1970

The sender-linker-receiver communication model

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THIS DISSERTATION HAS BEEN MICROFILMED EXACTLY AS RECEIVED
THE SENDER-LINKER-RECEIVER COMMUNICATION MODEL

by

Jaime Lacasa-Gomar

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The Requirements for the Degree of
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Iowa State University
Ames, Iowa

1970
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INTRODUCTION

Society, term and reality, taken in its broadest meaning, refers to the totality of social relationships (1, p. 674). Social relation or social relationship (the suffix "-ship" adding the idea of state or condition) are equivalents of 'social interaction' (2, p. 285). Social interaction is the social processes when analyzed from the standpoint of the interstimulations and responses of personalities and groups (3, p. 112). Thus communication, stimulations and responses, is essential to society.

Here, using Spencer's verbiage (4, p. 49), the approach to communication is going to be realistic, in its empirical sense, rather than nominalistic. The author is focusing his attention on the permanence of the relations among the component factors of the communication process. He is taking such permanence which constitutes the individuality of the whole process and its importance in society, leaving out that approach that takes communication as a name or a mere label for the process of interaction.

There are many definitions of communication. As may be expected, they vary according to the theoretical and practical frame of reference employed and the differential emphasis placed on certain elements or aspects of the total process. The author, having in mind a comprehensive approach and a cross sectional level of analysis, takes as communication Schramm's definition: "The circulation of knowledge and ideas in human society" (5, p. 1).

Communication is a, perhaps the, fundamental social process since without communication, human groups and societies would not exist. One can hardly make theory or design research in any field of human behavior without
making some assumption about human communication.

For human beings communication is fundamental and vital. It is fundamental insofar as human society, primitive to modern, is founded on man's capacity to transmit knowledge and experience. It is vital since the ability to communicate with others is one of the qualities that improve man's chances of survival while its absence is generally regarded as a serious form of human pathology (6).

The importance of communication in the social process is clear. Communication is the means by which one person shows himself to another and in turn is influenced by him. Communication is the only way, the basis of interaction, the essence of society. A personal way to appreciate the value of communication is to compare what we have learned from direct experience with what we have acquired from others through communication—conversation, printed words, pictures, etc.—and realize that the scope of our own experience is startlingly limited.

But the importance of communication is not confined to the individual. By means of some analogy we can transfer what so far has been said about the individual to a group, organization, institution or society. Communication is the force that enables groups to cohere, "for only through communication may true 'communion' be some day achieved" (7, p. 205). In societies the impersonal relations by means of mass communication perform functions similar to those of cement, mortar, glue or the charges of a magnetic field (8).

Communication, according to Aranguren, "maintains the working relationship between individuals and groups and nations. It engineers change, and therefore whenever there is a pending change or trouble in society,
there is a great deal of communication" (7, p. 203). Therefore we under­
stand easily that for society communication, both internal (within its own
boundaries among its members) and external (with other groups or societies),
is essential. A society lacking adequate communication among its social
strata or its members is bound to fall and disappear. If we picture
society, following the biological school, as a single great animal organism,
we shall understand the folly of trying to govern its behavior from the
brain, according to a pre-established plan, without also taking into account
sensorial communication about surrounding danger and also about new possi­
bilities provided by a changing situation (7, p. 199). On the other hand,
the lack of external communication can lead to a cloistered isolation not
suitable to any social group for a long period of time.

Symbolic interactionism, stressing the importance in the social realm
of 'self' and 'personality', and indicating the process of their formation,
has shown indirectly and directly the social importance of communica­
tion (9). For Mead, the execution of a 'social act' (the constitutive
element of the ongoing process that is society) is a communication process.
If, according to him, mind is internal symbolic interaction, by following
his train of thought one may extend the concept and say that society is
external symbolic communication. Cooley (10) believed that communication
fosters humanness and, consequently, as communication improves, life is
organized humanely in wider and wider circles. Bohlen deduces from man's
capability to abstract and communicate via exchange of symbols with meanings
his capability not only to deal with the reality of a situation but also
with its possibilities and, consequently, to project himself into the
future (11).
Following the conceptualization and way of expression of symbolic interactionism one may say that symbols are cubbyholes where experience is stored. Language-communication is the mechanism to recall, manipulate, interpret, and share symbols—social life.

Besides those reasonings about the relevance of communication that in sociology one may call classical, the author would like to bring modern viewpoint from different scientific areas. Today, contrary to what has been believed ever since Galileo's day, it is held that "the book of nature is written in the language of the theory of information rather than in the language of mathematics" (7, p. 63).

According to modern thinkers the theory of information has been responsible for the invention of radar, the theory of games, and cybernetics (aiming at more or less stable systems for the assimilation of information and at producing auto-modifying, auto-regulating, and auto-correcting responses). On the other hand, modern physiology follows the cybernetic model and treats nervous receptors as recipients of information about environment and different parts of the organism. Psychology is starting to concern itself with an attempt to formulate its own concept of man as an information-gathering, information-processing system. "I am proud to say", says Miller, "that psychologists have not been slow to recognize the obvious fact that a large part of behavior is concerned with sending, transmitting, or receiving messages" (12, p. 46).

Communication in or for development has a special importance.

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1 For the simple working definition of development to be used here see pages 12 and 13.
Development, at least induced development, basically means education, and education includes, necessarily, communication. Too frequently experiences in development show either a lack of success or a result not positively proportional to the amount of personnel, time, and money spent on them. Also, too many times after a process of development some other problems appear that are more difficult to solve than the original ones (13). A question could be raised: Have we paid enough attention to communication to approach the problems created by change and development?

This dissertation has as its general purpose to investigate the process of social communication within the particular framework of development. As for specific objectives, it aims (1) to outline some of the principal aspects, mainly difficulties, that the communicator will encounter and should overcome in his attempt to introduce change for development, (2) to build a workable communication model for those situations in which the shared knowledge between the communicator and the ultimate target audience is very little or close to nil (the origin and basis of many of the problems in communication for development), and finally, (3) to present tentative methodology to prove the model's external validity by empirical research.

The core of this dissertation is the Sender, Linker, Receiver Communication Model (SLR). The author presents an inferential construct or analytic abstraction, derived from known—observable, observed—facts, which does not try to be either a cognitive orientation or a mere description of the communication process in the particular framework of reference. Rather it tries to be a subsumption, a concise explanation, and a heuristic scheme of the aspects and relationships of the communication process in
order to state the logical and social principles to which it conforms. Therefore the Model presented here endeavors to facilitate a better understanding of the flow of communication and its possible obstacles in the framework of change for development. It attempts also to provide a tool for making predictions in this particular framework of reference.

The SLR Model is a distinctive communication theory, first in the way that this binomial is used as a synonym of a description of the process of communication, secondly in that it intends to be a set of propositions designed to cover many aspects of behavior in the communication process, and finally, because it is applied to a specific situation—development.

Typically the existence of a theory allows the generation of theorems, the testing of which tends to confirm the theory in itself. In this very particular case the SLR Model will also be a theorem since it itself is what should be tested to confirm the theory. On the other hand the Model, as theory as well theorem, is built upon the general hypothesis that the actual situation of the underdeveloped countries or marginal segments in their respective societies is mainly a result of the lack of adequate communication.

The Model is functional, avoiding unnecessary descriptions. Thus it will focus on certain particular characteristics of the factors of the communication process and certain relationships between the elements that are necessary in order to understand the Model or that are generated by the Model itself.

The Model does not try to be 'perfect,' since it is impossible to show at once all the possible aspects of the actual process of communication that must be used in the specific case of development.
The Model is an attempt to present an heuristic scheme (14, p. 57) of the elements of the communication process within a given specific framework of reference—the lack of shared knowledge between communicator and receiver. The Model tries to show possible paths to bridge the gap that, as a consequence of the lack of communication, usually lies between the underdeveloped strata and their complementary segments of a society, between the so-called underdeveloped countries and the agencies working toward development therein.

The following two diagrams (15, p. 54) indicate the general procedure followed in this dissertation.

<table>
<thead>
<tr>
<th>Zones</th>
<th>Steps</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Symbolic World</td>
<td></td>
<td>Model</td>
<td>Predictions</td>
<td>Internal Validity</td>
<td></td>
<td>External Validity</td>
</tr>
<tr>
<td>For the Real World</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Methodology</td>
<td>Data</td>
</tr>
<tr>
<td>From the Real World</td>
<td></td>
<td>Knowledge of Reality</td>
<td></td>
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</table>

The above diagram shows the supposed steps taken from the three zones made up from the real and the symbolic worlds and traced from knowledge of reality to the showing of empirical support for the external validity of
the Model. The first step assumes a knowledge of reality. In the second logical step the SLR Model is built and its internal validity supported. Thirdly, some hypotheses are presented regarding the possibilities of the Model. In the fourth step methodology is presented which, together with data, is compared with prediction which in turn produces step five where the external validity of the Model is checked. The scope of this dissertation as visualized in this diagram goes as far as that portion of the fourth step which includes methodology.

The following diagram shows the stages of a possible longitudinal study for perfecting the SLR Communication Model.

<table>
<thead>
<tr>
<th>STAGE I</th>
<th>STAGE II</th>
<th>STAGE III</th>
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</thead>
<tbody>
<tr>
<td><strong>IN THE SYMBOLIC WORLD</strong></td>
<td><strong>MODEL I</strong></td>
<td><strong>MODEL III</strong></td>
</tr>
<tr>
<td><strong>FOR THE REAL WORLD</strong></td>
<td><strong>EVALUATION I</strong></td>
<td><strong>EVALUATION III</strong></td>
</tr>
<tr>
<td><strong>FROM THE REAL WORLD</strong></td>
<td><strong>KNOWLEDGE OF REALITY</strong></td>
<td><strong>DATA</strong></td>
</tr>
<tr>
<td></td>
<td><strong>DATA</strong></td>
<td><strong>DATA</strong></td>
</tr>
</tbody>
</table>

The first stage is a synthetized version of the various steps of the diagram on page 7. In case the original model should need re-evaluation, stage II shows, Model II, a modification of Model I. This
modification, which is based upon the results of checking external validity in stage I, is combined with the corresponding data, and the subsequent evaluation of the new model is given. Stage III shows repetition of this procedure which of course could be repeated again as many times as needed for the continued perfecting of the Model.
THEORETICAL SETTING

The SLR Communication Model as an abstract construct tries to rebuild reality intellectually in order to understand it better (7, p. 224). As a theory the SLR Model is an attempt to explain observed phenomena through a set of verifiable generalizations and hypotheses (7, p. 224). As a piece of inquiry "it is the controlled or directed transformation of a indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole" (16).

In any or in all of these aspects the acceptance of the SLR Model as a sociological 'invention' will be determined in part by its agreement or disagreement with 'inventions' already accepted (17). Consequently this chapter aims to locate within and connect the SLR Model to present related social theory.

For the purpose of illuminating the potential of the SLR Communication Model, this chapter will also present some of the major limiting aspects of the framework of communication for development which will serve as the background against which the SLR Model should be viewed. To this background will frequently be referred to in the analysis of the Model.

Under a positive general heading the SLR Model, theoretically considered, could be located in the realm of social communication and within the area of communication models. From a specific positive approach, the SLR Model is located in and tries to cover the particular area of communication in which the shared knowledge between the Sender of the messages and their Receiver is very little or close to nil. Following Berlo's
conceptualization (18, p. 52) one could, generally speaking, say that the SLR Model presents a frame for a very special type of encoder. The SLR Communication Model could be understood as the practical way of solving the situation in which the Sender (Berlo's source) is unable to choose the right code so as to communicate with the Receiver. The Sender looks for an encoder (the Linker of the SLR Model) able to do the right encoding (essential activity in the communication act) in the specific case of lack of shared knowledge between Sender and Receiver. The SLR Model in the Rileys' approach to mass communication (19) could help in the case in which cross-societal communication would involve communicator and receiver operating out of two different over all social systems. Thus the SLR Model is a communication Model among the communication models, but with a specific endeavor.

