tension, the force behind change, and because it is applicable to many kinds of communication problems. On page 163, for example, we have reproduced the communication network from the Korean village which we analyzed in the section on the Information Transmission Approach to change. Only this time we have pulled out three of the most important people in the village to look more closely at the consistency of their relationships.

No. 29, you may remember, is the wife of the village chief. She is strongly against family planning. This is indicated in the bottom diagram by the negative sign (-) on the dotted line from her to "family planning." No. 24 is also one of the most important

*A quick way to calculate whether the system is consistent or not is simply to multiply the three signs algebraically. If the product of the three signs is positive, the system is balanced; if negative, then the system is unbalanced, and in a state of tension to change.
opinion leaders of the village, but she uses oral pills and strongly favors family planning (+). No. 9 is younger than the other two women, and she talks to many women throughout the village about family planning, as well as to No. 29 and No. 24. No. 9 does not want any more children, but she is against family planning right now (-). The interesting thing about these three women in the village is that they are all three close neighbors, they are friends, and they talk to each other about family planning. What does the consistency model of change tell us about this set of relationships?

The most important thing it tells us is that there is tension among the three women, and potentially, at least, there may be enough force to induce change in the system. The relationship between No. 9 and No. 29 is balanced regarding family planning: they like each other, neither one wants to get pregnant, and they both are unfavorable toward family planning (+, -, -). On the other hand, No. 24's relationships with both No. 29 and No. 9 are out of balance—ineconsistent. They all like each other, but she approves of family planning, and they do not (+, +, -). Looking at the full diagram above them again, you will notice that No. 24 does have some support from others in the village—some of her friends also practice family planning.

The potential for change certainly exists, and a well-informed family planning fieldworker could do something to help them resolve their differences. Unless No. 24 experiences negative side effects from her pills, it seems unlikely that she would change her position regarding family planning now that it has gone to the point of actually doing it. She may be able to rationalize why her friend, No. 29, is against family planning, since she once had a bad experience with the loop. The likelihood is great, however, that No. 24 is trying to explain to No. 29 about the advantages of the oral pills for family planning when the loop does not work. If No. 29 does not listen, and strongly criticizes No. 24 for using pills, then there is pressure for them to begin liking each other less than before. If, however, No. 29 is not critical, and they have agreed not to talk about the subject of family planning, then they may be able to overcome this particular difference of belief, value, and behavior toward family planning.

The person most likely to change may be No. 9, who is younger, and caught between two friends, one who is probably advising her to practice and the other who is probably telling her not to listen. If she does change her position toward family planning and begins practicing, then her relationship with No. 24 becomes consistent, and it becomes inconsistent with No. 29. When this happens, No. 29 rather than No. 24 will be the one who is inconsistent with both of her friends in this triangle. The pressure on No. 29 to change would become even greater.

Meanwhile, the implications for the rest of the village are great, indeed, if No. 9 does change and begin advocating the practice of family planning. It is likely that many others in this village are waiting to see what will happen within this triangle, and which of the village’s two most important opinion leaders No. 9 will follow.
What makes the particular triangle of women so interesting is the chain of reactions that are likely to occur throughout the rest of the network if No. 9 does change under this kind of tension, or for any other reason. She is located at the beginning of two chains of people in the network which potentially at least could influence the position of women in three other cliques or groups in the village. No. 19, for example, does not want any more children, but does not practice family planning yet. If No. 9 changes, and then influences No. 19 to change her position regarding family planning, then No. 2, the only other woman in their clique to practice family planning, has someone else who is older to support her position toward family planning.

This clique, by the way, is composed primarily of the younger women in the village who are currently pregnant, or desire to become pregnant. When the time comes for them to stop having children, they will have support and experience from one, and perhaps two, other women if No. 19 changes.

You can easily continue this kind of analysis throughout the network by following the two chains of reactions that could begin if No. 19 changes. No. 19 talks to someone about family planning in a triangle of women where two do not want any more children, but do not practice, and where the other one if pregnant (34, 38, 30).

The link from No. 9 upward to No. 27 and No. 18 might eventually take the influence of her change into the upper right-hand clique which is also composed of younger women who still want to get pregnant. And finally, so that we remember that in looking at a network of communication relationships, rather than linear chains of influence, notice also that No. 29 and No. 24 also have influence on this same upper right-hand clique through No. 20, whose husband is the young leader of the village development committee and is strongly opposed to family planning.

The concept of consistency supports the use of endorsements of commercial products (or family planning) in the mass media by well-known celebrities who are highly regarded by the general public. To have a nation's greatest athlete publicly endorse vasectomies, for example, may have a positive effect upon the feelings of the audience toward vasectomies. It would make him a credible source, as well as a good model for the desired behavior. So, the basic idea that inconsistency creates pressure, or a strain toward more consistency, is useful in many mass media situations as well as in interpersonal communication.

Figure 14 Analysis of Consistency Among Three Opinion Leaders in a Korean Village Network
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We finished our discussion of the basic principles of communication with a dialogue as an example of convergence toward mutual understanding about "knowledge." The primary purpose of the participants engaged in that dialogue is to improve their own understanding of the basic question: How much do you know? It does not appear as if the father and his daughter are primarily interested in persuading one another to accept their own points of view, yet there are certain moments in the conversation when both the father and his daughter are willing to change their understanding of the problem because of something the other one said.

Dialogue is a powerful way to induce mutual change if the participants are willing to examine their own points of view in light of someone else's point of view, and if all of the participants are willing to change. The main assumption of the dialogue approach to mutual problem-solving is that the stability, or rigidity, of a person's point of view is due to his refusal to listen to alternative points of view because they are threatening.