As a practical framework of reference the SLR Model has that of development "in fieri" (induced development). In this practical area the SLR Model is closely related to Adoption-Diffusion (20) theory and research. This relationship is such that the SLR Model could be conceived as some sort of instrumental pre-stage directed toward facilitating and increasing awareness, while in each other stage it could be, accordingly, a help in making the presentation of the specific knowledge required by each particular stage easier.

The SLR Model also could be taken as the supplementary tool for the extension toward 'Development' of the knowledge brought by the 'stages theory' on theory and research.

In discussing the theoretical setting of the SLR Model, in addition to the above positive aspects of its connection with present related theory,
it would be suitable to project the model upon the background of specific problems that a communicator is going to encounter within the framework of development. In doing that, its rationale could be evaluated better, while the 'what' and the 'how' of the Model by contrast could be better understood.

Therefore, our concern here is neither to define development nor to evaluate or compile some of its current definitions. We simply try (a) to give some cues so as to recall the complexity of the process of development, (b) to point out its foundation upon change and suggest the problems and difficulties that change faces, and finally (c) to indicate the paramount importance of communication in change and therefore in and for development.

Development is referred to in many different ways. In its most popular current usage it is identified with economic development (21, p. 230), which in turn is defined from a multitude of different standpoints. For instance, for Schumpeter, development "consists primarily in employing existing resources in a different way, in doing new things with them, irrespective of whether these resources increase or not" (22). Arthur Lewis defines development as "the problem of transforming a country from a 5 percent saver into a 15 percent saver," (23, p. 41) while Riggs explains it "as one (process) of transforming a country from an 80 percent farmer (in occupation) into a 15 percent farmer" (23).

If we take Ehrlich's concise description of an underdeveloped country, "a short definition of underdeveloped (country) is 'starving'" (24, p. 22), then development, in a very broad sense, as a process, could be the 'modus operandi' to take a country (region, social segment or stratum) out of starvation.
Perhaps in an approach not so extreme as Ehrlich's, we could take as a simple working definition of development "in fieri", the process aiming to transform a so-called underdeveloped unit (country, region, social group, etc.) into what is commonly understood as a developed one.

The starting point of such a process from a psychological point of view is indicated by McClelland. "What should an agency or a government (do) ... so as to spread economic growth in an underdeveloped country? In a summary form, it should seek (1) to break orientation toward tradition and increase other-directedness, as we have redefined it, (2) to increase "n Achievement", and (3) to provide for a better allocation of existing "n Achievement" resources" (25, p. 393). The first step in this process of development is described by Millikan in this way: "Economic development requires the substitution of a built-in propensity to innovate for the more traditional view that the options are limited to inherited experience" (26, p. 4). In both cases the same thing is clear. The first step is going to require "the transformation of peasants into industrial workers (which) involves a leap from the Neolithic Age into the twentieth century" (27, p. 160).

Professor Lodge says, "The primary step for the introduction of change in the Veraguses of the world is essentially a political one. There must be in place a political receptacle which can receive technical and economic injections of aid and convert them as an engine converts fuel into meaningful energy" (28).

"The magic phrases in Latin America", says Schmidt, "are 'Economic

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1Veraguses inhabitants of Veragua, a rural province in Panama.
Development' and 'Social Justice'. But is it not obvious that the only open sesame to either is 'education'? If there is a key to the future that is most hopeful, magic or otherwise, it is education" (29, p. 111).

For Frei, the controversial progressive Chilean president, "the principal necessity is not bread, clothes or roof. The principal necessity is culture. The communist party doesn't give things. It gives ideas, possibilities. The communist party has never given gifts to those people. The solution of giving is an aspirin. It gets at the symptom, but it doesn't cure. The public already has a lot of morphine. It wants a remedy" (30).

From a practical standpoint Hoffer has this recommendation for the 'developer'. "We must learn how to impart to them the technical, social, and political skills which would enable them to get bread, human dignity, freedom and strength by their own efforts" (27, p. 163).

In reviewing the descriptions of development of the above cited experts, the factor which would appear to be the unifying element is change, either because the present socio-economic-cultural situation lacks the requisite qualities in the desired degree or because radical changes have to be introduced.

What has to be changed? The present socio-economic-cultural status. Turgot points out the starting point of such a change, "the 'cake of custom' resulting from isolation must be broken if any great social changes are to take place" (31, p. 210). This breaking, according to Hertzler, has to be worked out in different fields: (1) in the mechanical, the way of operating in the physical realm, (2) in the symbolic, since ideas and traditions: beliefs, values, attitudes, and goals are involved, (3) in the
organizational, which is used and applied by groups in institutionalized ways, and (4) in the linguistic, since "language and society must change in parallel fashion" (32, p. 36).

Among the difficulties that this badly needed change is going to encounter are its necessary depth and extension and the solid and deep-rooted 'traditional ways'. As far as extension is concerned, the innovator is handicapped, faced with having to change practically all the 'first' elements of the Parson's pattern variables: affectivity-collectivity-orientation, universalism, ascription, and functional diffuseness. As for depth, change to be effective has to be deep. One cannot expect to change the function without changing, at least to some extent, the structure. Finally, with regard to the solid setting of the traditional ways, we must realize that we have to uproot social habits which "tend to acquire a relatively fixed and unreflective character reflecting instinctive reflex responses" (33, p. 115), and are the result of a historical process. "The personality of man is molded by the series of events which are a part of his experience world" (34, p. 291). Besides, if the innovator is realistic, he will have, as Frei indicates, "to work with the gears he has. His problem is to make them mesh. He knows what a good mechanic knows—that this cannot be done with a hammer" (30, p. 157).

On the other hand, no formula or plan can possibly account for the vast variety of human factors present in different countries, regions, or even villages, while different units of adoption have to be contemplated as possible. Recent research on this subject of adoption suggests that this matter deserves more attention. Different kinds of innovation require different kinds of adoption units, individual or group. Some types of
innovation require either portions or totalities of the group, while others require only totalities (35, p. 90). But that is not all. Some studies have brought about enough empirical evidence so as to show that the effectiveness of an innovation depends not only on the success of a process (stages of adoption) but also on the extent to which different communication media is used in each stage. The use of inadequate media for any given stage could have even a negative result (36).

Finally, attention should be paid to the impact (effects) that the innovating plans will have on the values, beliefs, and attitudes of the client group because in the long run these factors are going to be what will determine whether the plans will be successful or not and how long they are going to last.

Above we have seen summarily what is normally understood as development and what is expected to be brought by it. Later the need for change as the cornerstone of development and some indication of its complexity have been shown. Now a question arises. Is there any tool to induce change as a basis for development? Yes, communication!

Underdevelopment, totally considered, is not a result of an absolute lack of knowledge. What happens, according to Lester Frank Ward, is that "society really doesn't receive the real benefit of discoveries and inventions because the knowledge is imperfectly disseminated" (37, p. 83). For Beal, "one of the major problems introducing an improved or new idea into a social system is how (underline is author's) to adequately communicate the idea" (38).

Inductively we may say, if no communication no diffusion, if no diffusion no change, if no change no development, if no development no
That the lack of shared knowledge pointed out before, based mainly on
the literacy-illiteracy dichotomy, is one of the leading reasons for
underdevelopment is expressed very well by Hertzler. "This literate-
illiterate gap is a specially crucial aspect of the state of affairs
prevailing among the great body of underdeveloped peoples in Asia, Africa,
and Latin-America who desire 'modernization'. The illiterate of a given
people are not only functionally and structurally divorced from their own
literate compatriots, but have a woefully truncated understanding and
possibility of participating in the intellectual, scientific-technological,
economic, political, and ideological movements and activities of the
interlocked and shrinking modern world" (32, p. 253).

If this is the problem, we could proffer this as the solution: let
us make people literate, then let us disseminate knowledge. But such a
task is not so simple. First, experience shows that this task is a real
problem in itself. Second, the difference in language between innovator
and host group is acknowledged as a definite handicap in communication.

Language is not only the medium of communication, but also the main
source of limitation for such communication. The diversity of languages
is the first handicap with which the change agent must cope. South America
has 558 major languages. In Africa 800 languages are said to be spoken.
In Abyssinia alone there are some 70. Asia has hundreds and hundreds of
languages. In Burma 18 million speak 126 languages. Indonesia has 200
provincial languages. The 1951 Indian census reported 845 languages and
dialects (32, pp. 209-210). The second handicap is that one can express
only those attitudes or portions and kinds of potential thoughts that the
linguistic medium permits. Some languages, as a result of a certain environment, offer in themselves a particular difficulty to 'modernization' by their limitation in vocabulary and structure. An example of vocabulary limitation is brought by Hertzler (39, pp. 44-45). Arabic 25 years ago, with some 6,000 words referring to camel--color, bodily structure, sex, age, etc.--had only one single word "tomobile" covering all makes and models of mechanized transportation vehicles. According to Mario Pei (40, p. 203), "forgiveness" had to be translated into the Misketo Indian language of Nicaragua by "Taking-a-man's-fault-out-of-our-hearts".

The suggestion of a translator to solve the problem is not solution. A good translation, even in ordinary situations when the languages offer equivalent concepts, is very difficult (32, p. 126), let alone in a case where one is endeavoring to induce change for development which in many instances is not going to have such conceptual equivalence. The reason for such difficulty is "because language provides its own specific and unique tools of expression and analysis, and to a great extent these determine for the speakers the problems they see and the solution they find" (32, p. 128). "The difficulties encountered in the attempts to translate from one language into another are much more fundamental than they appear to be at first glance. The key problem of translation arises from the fact that each language is a complex unique system, whose structural and stylistic elements cannot be reproduced with complete exactitude of form, meaning and intent in any other language" (32).

"Each language is a unique social-action pattern, and reveals a parallel unique social and cultural world. Language is a supreme example of Durkheim's 'Social representation'" (41, p. 14).
It is not meant to imply with the above remarks that the translator is useless or that a good communication by translation is absolutely impossible. The author tries to stress the advantage and at times the necessity of going further and of having a cultural intermediator instead of a mere linguistic intermediator alone.
COMMUNICATION MODELS

There are many communication models. Aristotle, referring to the modes of persuasion in his *Rhetoric* (I, 2) (42, p. 595), trisected the act of communication into speaker, audience, and speech. Since then these three elements and their interrelationships have become the points of departure for the many ways of analyzing the communication process. Most of our contemporary communication models have been remotely and basically inspired by Aristotle's division of the communication act or of some of its interpretations. There are models of communication developed by Berlo (18, p. 52), Westley and MacLean (43), Shannon and Weaver (44, p. 5), Schramm (45), Fearing (46), Beal, Klonglan, Bohlen and Yarbrough (47), Hovland (48), Riley and Riley (19), to name some.

These models differ from each other. Practically none of them are competitive in the same field or aspect of communication since each of them has its own particular approach. They cannot be said to be right or wrong, true or false, even though some of them can be found more useful than others for a specific approach to the communication process or its effects, and perhaps some of them are closer to the most current knowledge about communication.

In the preceding chapter the location of the SLR Model within and in connection with related theory was shown. Also there was presented its possible utility. This chapter, as a continuation of the former, aims to bring some theoretical evidence of the newness and timeliness of the SLR Communication Model. Here the author presents a review of some of the cardinal models related most directly to the framework of development and
contrasts with them the basis for the new model: lack of shared knowledge between communicator and audience, and the extreme complexity of the receiver, usually peasant, illiterate, socially isolated, etc.