If members of an audience feel threatened by someone's efforts to "sell" them a "better point of view," they are not very likely to listen to what is being said, or to examine their own point of view very carefully. A person will not try out another point of view if he fears that his own world will be shattered, or changed, without anything else to take its place. To risk a change is to leave oneself open to the possibility of a painful experience. The fact that growth, or positive consequences, might follow is usually insufficient to reduce threat enough for authentic listening to occur.

The dialogue approach to change consists of a series of steps or procedures which will create good conditions for authentic listening and change. First, the participants share an experience which is capable of focusing their attention and interest on a mutual problem. The main purpose of this experience is to "disturb" the participants—to arouse their desire to search for a better understanding of the problem.

The type of experience that is used is not as important as its capacity to stimulate attention, interest, uncertainty, and desire to search for a better understanding and solution to the problem. If family planning is the topic, the experience could be a photograph of conditions in an overcrowded home or village, a slide-tape presentation of conditions in a clinic, a movie about world food supply and population, or even a joint field trip to a local neighborhood of urban migrants. The purpose of the experience is to ensure that the participants have shared at least one common experience with the problem. This experience becomes the point of departure for their dialogue. This process would be diagrammed accordingly:
If the first procedure for effective dialogue is followed, however, one will not have time to think about one's own position as much, because he knows that before he can begin telling you his position he has to prove to your satisfaction that he is listening by restating your main points. He cannot listen to you just to find out what is wrong with what you are saying.

Just the opposite. The second procedure requires that he also look for what is right with your point of view; that is, the conditions under which he will accept your position as valid. Before getting too excited about having someone actually help you explain your own position, you should remember that you will be doing the same thing for him: listening, interpreting, re-expressing, and pointing out where and when his position is valid; then discovering the areas of similarity to your own position.

Conditions for Acceptance

Finding the conditions under which you accept another's point of view as valid is much more difficult than listening to the other's satisfaction. It requires that you really think about his point of view, interpret it, and explore it until you can see where it is valid. You must tell the other person when, and under what conditions, you would accept his position as true. To commit yourself to this task requires that you first accept the proposition that a statement has some set of conditions in which it is valid. It is contrary to our natural inclinations to help someone we disagree with to find when and where his point of view is valid. It is more natural to tell him where it is wrong or invalid. But you eventually accomplish the same thing: by stating the conditions under which a position is valid you are implicitly suggesting the conditions under which it is not valid. It is much easier, however, for the participant to see and to accept where his position is not valid if he discovers this for himself.

It is easier because you are not attacking his position where it is weak, but rather helping him clarify where it is strong (or best applies). This takes much of the threat out of the discussion.

GUIDELINES FOR EFFECTIVE DIALOGUE

The low-threat conditions for effective dialogue and change are created when the participants follow three procedures as they discuss their experiences with the problem:

1. Satisfy the other participant that you understand his point of view by restating it for him as clearly as possible in your own words.

2. Find the conditions under which you would accept the other participant's point of view as valid.

3. Find where the other participant's point of view is similar to your own point of view.

It is easy to violate these procedures during an actual dialogue. The important thing is whether the participants genuinely try to follow them, and believe that the others are also willing to follow them. The purpose is to create the conditions which make the inquiry and exploration of different points of view much less threatening.

Mutual Understanding

The first procedure is the easiest to grasp, mainly because it is within most of our own experiences already. We can probably all remember a conversation or argument where another person finally got our position correctly, but in his own words. When this happens we usually feel as if we are finally getting through—understood at last. If the other person merely says, "of course I understand what you're trying to say, but the point is..." then you can be sure that he is not really listening. Even if he is, there is no way to know for sure. Often enough, what the other person does is return to what he is trying to say, which gives you the impression that he is not really listening to what you are saying, but thinking ahead about his own position. Or if he is listening, it may be only to find a weakness in what you are saying to improve his "attack" on your position.
An Exercise: Conditions for Acceptance

In order to demonstrate what is meant by the conditions for acceptance, take the following statement and list the conditions under which you think it would be a valid statement, then list another set of conditions under which this same statement would not be valid to you.

Point of view:
CONDOMS ARE SAFE CONTRACEPTIVES.

Conditions for acceptance:
Condoms are safe contraceptives if:

Conditions for rejection:
Condoms are not safe contraceptives if:

There are many possible conditions which could be used to support this statement or show where it is wrong. Compare the type of conditions you wrote with the ones that follow.

Condoms are safe contraceptives if:
(1) by "safe" you mean physical health
(2) you are comparing it to the IUD (especially if the general health of the user is poor)
(3) you mean safe for the couple who uses them

Condoms are not safe contraceptives if:
(1) by "safe" you mean protection from unwanted pregnancy
(2) you are comparing it to the IUD again (note: It is still "safe" under condition 1, if you compare it to the rhythm method)
(3) you mean safe from the standpoint of the nation's growth rate, or if the couple would suffer greatly with one more child.

If the first procedure for effective dialogue is followed, however, one will not have time to think about one's own position as much, because he knows that before he can begin telling you his position he has to prove to your satisfaction that he is listening by restating your main points. He cannot listen to you just to find out what is wrong with what you are saying.

Just the opposite. The second procedure requires that he also look for what is right with your point of view; that is, the conditions under which he will accept your position as valid. Before getting too excited about having someone actually help you explain your own position, you should remember that you will be doing the same thing for him: listening, interpreting, re-expressing, and pointing out where and when his position is valid; then discovering the areas of similarity to your own position.

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It is contrary to our natural inclinations to help someone we disagree with to find when and where his point of view is valid. It is more natural to tell him where it is wrong or invalid. But you eventually accomplish the same thing: by stating the conditions under which a position is valid you are implicitly suggesting the conditions under which it is not valid. It is much easier, however, for the participant to see and to accept where his position is not valid if he discovers this for himself. It is easier because you are not attacking his position where it is weak, but rather helping him clarify where it is strong (or best applies). This takes much of the threat out of the discussion.