The SMCR Model

The communication model developed by Berlo is commonly referred to as the SMCR (Sender-Message-Channel-Receiver) Model. Berlo conceives of communication as being coincident, at least partially, with persuasion. For Berlo "one cannot communicate at all without some attempt to persuade in one way or another" (18, p. 9). Berlo envisages communication situations as differing widely from each other. Nevertheless, all communication situations have certain things in common. It is this common denominator which provides Berlo with the basis for building a model of the communication process. The main aim of Berlo's Model is to provide a mental framework for thinking about communication. Consequently it is Berlo's purpose in constructing the SMCR Model to organize important concepts related to the communication process in a meaningful manner. On the other hand Berlo doesn't claim he is presenting any different construct from other communication models. As a matter of fact, the SMCR Model is similar to others. He presents it "only because people have found it a useful scheme for talking about communication in many different communication situations" (18, p. 30).

Berlo's Model contains six elements: (1) communication source, (2) encoder, (3) message, (4) channel, (5) decoder, and (6) communication receiver. When the communication is person-to-person, the six elements can be combined into only four elements: (1) source (source and encoder),
(2) message, (3) channel, (4) receiver (decoder and receiver). From this specific case come the initials SMCR by which Berlo's communication model is usually known.

In Berlo's Model the Sender is the origin of the communication and the person or group who attempts communication. The expression of the purpose of the communicator is the message. The purpose is translated into symbols by the encoder. The encoding in person-to-person communication is performed by the motor skills of the source, e.g. hand-writing, vocal cords-speaking. The channel is the medium through which the message is carried from the source to the Receiver of the communication. The function of the decoder is contrary to that of the encoder. Finally, the Receiver is the recipient of the communication.

Hovland's Model

This model is an attempt to present an outline of some of the major factors in attitude change, and to show the mechanism by which a communication achieves attitude change. The orientation of Hovland's Model is toward the individual and socio-psychological aspects of communication. Hovland, after having noticed that the categories of observable communication stimuli are practically inexhaustive, and that there are many types of stimulus variables which affect attitude change, selects specific categories which are related to attitude change and can be studied separately.

A well known concept in social behaviorism is pointed out in the model. It is a fact that all the factors involved in attitude change are dependent on how they are perceived by the recipient of the communication.

To Hovland, "communication is the process whereby an individual
(communicator) transmits stimuli (usually verbal) to modify behavior of other individuals" (49, pp. 287-288).

Hovland's Model tries to describe and define factors which are related to attitude change produced by social communication. The model has four main areas: (1) observable communication stimuli, (2) predispositional factors, (3) internal mediating processes, and (4) observable communication effects.

The observable communication stimuli are identifiable in external events which include what is said, and intentional and unintentional cues which influence a member of the audience—who is saying it and why. For Hovland, the observable communication stimuli are in a communication situation which has categories of sub-factors like (a) content characteristics: the topic, the appeals and arguments, the stylistic features such as grammar, etc., (b) communicator characteristics: the role, affiliations and intentions of the communicator, (c) media characteristics: type of interaction, type of media, (d) situation characteristics: the social situation, pleasant or unpleasant outside influence.

The predispositional factors are used to account for individual differences in observable effects when all communication stimuli are held constant.

The internal mediating processes are used to account for differential effects of stimuli on a given person or group of persons.

The observable communication effects are all perceivable changes in the recipient's verbal or non-verbal behavior.

The end-points of the communication process are the two large areas of observable stimuli and observable effects. They are the "antecedent"
and "consequent" events which are observable (49, p. 3).

Finally, for Hovland, persuability is a predispositional factor reflecting an individual's susceptibility to influence from many different sources, on a wide variety of topics, irrespective of the media employed (49, p. 225).

The Westley-MacLean Model

This is basically a model for communication research (43, p. 55). In the mind of the authors this communication model, while being a conceptual model of the total process of communication (43, p. 64), may help to put existing findings in order (43, p. 56). The model "assumes that a minimum of roles and processes are needed in any general theory of communication and attempts to isolate and tentatively define them" (43, p. 64).

The summation of this model will be done here, as it is done by the authors (43, p. 57), relying mainly on a series of four diagrams which illustrate it very well.

```
  X1 -- X1        X          B
  X2 -- X2        X          |
  X3 -- X3        X          |
  ....            X          |
  X∞ -- X∞        X          |
```

This diagram (43, p. 57) represents the sensory field of a receiver (B) \(X_1 \ldots X_\infty\) are objects of orientation transmitted directly to him in abstracted form \((x_1 \ldots x_3)\) after a process of selection from among all Xs.

Such transmission is done after B's process of selection from among all Xs. This selection process is based at least partially on the needs
and problems of B. The transmission of the objects of orientation is not restricted to one sense. This transmission can be done, even simultaneously, in more than one sense. In the diagram it is represented by $x_3$ and $x_{3m'}$.

In the sensory field there could be a confusing infinity of potential Xs which, from the standpoint of B (the receiver), could include some As (communicator). B knows (learned from previous experiences) that to maximize satisfaction of his needs he must orient himself toward Xs selectively, and at times, mainly in the presence of an A communicator simultaneously toward two or more, may be the only Xs or Xs and As. This shows that the orientation and selectivity is not done alone on the basis of its intrinsic capacity but also with respect to the possible relationship between A and Xs.

\[ \begin{array}{c}
X_1 \\
X_2 \\
X_3 \\
X_4 \\
\vdots \\
X_{\infty}
\end{array} \xrightarrow{X_{\text{A}}} \begin{array}{c}
X_{1b} \\
X_{1} \\
X_{2} \\
X_{3} \\
X_{3m}
\end{array} \xrightarrow{X_{\text{B}}} B \]

In the above diagram (43, p. 58), communicator (A) is present as something differentiated from the objects of orientation (Xs). Now some of the Xs are related and abstracted by communicator A and transmitted as a message ($x^1$) to B, who may or may not have part or all of the Xs in his own sensory field ($x_{1b}$).

B is capable of receiving and acting upon information received from his own sensory field, transmitted by objects of orientation, in this case
Xs and A. B's activity is addressed mainly to maintain an adequate orientation toward his immediate environment. Xs and As are relevant to such orientation inasmuch as they lie in his sensory field. Now a question arises. What about the As and Xs lying outside this immediate sensory field? There is a need for another role which the authors call C.

C is extending B's environment (43, p. 59). C can select Xs arbitrarily but generally his selection will have to be based upon B's needs and wants known at least in part through the feedback (fbc). According to the authors "C is conceived of as one who can (1) select abstractions of object X appropriate to B's need, satisfaction, or problem solutions, (2) transform them into some form of symbol containing meanings shared with B, and finally (3) transmit such symbols by means of some channel or medium to B" (43, p. 58).
A selects Xs and transmits messages to C (43, p. 60). C on his part makes his own selection from both messages sent to him by A (\(x^1\)) and Xs in his own sensory field (\(x^3c, x^4\)), which may or may not be in A's sensory field. From this selection, he sends messages to B (\(x^{11}\)). B sends feedback to C (fBC) and to A (fBA), while C sends his own to A. If A has to be true to his communicator's role and C to his, B's agent role, both have to utilize their experience in influencing C and B respectively, manifested in the feedbacks sent to them, (fCA) and (fBA) to A and (fBC) to C.

Feedback is a crucial concept to the model. "Either purposely or non-purposely B transmits feedback (fBA) to A" (43, p. 58). If A is to utilize his experience in influencing B, he must have information about any changes that occurred in B mainly about those which occurred under the influence of his communication. The same must happen with C if he has to continue acting as B's agent.

The Riley-Riley Model

This model is an attempt to see the communication process in its social setting. According to the authors, their work "sets forth the development of a sociological view of mass communication as the most pressing need facing students in this field" (19, p. 538).

The so-called traditional research has worked upon the concept of communication as a message moving from a communicator to a receiver. If the receiver is a mass of people, then it is conceived of as a mass of unrelated receivers of the message.

The Rileys' Model is conceived as a sociological extension of various concepts and processes that make up the traditional research. The Rileys'
sociological extension says that the individual receiver has a relationship with his social environment in motivations, perceptions, and interests. Consequently the receiver's responses to a message are not independent with respect to the others' reaction. Rather, his responses and perceptions form part of a pattern of interactions among those members in his sociological setting. On the other hand, the messages sent by the communicator are usually in accordance, at least to some extent, with the expectation and actions of his primary and secondary reference systems and affected by the receiver's past reaction (feedback) to messages and the communicator's perception and of the receiver's probable future responses.

For the Rileys, from a sociological viewpoint, one can and should use sociological concepts such as reference group, primary group, and larger social structure to explain the nature and effects of mass communication.

The Rileys' Model suggests some important aspects of the communication process: (a) "communicator and recipient are now seen as interdependent" (19, p. 569), (b) "with rare exceptions this relationship does not consist of a single communication which potentially elicits only a single reply" (19, p. 569). Messages are sent by C's groups (communicator) to individuals in R's group (receivers) which in turn reply, (c) "each of these individuals has a definite position in the social structure" (19).

Summarizing it may be said that the Rileys' Model, by using the concept of reference groups, illustrates that both communicator and receiver act in accordance with their setting groups which in turn help to determine the individual's attitudes, perceptions, and interests which finally influence the communication process greatly.
The Two-Steps Theory

The model in the mind of the pioneers in diffusion research seems to have consisted of: "(1) the all-powerful media, able to impress ideas on defenseless minds; and (2) the atomized mass audience, connected to the mass media alone" (19). Thus it was believed that the communication of ideas and the concomitant influence involved was a direct one from the media to the isolated people. But a major turning point in the understanding and conceptualization of the diffusion process was made in 1940. Lazarsfeld, Berelson, and Gaudet arrived at the following hypothesis: "ideas often flow from radio and print to opinion leaders and from these to the less active sections of the population" (50, p. 151). This hypothesis has been called "two-step flow of communication." It proposes that influence moves from the media to opinion leaders and from these to their near associates.

A study on the diffusion of hybrid seed corn in two Iowa communities provided some further evidence for the steps theory, and at the same time started undermining it as the "two-step theory." This seed study concluded that early adopters influence the later adopters, and that the early adopters were much influenced by salesmen, farm bulletins, and more frequent trips to the city. Thus the study helped the steps theory but started suggesting the possibility of more than "two steps" (36, pp. 166-168).

Further research has brought enough evidence to make it possible to negate the notion that the way of the communication from mass media to people has only one intermediary. In most instances the process includes a number of "inbetweens" as steps in the conveyance of the innovating message to the receiver (51).
Conclusions

From the reading of the preceding and other communication models not brought here because of their remoteness from our aim, one can conclude that, systematically considered, all of them suppose shared knowledge between the communicator and the receiver of the communication, at least in such amount so as not to make of the lack of shared knowledge a main obstacle to communication. For instance, the Rileys presume that cross-societal communication would involve a communicator and receiver operating out of two different overall social systems, and they do not go farther. For Westley-MacLean shared meaning associated with symbols is a crucial characteristic of the communication process. For Hovland "a successful communication is one in which these various stimuli (arguments and appeals) are both adapted to the level of verbal skill of the individual and capable of stimulating his motives so as to foster acceptance of the recommended opinion" (49, p. 12). On the other hand, Berlo says "when the source chooses a code for his message, he must choose one which is known to his receiver" (18, p. 52).

On the other hand, none of them is aimed, at least directly, at the solving of the problem of bridging the gap created by lack of shared knowledge between the poles of the communication process: sender and receiver. Morphologically considered, only two of them, Westley-MacLean and the Two-Steps Theory, bring an element, the "C" element and the opinion leader, that could generally, but not specifically, let alone individually, be classified with the Linker of the SLR Communication Model to be explained later. But the opinion leader, compared with the Linker, is a too open and unspecified element, while the "C" element has a very specified but
shallower role of the Linker of the SLR Model.