To be willing to do this, you need to accept that there are hardly any statements in ordinary language without some conditions of validity. There are no absolutely false assertions, nor absolutely true assertions. If one tries hard enough he can usually find the circumstances under which any statement might be true. To a certain extent this can be assumed because of the relativity of language and meaning. "Condoms are safe contraceptives" is a useful statement to illustrate this principle. Imagine the disagreement that this statement might produce among a demographer, a doctor, a family planning official, a social scientist, an extension agent, and a rural couple in Thailand, for example.
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(2) you are comparing it to the IUD again (note: it is still "safe" under condition 1, if you compare it to the rhythm method)

(3) you mean safe from the standpoint of the nation's growth rate, or if the couple would suffer greatly with one more child.

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Many other conditions might be discovered during a dialogue. You might agree that condoms would be "safe" only if they are used correctly during sexual intercourse, manufactured correctly before their use, and so forth. The idea is to explore the conditions that must exist for a statement, or point of view, to be valid. Notice how each time you list a new condition for validity, you imply at the same time the conditions under which it would be invalid. Once the participants allow these conditions to be examined in their discussion, they can turn to more specific questions, such as: "Do couples in village 'X' know how to use condoms correctly?" Or, "Are the condoms sold there manufactured under rigid quality control standards?" And so forth . . .

If you are beginning to think that the "condom" is too easy an example, then try out statements of your own. How about, "Children are necessary for old age security," or "Sex is a private, not a public matter," or "Birth control just benefits the developed countries." Where are these statements valid? Where invalid?

**Areas of Similarity**

Arriving at the point where the participants are willing to explore where each other's position is valid is easier if the first procedure is followed by proving that each participant is really listening. Finding similarity is easier if the first two procedures are followed.

To appreciate how difficult this actually is, however, just return to the previous example. What do demographers, administrators, social scientists, doctors, fieldworkers, and rural couples all have in common? What is similar about their respective points of view about family planning and birth control? We could attempt an answer from our own experience, but meaningful similarity must come from the dialogue among this group of participants. After going through this process, each participant should also have a better idea of why the others think the way they do, and hence a greater appreciation and tolerance for their point of view--in spite of the differences and disagreements that remain.

**Applying the Dialogue Approach to Family Planning in the Philippines**

In the first unit we looked at how the International Institute of Rural Reconstruction is using agricultural analogies--like banana tree planning--to improve their communication about family planning. Although they refer to their project as an

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*See Juan M. Flavier's paper, "The Agricultural Approach to Rural Family Planning Communications in the Philippines," (prepared for an East-West Communication Institute Conference on Communication and Integrated Rural Development, Honolulu, December 2-6, 1974), and the first unit of this module.
"agricultural approach" to rural family planning communication, let's look more closely at the procedures which they follow to see how similar they are to the dialogue approach. All three of the procedures which we have listed for more effective dialogue are used in their approach.

1. **What basic assumptions do they make about their audience, about learning, and about change?**

First, they assume that a better understanding of what family planning means, and how it works, will lead to more acceptance of family planning practice and longer rates of continuation. They assume that change can only be induced gradually by "starting with what they know, and building on what they have," at the learner's initial level of understanding. They assume that learning will be more effective in a congenial, enjoyable atmosphere, punctuated at times with humor to relieve tension and feelings of threat. And finally, they assume that change grows out of new information, new opportunities, and new awareness of what others are thinking and doing.

2. **How do they satisfy the other participants—the farmers—that they clearly understand their point of view about agriculture?**

They begin their communication with a new group of participants by listening first to what they want to teach them—the family planning "technocrats"—about farming, and then they base what they want to share about family planning on what they have been taught about farming. In other words, they "anchor" what they want to say to what the farmers teach them about farming. This is not easy; it requires that they listen very well to what the farmers are sharing with them. Out of all of the things they learn about farming, they select the beliefs and practices which are most like, or analogous to, the basic beliefs and practices of family planning. Later, the use of drawings to illustrate the farmer's analogies proves that they did indeed listen to the farmers.

Notice that by first listening to what the farmers want to teach them, they are deliberately inducing human development by dignifying the worth of the farmer and what the farmer knows about his world. Or conversely, this approach reduces threat to the farmer's sense of personal worth that a direct, one-way attempt to sell family planning might create.

3. **How do they find the conditions under which the farmer would accept their point of view about family planning as valid?**

They do not use just one agricultural analogy to family planning. As they use this approach with each new group, they continue to search for new and better analogies. Hence, it is a growing system of knowledge, and a process of communication which gradually converges toward more and more mutual understanding and acceptance of similarity. When one farmer understood the analogy between the oral pill and special ingredients added to horse-feed "believed" to prevent pregnancy, he
immediately shared one of his own about feed for his pigs. The family planning experts can continue this dialogue by sharing a drawing of another analogy of the ipil-ipil seeds which, if eaten by hens, prevents them from laying eggs.

What the participants are doing with these examples of the same basic concept and practice is gradually broadening the conditions under which its application would be accepted by all participants as valid. Other analogies gradually expand their application of the basic idea of family planning in general and different methods of contraception until they are ready to think about family planning for themselves. Even the conditions for accepting the value of the family planning idea are broadened to include more and more agricultural situations, and eventually to family planning for their own families. As one farmer remarked near the end of their dialogue, "If it's good enough for my pineapples, then it's good enough for my own family." If they do not always succeed immediately in gaining personal acceptance for family planning, they at least increase the farmer's level of understanding about what it is and how it works. When the time comes and the conditions are right for him to practice, then the likelihood that he will act is greatly increased.

4. How do they find where the other participant's point of view is similar to their own point of view about family planning?

At first glance, it may seem absurd to look for similarity in what a farmer may say about his agricultural practices, and what we would like to say to him about scientific family planning. But this is exactly what the "technocrats" in Cavite, Philippines, set out to do after they realized that their lectures about family planning were having little impact. They accomplished this by searching hard for analogies—similarity—to family planning in what the farmers were telling them about their own experiences with agriculture. And they discovered many of them, with much more similarity than they ever imagined could exist. But in the beginning, they had no basis for imagining what could be similar because they knew absolutely nothing about the farmer's own practices. To find out, they had to listen first, very, very carefully.

A Final Note about Dialogue

It should be obvious by now that the dialogue approach will not be effective for communicators who want to manipulate the other participants, or merely persuade them to their own point of view. There has to be a genuine willingness by all participants to risk changing their original point of view, including the ones who organize the dialogue. Any other approach is liable to be interpreted as an attempt to persuade rather than to explore new possibilities. If this happens, the level of threat will rise accordingly, destroying the conditions for openness and change. This low-threat atmosphere should not be considered as an all-or-none quality. It is achieved gradually as the participants move further into the discussion and make an honest attempt to follow the procedures for effective dialogue.
A SUMMARY: FUNDAMENTAL HUMAN COMMUNICATION AND CHANGE

The main purpose of the first unit of this module was to achieve a better understanding of the basic principles of human communication. We described fundamental human communication as a process in which the participants share information with one another in order to reach a mutual understanding, and then a reliance on a topic or problem of mutual importance. We discussed and examined examples of eight critical events, or subprocesses, which go on within this general process: expressing, perceiving, attending, interpreting, understanding, mutual understanding, believing, and agreement. And finally, we diagrammed three useful models of the communication process: the feedback model, the switchback model, and the general convergence model of communication in which the participants move towards a more mutual understanding of each other's meaning, or point of view.

The purpose of the second unit of this module is to extend what we learned about the basic principles of communication by examining four approaches by which communication can be used purposely to induce change in the participants. Planned change, as opposed to incidental change, is directed by one or more of the participants by intentionally sharing new information in order to achieve goals which they have selected.

In some situations, the problem and its solutions are mutually selected by the participants involved. If not, then before communication can be directed towards accomplishing the accepted courses of action, it must be directed towards reaching a better mutual understanding and agreement about the problem and its solutions.

Whether or not the change is planned or incidental, the participants share information about:
(a) the objects and events in their environment,
(b) the relationships among the objects and events in their environment, including their own personal relationships, and
(c) the value of the objects, events, and relationships in their environment.

Once understood, this information will create, increase, decrease, or confirm the participants' uncertainty about their own beliefs, values, feelings, and potentially, at least, their future courses of action.

The Information Transmission Approach

The information transmission approach to change assumes that if we can get our message transmitted to the people that we want to change, then they will evaluate its contents and respond accordingly. Since the audience lacks information to solve 173

This approach can be used without directly telling the other participants to follow these procedures. This would be preferable, for instance, when telling the other person about them would be threatening, or make him defensive. An important feature of the dialogic approach is that one participant can induce the others indirectly to follow these rules by setting an example for them to imitate. Getting them to follow these procedures can also be encouraged by occasionally asking, "Okay, now that I have stated your point of view clearly, let me see how well you understand mine," or "I've pointed out where I would accept your position, now let's look at mine. Where would it be valid?" If there is any risk that knowledge of a set of procedures would create anxiety and destroy the inquiry, then it would be better to teach them by your own example and suggestions.

The dialogue approach may seem to be limited to a small group of participants who can talk to one another face-to-face. While this is preferable, we should keep in mind that dialogue can also be effective in its written form. The dialogue printed at the end of the last unit of the module invited you to participate and to think about what each person was saying, the conditions of acceptance, and the similarity of their points of view. The idea that knowledge is woven together like cloth, for instance, is acceptable under some conditions, but not if we attempt to measure it like cloth. The dialogue approach can also be used in the same manner on television and radio, and there is always the possibility that it will serve as an interesting enough experience to stimulate dialogue among the audience.

*For additional reading material about the dialogue approach, see Anatol Rapoport's Fights, Games, and Debates, Ann Arbor: University of Michigan Press, 1967. For an enlightening application of the dialogue method to self-discovery, authentic thinking, and education, see Paulo Freire's Pedagogy of the Oppressed (New York: Herder and Herder, 1970). For its application with portable videotape recorders and cameras, see Sandra Gwyn's report on the FOGO PROCESS developed in Canada, Film, Video-Tape and Social Change, Memorial University of Newfoundland, Canada, 1972.
A SUMMARY: FUNDAMENTAL HUMAN COMMUNICATION AND CHANGE

The main purpose of the first unit of this module was to achieve a better understanding of the basic principles of human communication. We described fundamental human communication as a process in which the participants share information with one another in order to reach a mutual understanding, and then agreement, about a topic or problem of mutual importance. We discussed and examined examples of eight critical events, or subprocesses, which go on within this general process: expressing, perceiving, attending, interpreting, understanding, mutual understanding, believing, and agreement. And finally, we diagrammed three useful models of the communication process: the feedback model, the switchback model, and the general convergence model of communication in which the participants move towards a more mutual understanding of each other's meaning, or point of view.

The purpose of the second unit of this module is to extend what we learned about the basic principles of communication by examining four approaches by which communication can be used purposely to induce change in the participants. Planned change, as opposed to incidental change, is directed by one or more of the participants by intentionally sharing new information in order to achieve goals which they have selected. In some situations, the problem and its solutions are mutually selected by the participants involved. If not, then before communication can be directed towards accomplishing the accepted courses of action, it must be directed towards reaching a better mutual understanding and agreement about the problem and its solutions.

Whether or not the change is planned or incidental, the participants share information about:

(a) the objects and events in their environment,
(b) the relationships among the objects and events in their environment, including their own personal relationships, and
(c) the value of the objects, events, and relationships in their environment.

Once understood, this information will create, increase, decrease, or confirm the participants' uncertainty about their own beliefs, values, feelings, and potentially, at least, their future courses of action.