According to Westley-MacLean, "Cs (Channel roles) often confounded with As serve as the agents of Bs in selecting and transmitting non-purposively the information Bs require, especially when the information is beyond the immediate reach of B" (52).
THE SLR COMMUNICATION MODEL

Communication, *positis ponendis*, flows by means of the media, upon the so-called vehicles, and through the bridge of shared knowledge between sender and receiver. The following three diagrams will illustrate this and show the possible cases.

The above diagram shows the optimum case in an act of communication. The width of the shared knowledge $w$ equals the factual capability of the Sender $S$ to emit messages, $AB$, and that of the Receiver $R$ to receive them, $CD$.

This diagram represents an average case of an act of communication. The width of the shared knowledge $w$ is narrower than the Sender's factual capability of emitting messages, $AB$, and that of the Receiver's to receive them, $CD$. In the communication act and its process, some restrictions have to be taken into account. Nevertheless, the bridge of shared knowledge has enough width to allow the flow of relevant communication from the Sender.
to the Receiver. On the other hand, both Sender and Receiver are usually aware of the presence of such a handicap and some precautions are taken to give to the act of communication the ability to cope with possible situational errors.

This diagram represents the apparent (not real) situation of an act of communication in the framework of development. The width of the shared knowledge $w$ between the Sender and the Receiver is taken as narrower than that of a common case. Nevertheless, $w$ is taken as something real and yet something broad enough to allow the flow of meaningful communication. It is believed that a bridge of shared knowledge lies between the Sender and the Receiver, and that such a bridge has enough strength to allow real communication. But reality and experience show that the case is quite different.

The diagram on the following page is a representation of the real situation of the Sender facing the Receiver in an act of communication within the framework of development. The width of the shared knowledge is nil or close to zero. So, in this case, the message $m$ which sent by the Sender and which is supposed to influence the Receiver through the shared knowledge, never will come across to the Receiver.

By analogy with an optical mirage, the author calls the preceding
situation a "Social Mirage", due to the mere appearance of "Social Presence" of the Receiver, who, as a matter of fact, is not socially present. As is known, in an optical mirage something appears to be present but is not. In our case, the Receiver, individual or group, appears to be socially present, but in spite of his physical presence, 'socially' he is not there.

Weber (53, p. 118) defines as social relation the presence of a probability that social action will occur, and adds as a defining criterion, "it is essential that there should be at least a minimum of mutual orientation (the underlining is this author's) of the action of each to that of the others". The definition is clear and the criterion is well founded since we are talking about the essential condition for reciprocity, in turn the basis of interaction.

One may assume that "Social Presence" is that minimum of mutual orientation essential for social relation according to Weber, and, following Weber's train of thought, one may redefine social relation, putting together his definition and his essential criterion. Thus social relation is the
presence of a probability that social action will occur, based upon the fulfillment of the condition of social presence.

By analogy we will call "Social Absence" the lack of that minimum of mutual orientation, and "Social Mirage" the appearance of fulfillment of the condition of social presence, that minimum of mutual orientation. Social mirage is brought about by the physical presence of the Receiver plus the Sender's incapability to evaluate the social situation due to his lack of knowledge about the Receiver. Social mirage for the Receiver is mainly due to a lack of shared knowledge with the Sender. For both Sender and Receiver, the basis for social mirage is the lack of shared knowledge.

It should be realized that social mirage in communication for development is more frequent than usually is thought. In such a case the Sender many times is an outsider to the environmental culture of the client group, and also he is often a stranger, at least to some extent, to such a culture. The Receiver practically always has some shared knowledge with the client group taken as society, country, etc., mainly through the higher social strata of the client group. But the real Receiver in development usually is going to be some marginal individual or group who, in turn, is already in some way alien to the complementary part of that society. The following diagram illustrates this point.
In the preceding diagram ABCD represents the shared knowledge between the Sender and the Receiver taken as society, country, etc. The real Receiver in development is HKLM, a marginal group within such a society with some specific problem in communication, even with its complementary elements in the same society. So, even though the Sender has something in common with the client group as a whole, he has nothing in common with the real Receiver.

The diagram on page 32 suggested a set of hypothetical solutions to our problem, communication in the case that the shared knowledge between Sender and Receiver is insignificant or nil. The three possible solutions are indicated and explained in the following diagrams.

In the solution shown by this diagram, the Sender lowers his position in the social plane so as to have some shared knowledge with the Receiver. Due to the downward movement of $S$, both $S$ and $R$ have some shared knowledge represented by ABCD. Now communication $c$ is possible.

At times this solution will be possible and even desirable. As a general judgment of it, we may say that with this solution the Sender loses in his total capability to communicate and gains in his situational
capability to do so, while the messages lose in meaningfulness. If the Sender in his pursuit for shared knowledge descends too much toward the Receiver, he reduces his social presence to a mere physical presence. If the Sender tries to become an equal among the Receivers, even though in other spheres such a gesture may have some value, as testimony of his ideals, in our case, development, it is irrelevant. The Sender, lowering his social presence to mere physical presence, limits and reduces the meaningfulness and content of the messages which must contain these essential qualities for development.

The next two diagrams try to illustrate some of the preceding concepts.

This diagram represents a static situation: (1) shows the maximum level of content of the message, (2) shows the absolute power of the Sender to communicate, and (3) indicates the relative power of the Sender to communicate.

The next diagram on the following page shows the differential changes when the Sender lowers himself in the social plane toward the Receiver in order to obtain shared knowledge: (1) indicates the maximum level of
content of the message, (2) shows the amount of loss of content, (3) indicates the extent of the Sender's lowering himself toward the Receiver, (4) marks the total capability of the Receiver to receive, and (5) shows the situational capability of the Receiver to receive.

In the case shown by the diagram below, the Sender remains in his position while the Receiver rises in the social plane. This upward movement has some advantages with respect to the case expressed in the diagram on page 36.
This case in itself represents the general aim of development and communication for development: to help the Receiver rise on the social plane. The problem here is that such movement is not going to be possible under many circumstances, at least to the extent required for mass development. Perhaps the best way to get the most of this situation is to pick out the members of the client group which are capable of such upward movement, at least to some extent, and to select and train them to serve as "Linkers".

The more the Receiver is capable of such upward movement, the more the situational capability of the Sender and the meaningfulness of the messages are going to increase.

Unfortunately for the communicator, this case is not going to present itself many times. Even though it should happen, the communicator, for development, should not pay too much attention to these mobile receivers unless, as has been said, to select them as possible Linkers, first, because, as defined, these mobile Receivers are able to rise by themselves, and secondly, because they are not truly representatives of the totality of the sub-culture which must be developed in order to raise society as a whole.

If we discard the solutions presented in diagrams on pages 36 and 38, either because of external difficulties (e.g. incapability of the Sender to lower his position, excessive length of such a lowering or the incapability of the Receiver to move upward) or because of internal difficulties (e.g. the rich content of the messages that need to be communicated, etc.), the remaining solution is to interpose between the Sender and the Receiver some sort of logical transformer bridge. This bridge in the SLR Model is
called the Linker. The diagram below will illustrate it.

In this diagram, L (Linker) between S (Sender) and R (Receiver) serves as the communication bridge.

Now through the two shared knowledge zones (ABCD between the Sender and the Linker, and HIJK between the Linker and the Receiver), with some changes and adjustments in direction and shape worked out by the Linker, the Sender's communication will come across to the Receiver as shown in the following diagram.
We already have the integral elements - Sender, Linker, and Receiver - of the SLR Communication Model for the case in which the shared knowledge between the Sender and Receiver is insignificant or nil. The SLR Model is a combination of the three preceding hypothetical solutions expressed in the diagrams on pages 36, 38 and 40. The diagram on page 43 shows the Model.

General Description of the SLR Model

As has been said repeatedly, the SLR Communication Model is specifically directed toward the study and hypothetical solution of some of the problems in communication within the framework of development. It has as a general reference background, South America from which the author brings years of personal experience and where he plans to apply it.

The model consists of Sender, Linker, and Receiver as integral elements, and is completed by Substantive messages, Auxiliary messages, and Feedbacks, both spontaneous and extracted, as constitutive elements.

As the diagram shows (Diagram 1, p. 43) the integral elements are located on different levels with the Sender being highest, the Linker in the middle, and the Receiver lowest. The purpose of such differential location is (1) to illustrate in some general way the lack of shared knowledge between the Sender and the Receiver, (2) to show the necessity and importance of the Linker to bridge this gap, and (3) to present a visualization to some extent of some possible problems in the act of communication. Among these possible problems to be considered are the easiness for a given Sender or Linker to send a substantive message without any sort of control, and the difficulty of directing such a message once
Diagram 1. The SLR Communication Model
$S_{sl}$ : Substantive Message, Sender-Linker

$S_{lr}$ : Substantive Message, Linker-Receiver

$A_1, A_{ii}, A_{iii}$ : Auxiliary Messages

$F_1, F_{ii}, F_{iii}$ : Feedbacks
it starts 'going down.' On the other hand, it is clearly indicated and easily understood that upward moving feedbacks are basically more difficult to send while easier to control.

The SLR Model is divided in five zones: Sender, Communication system I, Linker, Communication system II, and Receiver. This division is done, first of all, to express better the predominant importance of roles rather than that of basic characteristics, personalities or individualities. Secondly, the zoning allows the internal transpositions considered as possibilities by the Model (the lowering of the Sender to the Linker zone and the possibility of the Receiver to raise himself to the same linking zone). The Linker's zone could be covered, as far as role is concerned, either by the Sender, when his messages are able to come across to the Receiver, or by the Receiver, when he is capable of meeting the Sender by finding his messages. Thirdly, the division into zones is made to express the desirability of establishing boundaries for the roles of the integral elements of the Model, mainly for that of the Sender. Finally, the SLR Model is divided into zones to show the complexity of the Linker's role since the linking zone has two sub-zones—Linker as intermediary Sender and Linker as intermediary Receiver.

Description of the Element of the SLR Model

Integral elements

The Sender The Sender in the SLR Model is the source and origin of validated empirical knowledge, and through it, of the act of process of

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1As has been said before, given the functional approach of the Model to the communication process, the author assumes basic knowledge of terminology and theory of communication, so here only peculiarities of this specific model are elaborated upon.
communication. This factor-element has been labeled in mass communication literature with different names: "source" (54), "communicator" (55), "who says it" (56), "innovator" (within the framework of adoption-diffusion) (57), "who says what" (58), etc. This author chose the name Sender to be closer to the idea of the one who conveys the communication and to show, indirectly, its essential connection with the messages.

In the SLR Model, the great probability of a complex Sender, that is to say, a Sender comprised of a plurality of different elements, is taken into account. The complexity comes from the fact that no individual as an individual or small agency alone will attempt the task of development. In development, the work to be done has many facets and many difficulties springing from very different fields of knowledge.

The Sender, in practice, will be at least an agency. In most of the cases it will be the combination of agencies, national and foreign or international, and the national government.

For a long time it was assumed, both by anthropologists and by their colleagues working in development in such professional fields as health, nutrition, agriculture, and education, that the entire problem of change for development was rooted in the cultural practices of the client group, and that a thorough understanding of these practices of the client group would be sufficient for the design of successful developmental programs in any field. But experience has shown that this is not true in all programs of directed change (59). At least two socio-cultural systems are involved, that of the client group and that of the innovating organization. At this point let us consider what could be the main obstacle for the complex Sender—the psychological problem.
The emotional state of the Sender's components often will be due to quite different reasons. For instance, their conscious or unconscious quest for ego-gratification can be the root of trouble. Professional recognition from superiors and colleagues, and professional esteem are most likely to come with the success in carrying out an assignment. Thus reluctant peasants, local organizations or the host society refusing their proffered hand are denying the components of the Sender of the assurance of professional competence they badly want. So the Sender senses failure. In addition the Sender may displace anger away from himself and project it upon the Receiver. The conclusion too often is some kind of negative predisposition of the Sender toward the Receiver, and the subsequent internal friction and restlessness which could badly handicap the function of the Sender.