The Information Transmission Approach

The information transmission approach to change assumes that if we can get our message transmitted to the people that we want to change, then they will evaluate its contents and respond accordingly. Since the audience lacks information to solve
their problem, the most important activity, and the greatest emphasis, is on information transmission, usually through the mass media which are more efficient for quickly reaching the largest number of people. An information system which receives messages as clearly and accurately as transmitted has high fidelity; anything which interferes with the fidelity of transmission is called "noise." Thus, this approach easily leads to confusion about the difference between receiving information and interpreting what it means. This approach sometimes fails short of its expectations because of the limitations, obstacles, and counter-forces beyond our immediate control, or simply because of the short amount of time that information programs are in operation.

The information transmission approach can be improved greatly by giving the audience specific instructions about the proper course of action to solve the problem, by specifically locating that course of action in time, and by placing receivers in the situation—or letting them know when they are in the situation—which requires them to decide to take, or not to take, the recommended course of action.

When only one message can be transmitted at the same time over a channel, there is a built-in tendency to treat the audience of information transmission as one, large, homogeneous mass, all glued to their own receivers and no longer in touch with one another. This tendency can be overcome, and the effectiveness of the approach can be greatly improved...

(1) by segmenting the audience according to some of the major differences between individuals, and then designing messages for general categories of people with similar education, occupation, age, sex, residence, marital status, parity, and so forth, in order to take advantage of the tendency for people who have had similar experiences in life to have more similar beliefs, values, and behavior.

(2) by considering the actual groups in which individuals in the audience hold membership, and which occasionally meet face-to-face in order to reach a better mutual understanding and agreement about problems and topics of mutual importance, and

(3) by considering the networks of communication and relationships among the members of these actual groups in the audience; and by giving the trusted opinion leaders more attention and support, and then encouraging them to give their attention and support to others. The effect of information transmission on an audience can be much greater than the sum of its effects on each individual member of the audience when they are interconnected by means of their own interpersonal communication networks.
There is nothing from research or from our own experience to make us doubt that a person can learn from, and be influenced by, any medium of communication. The greatest differences in the effect of media are more likely within the media rather than between different media. What we do with a channel of communication is more important than the choice of the channel. Once we have a good idea about what to communicate and with whom, then we should compare the advantages and disadvantages of each available channel with respect to the goals we hope to accomplish.

The Instructional Approach

Inducing people to change requires that they learn to think, to feel, and to behave in new ways. The most fundamental principle of learning is that a person's current beliefs, values, and actions are acquired as a result of past occurrences that have been rewarded under similar circumstances. People learn new ways when the ways that they have previously learned to respond in a situation cannot be used, or are no longer rewarding. Then a person will usually begin responding in new ways until he finds one which is rewarded.

This principle led to three major implications for communication: (1) show people that they are no longer being rewarded as much as they used to be, (2) show them the rewards which are possible for them if they would change their behavior, and (3) show them people just like themselves actually being rewarded for trying the new behavior which we are recommending. Stress was placed on the limitations of this approach if communication based upon any of these three implications is inconsistent with the reality of those people's real situation—if they still are being rewarded for previous behavior, if rewards from new behavior are not really possible for them, and if the "models" of the new behavior that we show them are not really like themselves.

Seven general factors were set forth which should make instruction more effective in a wide variety of settings and problems of learning:

1. beginning at the learner's initial level,
2. clearly stating the learning objectives in concrete and specific terms,
3. obtaining and maintaining the learner's attention,
4. repeating the content with sufficient variation,
5. proceeding step by step at the appropriate pace,
6. providing an opportunity for the learner to practice what he is to learn followed by an effective reward,
7. giving the learner an example to imitate.
Although instant success is not guaranteed, the effectiveness of communication for instruction should be improved by creatively applying these seven basic guidelines for effective instruction.

The Persuasion Approach

In a persuasion situation, the participants communicate with the conscious intent to influence each other to change what they believe, what they value, or how they act. Failure to persuade someone else to change is usually attributed to misunderstanding, disbelief, or to resistance to the changes being advocated. Although learning is also required for persuasion, much more is usually required to get the audience to accept what they are being asked to learn. In persuasion, the participants are usually not ready to take the role of learners, they do not immediately accept what they are asked to learn as valid, less repetition and practice is usually required to learn what is being advocated, and there is more exposure to competing information which interferes with, and opposes, the changes which are advocated. Therefore, persuasion usually requires strong logical arguments and reasons for acceptance, or special incentives and emotional appeals to induce change.

An extensive list of factors for improving persuasion was presented which has resulted from several decades of persuasion research. These factors were presented in the form of guidelines for effective persuasion according to: (1) the characteristics of the source, (2) the content of the message, (3) the characteristics of the audience, and (4) the response of the audience during, or immediately after, persuasive communication.

The basic assumption of the consistency model of persuasion is that a person tries to keep his feelings regarding another person consistent with his understanding of their mutual liking or disliking for a third person, object, or idea. The basic concept of the model is that inconsistency creates pressure, tension, or strain towards more consistency and greater balance so that the tension will be reduced. The implications of this concept were explored with a real example of inconsistency among three women in a family planning communication network in a rural village in Korea.

The Dialogue Approach

The dialogue approach may be used to induce mutual change among those who participate. Its basic assumption is that the stability or rigidity of a person's point of view is due to his refusal to listen to alternative points of view because they are too threatening. To reduce this threat, and to create good conditions for authentic listening and change, the participants should share a common experience with a mutual problem to stimulate their attention, interest, uncertainty, and desire to search for a better understanding. And then they should follow as closely as possible the three guidelines for effective dialogue:
(1) satisfy the other participant that you understand his point of view by restating it for him as clearly as possible in your own words,

(2) find the conditions under which you would accept the other participant's point of view as valid, and

(3) find where the other participant's point of view is similar to your own point of view.