It could be very useful once in a while to evaluate the implicit attitude of the Sender's components toward the Receiver. If the exam should show traces of negative attitude, it would be convenient to remove the components of the Sender affected with negative attitudes, at least from the situation of direct contact with the Receiver. The same could be said with respect to the Linker and of the Linker with respect to the Receiver. It must be taken into account that in our situation, change for development, the "given messages" are going to have the same value as the "messages given off." The latter are manifested ordinarily by mere attitudes toward the Receiver which, in the long run, cannot be kept hidden.

As a consequence, the Sender should not work under any sort of success-pressure. At the same time, the Sender has to avoid any sort of friction
among its components. Such friction can easily be present, given the psychological problem and the diversity of people working together.

With the local government, on any level, as a component of the Sender we face a dilemma. Without government's participation, at least on the regional or national level, a serious enterprise of development, given the extension and depth generally needed in such endeavors, is impossible. On the other hand, we can be sure that its intervention will bring about new sources of difficulties for the already complex Sender.

Government's relation to communication can be classified under four headings (27). In actual operations, the activities of governments are seldom confined to one of these classifications. Most of such activities in the field of communication will fall into two or more, but for the purposes of presenting the sources of possible problems here, the government activities are classified into four groups as follows: (1) government as a restrictive agency, (2) government as a regulating agency, (3) government as a facilitating agency, and (4) government as a participating agency.

How much any or some of these aforementioned governmental activities can help in the task of communication for development should be evaluated on the spot. It should be recommended that before counting too much on the government as a possible component of the Sender for the task of development, some consideration should be given to (1) possible changes of government, (2) possible changes within the government, (3) usual fondness on the part of government of brilliant-apparent-quick success rather than of long processes, and (4) the possible danger for the continuity of the work springing from the fact of being or acting too close to one government.
The Linker

The Linker is the main differentiating element of the SLR Communication Model with respect to other models. In the SLR Model the Linker ranks first in difficulty and second in importance, the first in importance being the Sender. In a very general way, and functionally considered, the Linker can be taken as a concrete application of man's peculiar gift as a component of a communication system as described by Miller in *The Psychology of Communication*, "his ability to discover new ways to transform or to recode the information which he receives" (12, p. 218).

The status of the Linker in the Model, that is to say, its relative position with respect to the Sender and the Receiver is the location between them so as to serve as a bridge to the flow of communication. Its presence has to shorten the cultural, economic, and social differences between the poles of the communication act. This shortening is very important in order to avoid some of the problems of imitation. The Sender, in our framework of reference, development, usually is too far above economically and socially, and is too different in his background experiences to serve as an object of identification for the Receiver.

Of course the Linker always has to be between the Sender and the Receiver. He should show a clear and understandable image of the Sender to the Receiver. The presented image of the Sender should be positive, showing him not as a conqueror or exploiter, not even as a foreigner, but rather as "one among equals" inasmuch as possible. To fulfill such a task it would help very much if the Linker tried to be a continuous, positive "given off message".
The Linker's role, that is to say, the Linker's expected function will be to transform the Substantive messages $S_{sl}$ into $S_{sr}$, to create the Auxiliary messages $A_{ii}$, and to facilitate Feedbacks $F_i$ and $F_{iii}$.

The function of the Linker in the SLR Communication Model is divided into two sub-roles called intermediary Sender and intermediary Receiver. These two sub-roles constitute the totality of the function of the Linker since this element is going to be a Receiver facing the Sender, and a Sender facing the Receiver.

Compiling status and role the Linker could be defined as the element of the Model located between Sender and Receiver which is in charge of the transformation of messages. Such transformation is made possible by its common learned knowledge with the Sender and its common shared experiences with the Receiver.

In the long run the Linker can be taken and studied as what we expect to be the result of the communication process in/for development since it is the personified shared knowledge.

The specific concept and reality of the Linker, something new in a communication model, are deeper in meaning than Berlo's messenger and specifically different from the "C" concept of Westley-MacLean's Model.

The Linker taken as a role is a more complicated and more difficult element of the Model than the Linker takes as a status. In the linking element of the Model, the Linker, we have to have some aspects of the polar
elements, that is some aspects of the Sender and some of the Receiver together, coupled with a capability of transforming or re-creating the messages as required so that the connotative meaning be equal to the denotative meaning of the messages.

The diagram on page 37 and the first diagram on page 38 illustrated some basic concepts. We saw how the possible movements of the Sender descending toward the Receiver, and of the Receiver ascending toward the Sender could create or increase shared knowledge. But such movements bring loss of magnitude in the content of the communication, and consequently limit their own utility.

For far the Linker has been analyzed as the zone between the Sender and the Receiver, and also as the role springing from such location. Now the author presents the way in which the different possible position-levels of the Linker in its intermediate zone can influence the communication process.

The following diagrams illustrate the changes of position-levels and movements of the Linker and their consequences.

![Diagram](image)

This diagram helps to review and expand some of the concepts pointed out before that are going to be used here. The Sender and the Receiver are fixed in their positions. The Linker is fixed too. The Linker's shared
knowledges, SL with the Sender represented here by b and LR with the Receiver represented here by c, have the same proportions, so \( SL = LR \).

In the preceding diagram and in the following ones '0' and '00' represent the ceiling of a communication. That ceiling in '0' stands for the maximum possible magnitude of the content of a message (what the message says) conceived in its originator (the Sender).

In '00' the ceiling stands for the maximum possible magnitude of the content of a message (what of the message can be perceived) but now conceived in its recipient (the Receiver).

(a) indicates the amount of loss in magnitude of content due here to the limitation on the emissive faculty of the Sender given the limited shared knowledge SL or (b). This SL or (b) is smaller than (e), the total capability of the Sender to communicate.\(^1\) The lack of shared knowledge in this diagram is expressed by the different levels of the Sender and the Linker, and of the Linker and the Receiver.

(b) shows the extent of the shared knowledge between the Sender and the Linker (SL). Its extent on the part of the Sender expresses its situational capability to communicate,\(^2\) while on the part of the Linker, here recipient, it expresses situational capability to receive. In the diagram it appears clearly that \( (a) + (b) = (e) \):

(a) loss in magnitude (emissive) of content,

\(^1\)The total capability of the Sender to communicate is all the knowledge that the Sender is able to communicate. In the diagram it is represented by (e).

\(^2\)The situational capability of the Sender to communicate is all the knowledge that the communicator is able to communicate in a specific situation. In the diagram it is represented by (b).
(b) shared knowledge SL,
(e) total capability to communicate,
and consequently that (e) - (b) = (a). Since (e), the total capability of the Sender to communicate is a constant, the more shared knowledge SL—the bigger (b)—the less the loss in magnitude of content, and vice versa. This means better possibilities for the message $S_{sl}$ and consequently for communication.

(c) materializes the extension of the shared knowledge LR (between the Linker and the Receiver). Its magnitude on the part of the Linker expresses its situational capability to communicate, as sub-sender, while on the part of the Receiver it expresses situational capability to receive.

In the diagram it clearly appears that (c) + (d) = (f):

(c) shared knowledge LR,
(d) loss in magnitude (receptive) of content,
(f) absolute power to receive,
and consequently (f) - (c) = (d). Since (f) is a constant, the more shared knowledge LR—the bigger (c)—the less the loss in magnitude of content for the Receiver and vice versa. This means better possibilities for the $S_{lr}$ message and consequently for communication.

(d) visualizes the amount of loss in receptive magnitude of content on the part of the Receiver in a way which is similar to that expressed in (a).

As a corollary from (b) and (c) flows that the more shared knowledge SL and LR the better communication. Consequently the SLR Model holds the following axiom: the limit of magnitude of content (emissive or receptive) is established by the smaller of the two shared knowledges SL or LR.
In the above diagram the Sender, the Receiver, and the Linker are fixed in their positions. The Linker's shared knowledges are unequal SL>LR. The limit of the magnitude of content of the communication is established by the smaller of the shared knowledges, LR (c).

The situational capability of the Sender to communicate and that of the Linker to receive have increased. Between Sender and Receiver there is an improvement for communication. But as a consequence of the higher location of the Linker, the shared knowledge LR has decreased. Therefore, when the real act of communication is similar to the situation depicted by the diagram, the Sender has no security in his communication. Maybe the difference, SL-LR, that acts as a restrainer and eliminates part of the substantive S\textsubscript{lr} message, eliminates the or an important part of the message or perhaps a key aspect of it. Therefore, if the Sender should know himself to be in such a situation, it would be advisable for the time such a situation lasts not to send any complicated or important message, mainly if its importance or complication lies in the extent of knowledge involved in the message.

The following diagram on page 54 represents another situation in which
the Sender, the Linker, and the Receiver have a fixed position. The limit of the magnitude of content of communication is established by the smaller of the shared knowledges SL (b). Now the situational capability of the Sender to communicate has decreased and with it the relative power of the Linker to receive. There is a decrease in capability for communication between the Sender and Linker. The contrary has happened between the Linker and the Receiver.

In the case presented in the above diagram, the Sender gains in security. He can be sure that anything communicated to the Linker will reach the Receiver but, unfortunately, due to the small shared knowledge SL (b), that will not be very much.

This situation is safer than the preceding one. Important and complicated messages can be sent but within a limited range of knowledge.

In the following diagrams the Sender and the Receiver have a fixed position while the Linker is capable of upward and downward movement within its zone. In the next diagram on page 55 the Linker's upward movement diminishes the loss of magnitude of content (a) and increases its shared knowledge with the Sender, SL (b). At the same time, being able to return
to its former position facing the Receiver, there is no loss of shared knowledge LR (c) or increase of loss in the magnitude of the Receiver to receive (d). At once one sees the convenience of using this capability for the described movement on the part of the Linker any time it is made possible by the particular characteristics of the Linker.

The above diagram shows the optimum case in such movement of the Linker. Here the Linker, through its upward movement, is able to share completely the Sender's absolute potency to communicate and, due to its basic position, the Receiver's absolute potency to receive. This capability brings the best situation for communication when, as postulated, the shared
knowledge between the Sender and the Receiver is very small or nil.

As has been indicated, the Linker will be the element dealing the most with the messages. At least he is in charge of the transformation of the messages $S_{sl}$ into $S_{lr}$, $A_{1}$ into $A_{1i}$, and feedbacks$_{1}$ into feedbacks$_{1i}$.

Many times he will add to the burden of his task that of an interpreter. This will suppose, at least, the knowledge in both languages of the specific vocabulary required in the particular case. Besides he has to have the elemental and necessary qualities for oral approach in communication.

By position and activity in the SLR Model, the Linker has always been a middleman, consequently facing the psychological and social difficulties that typically are involved in such a role. In some places some ethnic groups, mainly the mestizos, will seem to fit naturally for the Linker task. In such a case the Sender, agency or its representative, should not get mixed up, confusing an ethnic nexus, the mestizo, with a cultural nexus, the Linker. Consequently, before selecting a Linker from such an ethnic group, the Sender should know the social image that such an ethnic group has in the mind of the "Receiver" in the specific society or region, and the amount of social problems that such ethnics nexus carry with themselves.

The Linker is going to make a horizontal approach to the Receiver possible. As was pointed out before, in spite of the controversy raised by the Two-Steps Theory (if only two steps or many steps), such theory has brought enough evidence to make a horizontal approach to the Receiver recommendable.