The main purpose of dialogue is to create the conditions which make the inquiry and exploration of different points of view much less threatening and more open to change. An example of the dialogue approach in action was presented from the family planning program in the Philippines. Although this approach appears to be more applicable to interpersonal, face-to-face communication, other channels can be used to create the common experience to stimulate dialogue. And finally, mass media channels of communication can be used to show dialogues in action in order to stimulate similar dialogues among members of the audience.

In conclusion, we can only restate the principle of communication and change that is so fundamental that it appears not only throughout the basic principles of the first unit, but also in every approach to change which we have discussed in the second unit: effective communication depends greatly upon learning about, learning from, and sharing experiences with the other participants with whom we share our information.
ADDITIONAL READINGS
ADDITIONAL READINGS


ADDITIONAL READINGS


APPENDICES A – E

EXAMPLES OF COMPLETED LEARNING EXERCISES
APPENDIX A
CONCEPT CERTAINTY

DESCRIPTION: A woman from a rural village who is 35 years old, has four children and a primary school education.

STATEMENTS THEY MIGHT MAKE ABOUT FAMILY PLANNING WHICH CONTAIN A CONCEPT WHICH THEY WOULD BE VERY CERTAIN ABOUT:

1. “God bless the child; each child brings his own supply of food from heaven.” “Birth control is against God’s Law & Will.”
2. “Nature must be allowed to take its course; we cannot tamper with nature.”
3. “There is no overpopulation in our village; fifty years ago we had over 300 households, now there are only 200.”

NOW TAKE ONE OF THE STATEMENTS WHICH YOU JUST WROTE ABOVE AND WRITE ONE OR MORE STATEMENTS THAT YOU COULD MAKE TO HIM THAT MIGHT MAKE HIM RECONSIDER ONE OF THE RIGIDLY HELD CONCEPTS THAT HE USED. WHAT WOULD MAKE HIM DOUBT (BE LESS CERTAIN OF) WHAT HE SAID ABOVE?

1. God tells us to love, care for, and raise our children well. Having more children than we can care for and raise well is irresponsible and against the will of God.
2. God helps those who help themselves. To plant and harvest rice is to tamper with nature. To give medicine to your sick child is to tamper with nature. Man has always tampered with nature; that is man’s nature. It is as natural for man to plan his family as it is for him to plant his rice or heal his sick.
3. During your grandfather’s time, more children died and those who survived did not live as long as today. The 300 households in his time had less people than your 200 households of today. Your children need more education than his did. Many of your children leave to live in the city—but even though they are not living in households here, you are responsible for growing enough food for them, too. Our villages only look like they are not overpopulated because our cities are very overpopulated. Overpopulation is not measured by number of households per village, but by the amount of food grown per person living.
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APPENDIX B

SECTION ONE SUMMARY EXERCISE

**Concept Description**

1. **interpreting**
   - the application of a concept to reduce uncertainty in a situation.

2. **attending**
   - focusing one's concentration for interpretation.

3. **communication**
   - the process of sharing information, and the relationship of the participants in this process.

4. **information**
   - the creation of pattern by changing or modifying some medium of exchange.

5. **relationship information**
   - information which instructs.

6. **uncertainty**
   - a state of choice, or a situation which requires a decision.

7. **concepts**
   - the tools which one uses to think with, or the blocks we use to construct reality.

8. **value information**
   - information which motivates.

9. **analogy**
   - a way of relating objects and events in the environment according to their similarity.

10. **information pattern**
    - that which affects uncertainty in a situation where a choice exists among a set of alternatives.

11. **perceiving**
    - when someone senses or becomes aware of information that has been created.

12. **environmental information**
    - information which describes.

13. **concepts**
    - a network of inferences that are or may be set into play by an act of categorization.

14. **feedback**
    - knowledge of results.

15. **beliefs**
    - relationships of objects and events in the environment which people assume, or accept, to be true.

16. **pattern**
    - a set of two or more possible alternative states.

17. **communication**
    - a process in which the participants share information with one another in order to reach a mutual understanding about a topic or problem of mutual importance.

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APPENDIX C

AN ANALYSIS OF ROBINSON CRUSOE'S DISCOVERY

IT HAPPENED one day, about noon, going towards my boat, I was exceedingly surprised with the print of a man's naked foot on the shore, which was very plain to be seen in the sand. I stood like one thunderstruck, or as if I had seen an apparition . . . ; I could see no other impression but that one. I went to it again to see if there were any more, and to observe if it might not be my fancy; but there was no room for that, for there was exactly the very print of a foot--toes, heel, and every part of a foot.

Notes

How it came thither I knew not, nor could in the least imagine. . . . perfectly confused and out of terror. After being alone for so long, why doesn't he feel terrified to the last degree. happy or excited to see another human being?

Sometimes I fancied it must be the devil, and reason joined in with me upon this supposition; for how should any other thing in human shape come into the place? Where was the vessel that brought them? What marks were there of any other footsteps? And how was it possible a man should come there?

His fear leads him to infer that the devil was the source of the print, and makes him think about all of the logically necessary antecedent conditions for a man to have done it (if A, then B).

... but he would never have been so simple to leave a mark in a place where it was ten thousand to one whether I should ever see it or not, and in the sand, too, which the first surge of the sea, upon a high wind, would have defaced entirely. All this seemed inconsistent with the thing itself, and with all the notions we usually entertain of the subtilty of the devil.

Now he is empathizing with the devil--trying to think like the devil would think in order to see what he might mean by it. From this, he concludes that a footprint in the sand would be too inconsistent with the way devils do their work.

... I presently concluded then, that it must be some of the savages of the mainland people--savages--and sees if it over against me, who had wandered out to sea.
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How it came thither I knew not, nor could in the least imagine...perfectly confused and out of myself, I came home to my fortification,...terrified to the last degree.