If possible the innovation brought by the communication should be
beneficial for the Linker, not directly through his contact with the Sender but indirectly through the result of the communication. The Linker acting as a Linker should not derive such benefits from the Sender as to jeopardize the communication either in content or in the length of the process. The Sender, selecting and dealing with the Linker, should be very careful about and should check by means of messages, the tendency of the Linker to flatter the Sender and to tyrannize over the Receiver something which is a natural outgrowth of his social position.

The Receiver The Receiver in the SLR Model is the element for whom the communication is intended, the one who receives the messages. Following Laswell nomenclature, the SLR Model conceives the Receiver as the element of the Model to whom the messages are 'said' (58).

In general the Receiver, according to the level of analysis, can be conceived as an individual or a plurality of any kind and size, and analyzed from many different points of view. The SLR Model, having development as a framework of reference and using a socio-functional approach, ontically conceives the Receiver immediately as an individual immersed in a group, usually with strong traditional orientation, and more distantly as said group. By the same token, the SLR Model conceives the reverse logically.

The SLR Model, analyzing the Receiver, focuses its attention on those particularities of this element (individual or group) which, in the framework of reference constitute a generic obstacle for the perception of the message. Such particularities are also a hindrance to the reception of the communication and, in the long run, to change for development.

The generic obstacles considered here and contemplated by the Model are: Illiteracy and a particular type of Mass audience.
Illiteracy  The author's intention in analyzing illiteracy here is not to call attention to the importance of its eradication as a fulcrum for development (60, 61). Illiteracy is brought here in describing the Receiver of the SLR Model in order to evaluate the fact that a communicator for development, given the extension of illiteracy in the world (59), is going to face an illiterate Receiver in the majority of the cases.

This fact of the extension of illiteracy plus the fact that most of the 3000 or so languages of the world still have no writing (62, p. 77) will bar practically any sort of written communication. Therefore the channel of communication will be narrowed, at least between Linker and Receiver, to an oral approach with the limitations that such approach generates - limitation in conductance, and the great probability of distortion of the messages. On the other hand, when only an oral approach is possible and no adequate precautions are taken, the communication work could be limited to one generation only.

In the framework of development the target of the messages in the mind of the communicator very few times, if any, is going to be an isolated individual or a limited group. Usually it is going to be an extensive mass of people. This mass to which the messages have to come across is, due to specific social and geographical characteristics (mainly isolation), a peculiar type of mass. While the average mass audience of a communication process is a factual mass (syncathegorematic mass) to be met practically altogether intentionally, geographically and temporally, the common type of mass that the communicator for development is going to face, is a virtual mass (cathegorematic mass): a mass that only can be reached little by little, step by step.
Constitutive elements

The message  In the SLR Model the messages are the main constitutive element. The messages are the constitutive element which rank first in importance and difficulty. The importance, as in any other model or theory of communication, is due to the fact that they are the carriers of the communication. The difficulty springs from the particular qualities they ought to have, given the lack of shared knowledge between the Sender and the Receiver.

One of the basic principles of communication theory is that the messages can have only that meaning (extension and depth) and consequently influence which the Receiver is able to understand from them.

We call denotative meaning of a message the meaning that the Sender, based on commonly understood definitions and knowledge, puts in it or, in short, the meaning of the message in itself. We label as connotative meaning of a message the situational meaning and value of a determined message, that is to say, the meaning resulting from the juxtaposition of the circumstances (time, place, person, etc.) to the denotative meaning. It is easily imagined and understood that both meanings can be so different as to bring confusion to the communication process.

Any conscious Sender has to evaluate the possibility of this difference between connotative and denotative meaning of a message and take prevision to avoid it or, at least, its consequences. The Sender in our framework of reference--shared knowledge very little or nil--always has to bear in mind such a possibility.

In the SLR Model that provision to avoid such a possible difference between denotative and connotative meaning of the message, and to make
possible 'true contact' between the Sender and the Receiver is taken by means of the Linker and two types of messages: substantive and auxiliary. For the same above-mentioned reasons, the SLR Model has two classes of feedback: spontaneous and extracted.

The SLR Model considers 'the message' of the communication process as a chain of two substantive messages: Message $S_{sl}$ located between Sender and Linker, and Message $S_{lr}$ located between Linker and Receiver, the Linker taken as intermediary Receiver and as intermediary Sender respectively. The reason for such complexity is understood very easily: the two messages are created to bridge the gap of the lack of shared knowledge between Sender and Receiver. Thus the SLR Model has two sequential sets of Substantive Messages, two sets of Auxiliary Messages and feedbacks.

The author labels as substantive messages what ordinarily is taken as a "message" in any process of communication. According to Laswell's nomenclature they are "what is said" by the Sender to the Receiver (58). Message $S_{sl}$ is sent by the Sender to the Linker taken in his aspect of intermediary receiver. The message can be prepared by the Sender alone. Message $S_{lr}$ is sent by the Linker as intermediary sender to the Receiver. This message could be prepared by the Linker who is supervised by the Sender by means of the auxiliary messages $A_{i}$ and $A_{ii}$. Messages $S_{sl}$ will encounter the common difficulties of an ordinary message in any communication process (Cf. Hovland) (63). The author would recommend as main qualities for these messages simplicity, clarity, practicality, and practicability. Besides, these messages should carefully avoid anything that could lead, even remotely, to possible misinterpretations. The Sender should realize that his message is going to meet the Receiver through an
indirect way and that it will have to undergo some transformations.

Messages $S_{1r}$, besides the common difficulties, are going to be faced with the fact that the Sender, (the Linker in his aspect of intermediary sender) while addressing them to small groups or individuals has to have in mind a mass. Furthermore messages $S_{1r}$ have to create a positive climate of opinion so as to make it possible for the individuals to accept the substantive messages without their being frowned upon by the group.

To take care of the practical difficulty of getting feedback or equivalents the SLR Model has the Auxiliary Messages. Auxiliary Message I, $A_i$ is sent by the Sender to the Linker, taken as intermediary receiver. Its goal is triple: (1) to check the Linker's perception of the substantive message $S_{sl}$, (2) to check the Linker's decoding-encoding of the substantive messages: decode $S_{sl}$, encode $S_{1r}$, and (3) as a methodological message to guarantee the reception of feedback. Auxiliary Message II, $A_{ii}$ is sent by the Linker to the Receiver. Its aim is (1) to check the Receiver's perception of the message $S_{1r}$, (2) to inspect the Receiver's decoding of the same $S_{1r}$ message, and (3) to extract feedback whenever it may be required and is not volunteered by the Receiver. Auxiliary Message III, $A_{iii}$ is sent by the Sender to the Linker so as to know from him the Receiver's perception and decoding of the $S_{1r}$ message, and consequently of the $S_{sl}$ message and of the communication.

Feedbacks and auxiliary messages In the SLR Model the feedbacks and their 'extractors,' the auxiliary messages, are the secondary constitutive elements. The importance of feedbacks in any process of communication is well known. The SLR Model, given its particular aim—to bridge the gap of the lack of shared knowledge between the Sender and the Receiver—has to
pay special attention to the feedback. In our framework of reference between the Sender and the Receiver, there is practically no possibility of a direct feedback. Between the Linker and the Receiver or between the Linker and the Sender, the possibility and existence of the feedback is jeopardized and limited by the extent of the shared knowledge. Besides, in our case, the particular characteristics of the Receiver make feedback more difficult and more important since, as Schramm says, "in developing countries feedback must carry a still more important burden of information because of the great differences in the audience and the relatively small amount known about them by many communicators who operate from the great cities of the country" (64).

The dictionary calls feedback "the return to the input of a part of the output of a system or process" or "the partial reversion of the effects of a process to its source or to a preceding stage" (65).

In communication, feedback—concept and reality—is used analogically, while the concept of feedback is easily understood (66). It is not very often defined but when it is, too many times it is too broadly defined (47, p. 7). For instance, Schramm defines feedback as "information that comes back from the Receiver to the Sender and tells him how well he is doing" (67), while he describes it, illustrating it with the example of a conversation as "the return process" which tells the Sender how his messages are being interpreted (64).

Feedback is a very broad concept in the literature of communication. Here, and solely as an operational definition, feedback is defined as unintentional information about the effect of the communication sent by the Receiver and perceived by the Sender. If such information were intentional,
it would be another act of communication in a two way communication.

Using Schramm's words, it could be called the unintentional return process. Feedback also could be understood as the 'given off' message of the effect of the communication.

The author designates as virtual feedback any feedback expressed through symbolic behavior while real feedback is that manifested by empirical behavior. Both virtual and real, according to how the Sender gets it, will be volunteered or extracted.

In our framework of reference a volunteered feedback, when gotten, as has been said, would suffer the effects of the lack of shared knowledge. In our framework of reference too it is going to be very hard, if not impossible, to perceive a feedback or to get it at the needed time and, let alone, to understand it.

To overcome the obstacles to the feedback created by the lack of shared knowledge between the Sender and the Receiver, the SLR Model has two acts of feedback. Feedback I is located between the Sender and the Linker, and Feedback II is between the Linker and the Receiver. To surmount the difficulty of making the feedback perceptible, understandable, and to make it feasible to have it in the required time, the SLR Model points out the convenience of the extracted feedback.

To extract feedback the SLR Model presents a special type of message which could be, for the practical purpose of this dissertation, called Auxiliary Messages. Such Auxiliary Messages could be a type of negatively substantive messages, not to give but to get information. Such messages would not be addressed to send any information but rather to create a vacuum so as to attract induced feedback from the Receiver to the Linker
as intermediary receiver, and from the Linker as intermediary sender to the Sender. In both steps the two elements, Sender and Receiver, are on the same level so as to make understanding easier.

The Auxiliary Messages would have a double aspect, (1) a stimulating function in order to stir up some sort of adequate feedback in the client element (Receiver, Linker as intermediary sender) toward the originator element (Sender, Linker as intermediary receiver), and (2) a receptive function in the originator element in order to take and interpret such forced feedback. The Auxiliary Messages should act within the corresponding feedback areas. They correspond to the feedback and consequently, as expressed before, they are Auxiliary Message $A_1$ and Auxiliary Message $A_{ii}$. The need for and difficulty of the Auxiliary Messages rest on the particular characteristics of the Receiver in our framework of reference.

Note that the stimulating function of Auxiliary Message $A_{ii}$ is completely different from the possible stimulus brought by Message $S_{1r}$. The former stimulates the Receiver to give some given off message, while the stimulus of the Message $S_{1r}$ is sent in order to obtain the reception of the communication and indirectly to obtain a change or staying with the status quo in the Receiver's behavior by means of the acceptance of the message core.

There could be a case in which the impact of a Message $S_{1r}$ would be positive, nil or negative but nevertheless without giving any sort of feedback telling how the Sender is doing. The stimulating aspect of the Auxiliary Message $A_{ii}$ in this case would try to obtain such feedback through a given off message. On the other hand the Auxiliary Message $A_{ii}$ will be positive, nil or negative in its results completely independent
from the impact of the Message $S_{1r}$. The same could happen with Message $S_{sl}$ and Auxiliary Message $A_i$.

Many times the Auxiliary Messages will be addressed to check the identity between the sent message and the perceived message. The Auxiliary $A_i$, as has been said, would be addressed to check the sent message of the Sender and the perceived message of the Linker as intermediary receiver, while Auxiliary Messages $A_{ii}$ will be addressed to check the identity between the sent message of the Linker as intermediary sender and the perceived message of the Receiver.

According to the special need the Auxiliary Messages could consist of mere observation of action or of no-action in the client element. Usually they will have to be some kind of simple sequence-questions directed to evaluate the meaningfulness of the perceived message. Such a question should be formulated after Messages $S_{sl}$ and $S_{1r}$ have been emitted.