Sometimes I fancied it must be the devil, and reason joined in with me upon this supposition; for how should any other thing in human shape come into the place? Where was the vessel that brought them? What marks were there of any other footsteps? And how was it possible a man should come there?

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...I presently concluded then,...that it must be some of the savages of the mainland over against me, who had wandered out to sea

Notes:

The footprint makes him feel terror. After being alone for so long, why doesn't he feel happy or excited to see another human being?

His fear leads him to infer that the devil was the source of the print, and makes him think about all of the logically necessary antecedent conditions for a man to have done it (if A, then B).

Now he is empathizing with the devil—trying to think like the devil would think in order to see what he might mean by it. From this, he concludes that a footprint in the sand would be too inconsistent with the way devils do their work.

Then he applies his logic to real people—savages—and sees if it fits the way they would think and
in their canoes, ... loth, perhaps, to have stayed in this desolate island as I would have been to have had them.

... These thoughts took me up many hours, days, nay, I may say, weeks and months.

In the middle of these cogitations, apprehensions, and reflections, it came into my thought one day, that all this might be a mere chimera of my own; ... this foot might be the print of my own foot, when I came on shore from my boat. ... and that if, at last, this was only the print of my own foot, I had played the part of those fools who strive to make stories of spectres and apparitions, and then are frightened at them more than anybody.

But I could not persuade myself fully of this till I should go down to the shore again, and see this print of a foot ... [and] when I came to measure the mark with my own foot, I found my foot not so large by a great deal. ... I went home again, filled with the belief that some man or men had been on shore there; or, in short, that the island was inhabited... [and] I was presently convinced that the seeing the print of a man's foot was not such a strange thing in the island as I imagined. And, but that it was a special providence that I was cast upon the side of the island where the savages never came.

behave, hoping that it means they left the island after a quiet landing.

Trying to understand the footprint as opposed to interpreting it, can go on as long as someone wants to continue thinking about it.

When he finally realizes that his own foot may have accidently been the source of the print, he becomes aware of his fear; he applies his concept "fright" to it, and he is able to understand more closely how his feelings might have distorted his thinking earlier.

This new information about his own fear increases his uncertainty to the point where he doubts his earlier perception and interpretation so much that he needs to obtain new information about the footprint. This new information confirms what he was reasonably certain about before—that other men did visit his island. Fear now under control, he considers what the print means in the context of which side of the island it appears and concludes he is safe after all. Was this much understanding for one footprint worth all the trouble?
APPENDIX D

FACTORS WHICH AFFECT THE AMOUNT OF MEANING THAT IS SHARED

Compare your list with the list of factors suggested below:

1. Participants' situation before and after--
   Too preoccupied with a previous activity to pay attention; wants to get pregnant again soon, so she thinks your messages are for someone else.

2. Unknown symbols, signs, or codes--
   If one has never used the symbol you use for "condom," he can only guess what it means.

3. Confusing/contradictory non-verbal signs--
   Ever listen to someone plead for peace while pounding violently on a table? Why does the fieldworker smile like that, when she says my children are beautiful?

4. Different denotative use of same word--
   "Hot dog" you eat in California, not the animal. Fire you make with wood, not "passion." Family planning = child development; not birth control.

5. Unusual connotative differences for the same word--

   (a) Population Explosion
      To me: Fast X ____ □□□□□□□ Slow
      To you: Fast ____ □□□□□□ X Slow

   (b) Planning
      To me: Good X ____ □□□□□□□ Bad
      To you: Good ____ □□□□□□ X Bad

6. Use of unknown level of abstraction--
   "Your child's lungs have been exposed to 'tubercle bacillus' from unsanitary housing conditions." "Billy ain't sick and we don't have a dirty house!"
7. Undetected shift in level of abstraction--

"When I said women belong in the home, I didn't mean you, Mrs. President; don't get angry."

8. Low importance of subject of discussion--

If a person thinks a small family is unimportant or irrelevant for him, why try to figure out what I mean by "happy family."

9. Uninterpreted feelings which interfere with decoding--
(epecially regarding one-self concept)

One who feels very jealous and protective toward his wife might also be fearful about the consequences of family planning for him.

10. Avoidance, resistance, distortion of meaning--

A man who feels his virility is threatened by vasectomy may interpret the operation as "castration," or "impotence."

11. Interpretation of the context of the communication--

(a) Not enough context known to apply ones concept to a symbol which is used.

"Our rapid rate of growth must be stopped!"

improvement expansion development maturation increase surge etc.

(b) Context of surrounding words and whole message--

"Use contraceptives. Prepare before you have sexual intercourse so you won't get pregnant unless you want to. Today it is possible for you and your husband to plan your family so you have just as many children as you want, when you want them."

(c) Source of the message--
(characteristics)

The above message could be made by your closest neighbor, a doctor, a stranger at the door, a government official, an industrialist, a farmer...
(d) **Relationship** of the participants--

Is your closest neighbor also your closest friend, or long-time enemy? What is the doctor trying to get from me anyway?

(e) **Time and place** (immediate environment)--

At home eating a meal with the radio on, at a meeting at work, or in a clinic after the birth of your first child?

(f) **Perceived social and political situation** (distant environment)--

Is the government stable or likely to change soon? Family planning because they (the government) can't deliver more jobs or enough food? Or out of concern for our children?

12. **Past experience** with the symbol(s) used--

Meaning for symbols is based upon how the person has used the symbols in the past (and how much). To use a symbol in a way he has not seen requires new learning and practice (more experience).