The need for checking the perceived messages comes from the convenience of checking the effects of the $S_{sl}$ and $S_{1r}$ messages before they by wrong interpretation can spoil the process of communication and its syndrome. A further need for this checking activity comes from the earlier recommendation of limiting the activities of the integral elements of the model (Sender, Linker, Receiver) to their respective zones.

If there were no perception of the substantive messages, known through the feedbacks, or if there were a great disparity between the sent and the perceived messages, the Sender or the Linker as intermediary sender, both as creators of Auxiliary Messages $A_i$ and $A_{ii}$ respectively, should change the way in which the substantive messages are formulated. Maybe the content of the substantive messages or even the aim of the communication process
should be change. This should be done to avoid the embarrassing situation that could be originated by the distortion of the messages from their very origin.

Before formulating the Auxiliary Messages it would be convenient for the Sender and the Linker, in order to avoid bigger difficulties, to know something about the entirely different social position that the peasant assumes, be the situation one in which he faces strangers or peers.

All Auxiliary Messages have a secondary aim. It would consist of helping the Receiver (Linker or Receiver) to put intentionality in their feedbacks. The feedback with intentionality would become a real message, Feedback II a message $S_{la}$ (from Linker to Sender) and Feedback I a message $S_{rl}$ (from the Receiver to the Linker). Thus we would have a new flow of communication from the Receiver toward the Sender. That would make a two way communication process which, in the optimum case, would become a circular process, the ideal of any communication process for or in development.

The direction of the information flow in the SLR Model is illustrated by triangles for the Substantive Messages, and by arrows for the Auxiliary Messages and their respective feedbacks (according to the direction pointed out). Both Feedback and Auxiliary Message are located within rectangles representing the feedback area to point out their connection and

\[ S_{sl} \quad S_{lr} \]
\[ \text{Feedback} \quad \text{A.Message} \]
\[ F_{1} \quad A_{1} \]
The order of appearance on the scene and of activity of the integral elements that make the flow of communication possible will be multiple and chronologically different according to their situation in the act or process of communication. Thus:

(a) In the flow of Substantive Messages.

Chronological order: Activity:

1- Sender Encode
2- Linker (Intermediary Receiver) Decode
3- Linker (Intermediary Sender) Encode
4- Receiver Decode

Location: Encode → Decode
          ^           
  in the model  Encode ↓ Decode

(b) In the flow of Feedbacks.

Chronological order: Activity:

1- Receiver Encode
2- Linker (Intermediary Receiver) Decode
3- Linker (Intermediary Sender) Encode
4- Receiver Decode

Location: Decode ← Encode
          ^           
  in the model  Decode ↑ Encode

(c) In the interactivity of Auxiliary Messages and Feedbacks.

(1) Sender to get Fi
<table>
<thead>
<tr>
<th>Chronological order:</th>
<th>Activity:</th>
<th>When the feedback is spontaneous:</th>
<th>When the feedback is extracted:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Sender</td>
<td>Encode</td>
<td>Encode</td>
<td></td>
</tr>
<tr>
<td>2- Linker (Intermediary Receiver)</td>
<td>Decode</td>
<td>Decode</td>
<td></td>
</tr>
<tr>
<td>3- Linker (Intermediary Sender)</td>
<td>Encode</td>
<td></td>
<td>//////</td>
</tr>
<tr>
<td>4- Receiver</td>
<td>Decode</td>
<td>Observe</td>
<td></td>
</tr>
</tbody>
</table>

**Location:**
- **in the model**

- **When the feedback is spontaneous:**
  - Encode $\rightarrow$ Decode
  - Decode $\leftarrow$ Encode

- **When the feedback is extracted:**
  - Encode $\rightarrow$ Decode
  - Observe $\rightarrow$ //////

(2) Linker to get $F_{i1}$
(3) Sender to get $F_{\text{int}}$

**Chronological order:**

<table>
<thead>
<tr>
<th>Activity:</th>
<th>When the feedback is spontaneous:</th>
<th>When the feedback is extracted:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Sender</td>
<td>Encode</td>
<td>Encode</td>
</tr>
<tr>
<td>2- Linker (Intermediary Receiver)</td>
<td>Decode</td>
<td>Decode</td>
</tr>
<tr>
<td>3- Linker (Intermediary Sender)</td>
<td>Encode</td>
<td>Encode</td>
</tr>
<tr>
<td>4- Receiver</td>
<td>Decode</td>
<td>Decode</td>
</tr>
<tr>
<td>5- Receiver</td>
<td>Encode</td>
<td>//////</td>
</tr>
<tr>
<td>6- Linker (Intermediary Receiver)</td>
<td>Decode</td>
<td>Observe</td>
</tr>
<tr>
<td>7- Linker (Intermediary Sender)</td>
<td>Encode</td>
<td>Encode</td>
</tr>
<tr>
<td>8- Sender</td>
<td>Decode</td>
<td>Decode</td>
</tr>
</tbody>
</table>

**Location:**

When the feedback is spontaneous:

- Encoder $\rightarrow$ Decoder
- Decoder $\rightarrow$ Encoder

When the feedback is extracted:

- Encoder $\rightarrow$ Decoder
- Decoder $\rightarrow$ Encoder
- Observer $\rightarrow$ //////
The chronological order of the constitutive elements - Messages and Feedbacks - will be different according to the specific (secondary) aim of the communication act. Thus:

(a) If an exploratory action is needed the order will be

1- Auxiliary Message $A_1$
2- Feedback $F_1$ (extracted)

(These two steps could be repeated if needed)

3- Substantive Message $S_{s1}$
4- Auxiliary Message $A_{i1}$
5- Feedback $F_{i1}$ (extracted or spontaneous)

(Steps 4 and 5 could or maybe must be repeated until the Linker is satisfied with the results)

6- Substantive Message $S_{lr}$

(b) If such exploratory action is not needed, the order of the constitutive elements would be as follows:

1- Substantive Message $S_{s1}$
2- Substantive Message $S_{lr}$
3- Feedback $F_1$ (extracted or spontaneous)
4- Feedback $F_{i1}$ (extracted or spontaneous)

(c) In general we may say that the ontic order of the constitutive elements of the SLR Model is, as pointed out in (b), as follows:

1- Substantive Message $S_{s1}$
2- Substantive Message $S_{s1}$
3- Feedback $F_1$ (extracted or spontaneous)
4- Feedback $F_{i1}$ (extracted or spontaneous)
(d) In a particular case, according to the situational importance of each of the constitutive elements of the SLR Model, the order will be:

1- Substantive Message \( S_{ir} \)
2- Feedback \( F_{i} \) (extracted or spontaneous)
3- Substantive Message \( S_{sl} \)
4- Feedback \( F_{ii} \) (extracted or spontaneous)

The communication systems Lerner's paradigmatic questions of communication research - Who says What, How to Whom (52) - are commonly used to differentiate the two main types of public communication systems - Media and Oral. In the SLR Model the "Who" and "to Whom" could serve to identify and group the level of analysis of the communication act. The "What" could be used to identify and classify the communication, while the "How" will serve here to identify and differentiate the 'Communication Systems' of the SLR Model.

The SLR Model contemplates the use of two communication systems: Communication System I, and Communication System II. The former between Sender and Linker, the later between Linker and Receiver.

In 'Communication System I', following the aforementioned Lerner's differentiation of public communication, usually a combination of both media and oral systems will be used but with a certain predominance, at least for the first acts of the communication process, of the Media System characteristics (Channel: Media (Broadcast:) Audience: Mass (Heterogeneous) Source: Professional (Skill) Content: Descriptive (52).

In 'Communication System II', following the above differentiation, practically always one will have to use the oral system (Channel: Oral (Point-to-Point)) Audience: Primary (Homogeneous) Source: Hierarchical
(Status; Content: Prescriptive)) or a combination of Media and Oral systems. Nevertheless in the later, given the clear predominance of the aspects of "Type II" (52) (Communication: Oral; Socioeconomic: Rural; Political: Non-representative; Cultural: Illiterate) among the Receiver of our framework of reference—Development the Oral system should predominate.
METHODOLOGY

Methodology is understood here as the systematic and logical procedures and techniques of investigation. Just for the purpose of clarity it will consist of two parts: Methodology I and Methodology II.

In Methodology I, as an introductory step, the conceptualization used in this dissertation will be shown by means of a series of concepts and hypotheses.

In Methodology II the author presents a set of research techniques that can be used to bring empirical evidence to support the external validity of the SLR Model.

Methodology I: Concepts and Hypotheses

Basic concepts

The following concepts are believed to be basic to the SLR Communication Model:

[1] Social Presence* (page 34)
[4] Sender (page 44)
[5] Linker* (page 48)
[6] Receiver (page 57)
[7] Substantive Message $S_{s1}$ (page 60)
[8] Substantive Message $S_{ir}$ (page 60)

*The concepts with the asterisks are believed to be particular of the SLR Communication Model.
[9] Auxiliary Message $A_{i}$* (page 61)
[10] Auxiliary Message $A_{ii}$* (page 61)
[12] Feedback $F_{i}$ (page 61)
[14] Perception of a communication
[15] Shared knowledge

Derived concepts

The following concepts can be derived from the basic concepts listed above:

[16] Messages content [7], [8], [9], [10], [11]
[17] Sender's total capability to communicate* [4]
[18] Linker's total capability to communicate* [5]
[19] Sender's situational capability to communicate* [4]
[20] Linker's situational capability to communicate* [5]
[21] Linker's total capability to receive* [5]
[22] Receiver's total capability to receive* [6]
[23] Linker's situational capability to receive* [5]
[26] Shared knowledge SL* (Sender-Linker) [15], [4], [5]
[27] Shared knowledge LR* (Linker-Receiver) [15], [5], [6]

*The concepts with the asterisks are believed to be particular of the SLR Communication Model.
[29] Velocity of a communication [6]
[31] The understanding of a communication [6]
[33] The talking about a communication [6]
[34] The liking to try what is made known by the communication [6]

Dependent variables

The following concepts are seen as the key concepts among those whose degree or direction may vary from act to act of communication:

[36] The tempo of the receiver's perception (conductance) [28]
[37] The velocity of the communication [29]
[38] The quantity of receivers of a communication [30]
[39] The understanding of a communication [31]
[40] The thinking about a communication [32]
[41] The talking about a communication [33]
[42] The liking to try what is made known by the communication [34]

Explanation of the following diagram on page 77.

I - Stages of the adoption process divided for the purpose of this chapter in two blocks: 'theoretical' and 'practical range'. (Only the items within the theoretical range will be manipulated here.)

II - The 'critical variables' to be measured within the framework of the stages theory in order to evaluate the SLR Communication Model.

III - 'Functional steps' (specific conceptualization of the 'critical

1 Velocity is taken here in terms of the Linker's face to face communication brought to people out of town (Cf. p. 101).
Diagram 2. Dependent variables
The size of the boxes is no indication of anything specific. It tries to show a better visualization of correspondence.
variables') to be used here in order to check the 'critical variables'.

IV - Specific sub-concepts of the functional steps to operationalize the critical variables. They are the elements (dependent variables) that must be quantified and measured to evaluate the critical variables and, consequently, the SLR Model.

Hypotheses

Based on the preceding basic and derived concepts, the following hypotheses can be stated. They will be grouped in three divisions.

First division The hypotheses presented here state mere relationship.

(1) There will be a relationship between the use of the SLR Model and the perception of a communication.

(2) There will be a relationship between the use of the SLR Model and the velocity of a communication.

(3) There will be a relationship between the use of the SLR Model and the conductance of a communication.

(4) There will be a relationship between the use of the SLR Model and the understanding of a communication.