NOTE: Notice how each new example and description increases our understanding of these concepts. Meaning "really" is just the accumulation of more experience with a symbol.
IDEAS TO INCREASE THE LIKELIHOOD THAT MORE COMMON MEANING WILL BE SHARED

1. Spend some time (messages) describing the type of context you want the receiver to have for your messages (e.g., “Now let’s spend some time talking about sex and human reproduction.” Or, “When I use the term ‘family planning’ in this discussion, I will be referring to ways that a family can insure the future education of the children and the future welfare of the whole family.” This is similar to a preface at the beginning of a book, which tells you what the book will (and will not) be about. Puts the audience in the right frame of mind or mental set for messages to come. Prepares them for meaning.

2. Rule out some of the other interpretations you think a certain receiver might make. “I am not talking about scheming or conspiring against your husband when I say ‘plan your family’.”

3. Use examples. An example is one copy of the thing you are talking about. Pick examples that you think may be familiar to your receiver and his everyday experience. Then check to see if they are familiar. For example, “Using birth control pills is like being pregnant except you do not have a baby.”

4. Repeat the message until you are sure the audience has not missed anything.

5. Try a different variation of the same message when you repeat it. Use different words and examples to make the same point.

6. Go as slowly as necessary to keep the receiver from becoming overloaded with too many messages to decode, or interpret, all of the important symbols. But change the pace and format, so he doesn’t get bored.

7. Anticipate your receiver’s situation before he will hear your message. If he is likely to be doing something that will interfere with how he interprets your message, then don’t begin immediately with your most important messages. Use the beginning to change his situation, to get him interested, and learn the context you intend for your message. Provide the receiver with a good transition into your main message, or he may never get there.

8. Ask a question instead of always making statements. The other participant (your receiver) just might have something to say, too. If you are communicating through print or mass media, try to anticipate his questions and then answer them in your message. You might just pose a question that has been bothering him a long time (i.e., is quite important and relevant to him).
APPENDIX E

IDEAS TO INCREASE THE LIKELIHOOD THAT
MORE COMMON MEANING WILL BE SHARED

1. Spend some time (messages) describing the type of context you want the receiver to have for your messages (e.g., "Now let's spend some time talking about sex and human reproduction." Or, "When I use the term 'family planning' in this discussion, I will be referring to ways that a family can insure the future education of the children and the future welfare of the whole family." This is similar to a preface at the beginning of a book, which tells you what the book will (and will not) be about. Puts the audience in the right frame of mind or mental set for messages to come. Prepares them for meaning.

2. Rule out some of the other interpretations that you think a certain receiver might make. "I am not talking about scheming or conspiring against your husband when I say 'plan your family'."

3. Use examples. An example is one copy of the thing you are talking about. Pick examples that you think may be familiar to your receiver and his everyday experience. Then check to see if they are familiar. For example, "Using birth control pills is like being pregnant except you do not have a baby."

4. Repeat the message until you are sure the audience has not missed anything.

5. Try a different variation of the same message when you repeat it. Use different words and examples to make the same point.

6. Go as slowly as necessary to keep the receiver from becoming overloaded with too many messages to decode, or interpret, all of the important symbols. But change the pace and format, so he doesn't get bored.

7. Anticipate your receiver's situation before he will hear your message. If he is likely to be doing something that will interfere with how he interprets your message, then don't begin immediately with your most important messages. Use the beginning to change his situation, to get him interested, and learn the context you intend for your message. Provide the receiver with a good transition into your main message, or he may never get there.

8. Ask a question instead of always making statements. The other participant (your receiver) just might have something to say, too. If you are communicating through print or mass media, try to anticipate his questions and then answer them in your message. You might just pose a question that has been bothering him a long time (i.e., is quite important and relevant to him).
THE EAST-WEST CENTER is a national educational institution established in Hawaii by the U.S. Congress in 1960 to "promote better relations and understanding between the United States and the nations of Asia and the Pacific through cooperative study, training and research."

Each year the East-West Center brings together more than 1,500 men and women from the many nations and cultures of these regions. They work and study together while exchanging ideas and experiences in cooperative programs seeking solutions to important problems of mutual concern to East and West. For each participant from the United States in Center programs, two participants are sought from the more than 60 countries and territories in Asia and the Pacific area.

Five institutes with international, interdisciplinary academic and professional staffs conduct the East-West Center's problem-oriented programs. East-West areas on which Center programs are focused include communication across national barriers, culture and language learning, food systems, population dynamics, and technological adaptation in developmental processes aimed at improving the quality of life. Each year the Center awards a limited number of Open Grants for graduate degree education and innovative research by Senior Fellows in areas not encompassed by institute programs.

The Center is directed by an international Board of Governors of a public, non-profit educational corporation—known as the "Center for Cultural and Technical Interchange Between East and West, Inc."—created by the Hawaii State Legislature in 1975. The United States Congress provides basic funding for Center programs and for the variety of scholarships, fellowships, internships and other awards. Because of the cooperative nature of Center programs, financial support and cost-sharing arrangements are also provided by Asian and Pacific governments, regional agencies, private enterprise and foundations. The Center is situated on land adjacent to and provided by the University of Hawaii, which conducts classes and grants degrees for degree-seeking East-West Center students who also are involved in the Center’s problem-oriented programs.

THE EAST-WEST COMMUNICATION INSTITUTE concentrates on the use of communication in economic and social development and in the sharing of knowledge across cultural barriers. The Institute awards scholarships for graduate study in communication and related disciplines, primarily at the University of Hawaii; conducts a variety of professional development projects for communication workers in specialized fields of economic and social development; invites Fellows and visiting scholars to the Center for study and research in communication and to help design projects; offers Jefferson Fellowships for Asian, Pacific, and U.S. journalists for a semester at the Center and the University of Hawaii; conducts and assists in designing and carrying out research; arranges conferences and seminars relating to significant topics in communication; conducts a world-wide Inventory-Analysis of support, services and country program needs in communication programs; assembles relevant communication materials with emphasis on Asian and Pacific material and makes these available for students, scholars, and practitioners at the Center and elsewhere; and publishes papers, reports, newsletters, and other materials emanating from the above activities.