(5) There will be a relationship between the use of the SLR Model and the talking (among the receivers) about the communication.

(6) There will be a relationship between the use of the SLR Model and the liking to try (or use, have) the object made known by a communication.

Second division The hypotheses presented here state positive relationship.

(1) There will be a positive relationship between the use of the SLR
Model and the perception of a communication.

(2) There will be a positive relationship between the use of the SLR Model and the velocity of a communication.

(3) There will be a positive relationship between the use of the SLR Model and the conductance of a communication.

(4) There will be a positive relationship between the use of the SLR Model and the understanding of a communication.

(5) There will be a positive relationship between the use of the SLR Model and the talking (among the receivers) about the communication.

(6) There will be a positive relationship between the use of the SLR Model and the liking to try (or use, have) the object made known by a communication.

Third division Here, presented in rank and order, are the hypotheses that have to be tested in order to bring empirical evidence to support the external validity of the SLR Communication Model.

(1) General hypothesis: There will be a positive relationship between the use of the SLR Model and the perception of a communication.

(2) Sub-general hypothesis 1: There will be a positive relationship between the use of the SLR Model and the awareness of a communication.

(3) Specific hypothesis 1-1: There will be a positive relationship between the use of the SLR Model and the quantity of receivers perceiving it.

(4) Specific hypothesis 1-2: There will be a positive relationship between the use of the SLR Model and the conductance of a communication.

(5) Specific hypothesis 1-3: There will be a positive relationship between the use of the SLR Model and the velocity of a communication.

(6) Sub-general hypothesis 2: There will be a positive relationship between the use of the SLR Model and the level of perception of a communication.
(7) Specific hypothesis 2-1: There will be a positive relationship between the use of the SLR Model and the understanding of a communication.

(8) Specific hypothesis 2-2: There will be a positive relationship between the use of the SLR Model and the acceptance of a communication in the theoretical range.

(9) Sub-specific hypothesis 2-2-1: There will be a positive relationship between the use of the SLR Model and talking about a communication (among the receivers).

(10) Sub-specific hypothesis 2-2-2: There will be a positive relationship between the use of the SLR Model and the liking to try (or use, have) the object made known by the communication.

Methodology II: Research Methods

Introduction

To evaluate a communication process, just as to bring empirical evidence to support the external validity of a communication model, there are many possible approaches according to the different points of inquiry. One can focus on the effectiveness of the process or the model, the conditions of their effectiveness, their choice of channels, the specific nature of their messages, how they solve the problems of transmitting meaning, the nature and evidence of their effects, how the communication sent according to their paradigms affects the receiver, how they contribute to social change (68), etc.

All these and other suitable approaches to communication research and evaluation of communication schemes can be grouped under two main headings (69). The first of them is "content-oriented" approaches. Their units of investigation are the characteristics of content and/or structure of the messages as such. The second one is "effect-oriented" approaches. Here
the inquiry is concerned more directly with communication effects per se.¹

The aim of this chapter, while complete in itself, is restricted to indicate the procedures by which the external validity and worth of the SLR Model can be proven. The summarizing questions to be formulated and answered with empirical evidence are (a) Does the SLR Model work in communication? and (b) Does the use of the SLR Model bring about an improvement in communication over a parallel communication process in which the SLR Model is not employed? To answer the preceding questions objectively, we have to check and evaluate the communication effects of the SLR Model.

As a first step one has to reduce both answers to verifiable empirical effects so as to make it possible for any observer to duplicate the same verifications under the specific defined conditions.

Any communication "provides a distinctive source of stimulation, for whoever is exposed to it, the receiver; i.e. he must be able to retranslate, or decode the symbols into significance of his own, which may or may not agree with the intentions of the source. This decoding activity is at once the awareness of the significance of the communication and a necessary prior condition if the decoder is to do anything as a result of the communication" (69).

From the above paragraph one can abstract the "critical variables" (49, pp. 287-288) of the effect of communication – awareness, understanding and acceptance. The quantification and mensuration of these variables will make a scientific evaluation of the SLR Model possible.

¹For an example of effect-oriented approach cf. Beal, Klonglan, Bohlen, Yarbrough's Impact Model (47).
The need for isolating the "critical variables" in analyzing communication has been evidenced already by the experiments on "primacy", which show that the order of the presentation of the issues not always has a definite influence in the outcome of the communication (49). In addition "this differentiation (A-U-A) is important because the variables which determine the effectiveness of a communication may effect these three phases of the influence process in varying ways and to different degrees." So a way to evaluate the efficacy of the SLR Model will be to quantify and measure the "critical variables" - awareness, understanding, and acceptance - of information facilitated through the SLR Model. Earlier some possible connection-correspondence between the SLR Model and research and theory of Adoption-Diffusion was pointed out. Now the author will take the scheme of the stages theory as the theoretical arena in which he will analyze and check the SLR Model.

The stages theory has enough evidential support (36, p. 166) so as to make acceptance conceivable as a process with definite, though indetermined, stages. The adoption of a specific communication usually is not the result of a single decision to act but rather the result of a series of decisions and actions. This series of decisions has been called the adoption process (36).

In our framework of reference communication in/for development, given the concomitant problems surrounding trial and adoption coming from the same underdevelopment syndrome (lack of material possibilities, etc.), and the specific aim of this chapter, we will not pay attention to these two stages. On the other hand, for the same reasons stated above, the author finds it convenient for the purpose of this chapter to split the awareness
of the stages theory into two sub-stages - awareness and understanding. By means of this division the author plans to check better the two first of the "critical variables." The third one, acceptance, again, for the reasons expressed above, will not be taken into account.

By taking out of our inquiry the stages of the labeled practical range of the stages theory, and the third of the "critical variables" the author is not making any negative judgment of their utility. Rather they are excluded simply because they broaden the scope beyond the boundaries of this chapter.

**The empirical arena**

As pointed out before, the general purpose of this dissertation has been to investigate the process of communication within the framework of development. As for its specific aim, it pointed out how to build a workable communication model for the difficult case that the communicator is probably going to encounter in development: lack of shared knowledge between himself and the receiver.

Now, in the methodology to be used in order to check that model, the hypothetical population the author has in mind, qualitatively considered, will be peasant farmers, while quantitatively considered, it could be a region of homogeneous characteristics with specific common needs. The sample and unit of analysis to whom the SLR Communication Model should be applied and from whom one might hope to get empirical evidence of its workability could be a town, one of the pair with the characteristics pointed out in the research design.

**Research design**

As was indicated before, the way to be followed here to bring empirical evidence to support the external validity of the SLR Model is to compare its effects in communication with a parallel communication carried out
without this Model. However, in the effects of communication, as in every complex situation, many factors operate. Thus, if we seek to describe and evaluate a single relationship of factors, in our case the use of the SLR Model, to communication effects, we are facing an idealistic situation in which many other factors are supposed to be constant (70, p. 74).

To make reality closer to that situation (constancy of other factors) we will have to have some sort of control upon the other factors possibly intervening in the effects of the communication. The feasible way will be to select cases that may have equal measurement of such unknown factors.

The way proposed here to check the workability of the SLR Model would be to pick out two towns having no contact with each other, with the same topographical, ethnic, economic, cultural and social characteristics. If possible they should be terminal points of a road system, thereby insuring relative isolation from other external influences, while cutting out any interest in being intermediaries in a new marginal communication process. The second step would be to use the Model (treatment) to communicate a specific message in one of the towns while in the other (control) the same communication should be brought by means of the ordinary ways used to communicate, and then compare the empirical effects of the communication.

To communicate the test message, in the treatment unit the Sender will select a Linker and proceed accordingly with the SLR Model. In the control unit the same message will be brought directly to the Receiver by the Sender itself or by the Sender through the ordinary channel used to bring communication into this unit.

The subject to be communicated should be very simple in content and format, with the same appeal for both towns which should have a null prior knowledge of said subject at the initiation of the communication.
The subject to be communicated should be 'pure' in content, that is to say, it should not have a marginal utility in the possibility of its being passed on to others.

Some time after the communication has been brought to the town, and according to the situation, data could be collected by interviewers filling a very simple and specific questionnaire aiming to check only the evidence of the communication effects and not their nature.

**Operationalization (suppositional) of the independent variable, the SLR Communication Model**

From the infinite variety of possible examples of operationalization of the SLR Model the author gives the following one just as an illustration of its function.

**Sender** - A team formed by two M.D. representatives of the Ministry of Health and Welfare, a lieutenant representing the AA.FF., and the researchers from an international agency for development.

**Linker** - A sergeant of the local garrison, a native of the town, who is coach of the local soccer team. He is also in charge of the physical plant that provides electricity for the town and neighboring hamlets. He completed high school.

**Receiver** - The seventy heads of family in town and neighboring hamlets.

**Communication System I** - Mail, printed matter, and face-to-face communication.

**Communication System II** - Face-to-face communication.

**Substantive Message** $S_{sl}$ - Importance of the use of iodized salt given the natural conditions of drinking water of the region.

**Substantive Message** $S_{ir}$ - The convenience for the people in town to avoid goiters. The girls would be prettier. The boys would be stronger
and more handsome, etc. The remedy is at hand, just use the new salt that is sold in the general store now.

Auxiliary Message $A_1$: Do you think that the taste of the new salt is sour?

Auxiliary Message $A_2$: Have you gotten any of the prizes that come inside of the new salt boxes?

Auxiliary Message $A_3$: Do you think that the people of town will help transport more sacks of salt whenever it will be needed?

The above operationalization of the SLR Model will be referred to hereafter as the SLR empirical model I.

**Operationalization of the shared knowledge**

As has been said before, the Linker of the SLR Model is supposed to be capable of bridging the gap between the Sender and the Receiver by transforming the messages. Such transformation is made possible by the Linker's shared knowledge with both the Sender and the Receiver.

A measure that could be used to determine the extent of shared knowledge for Linker, Sender and Receiver would be a knowledge index based on questions concerning the general topic area as well as meaning of words used to communicate the message.

An additional empirical measure that can be used to determine the extent of shared knowledge between Linker and Sender would be the level of formal education attained by both the Sender and the Linker.

A further measure that could be used for the shared knowledge between Linker and Receiver would be developed from a series of questions about the background and experiences of the Linker and the Receiver. It is expected that the Linker and Receivers would have a degree of common background stemming from their being from the same country, region, or town.
Operationalization of the dependent variables

In order to evaluate the external validity of the SLR Communication Model (General hypothesis) the operationalization of the dependent variables could be done in accordance with the following scheme.

(A) The dependent variable to be dealt with primarily is Awareness
   (Sub-general hypothesis 1) It will be done,
   (1) Directly: Measuring the quantity of receiver-perceivers of the communication (Specific hypothesis A-1)
   (2) Indirectly:
       (a) Measuring the conductance of the communication (Specific hypothesis A-2)
       (b) Measuring the 'velocity' of the communication (Specific hypothesis A-3)

(B) The dependent variables to be dealt with secondarily will be the understanding and theoretical acceptance (sub-general hypothesis 2)
   (1) The understanding of the communication (Specific hypothesis B-1)
   (2) The theoretical acceptance of the communication (Specific hypothesis B-2) (I) In a theoretical range: (1) The thinking about the communication (Sub-specific hypothesis I-1). (2) The talking about the communication (Sub-specific hypothesis I-2). (3) The liking to try what is made known by the communication (Sub-specific hypothesis I-3).
       (II) In a practical range:¹ (1) The real

¹Not to be dealt with here.
trial of what is made known by the communication if pertinent.

(2) The adoption of what is made known by the communication.

Six dependent variables were delineated as the elements to be specifically quantified, measured, and manipulated in order to evaluate the critical variables and, consequently, the SLR Model. These dependent variables are (1) quantity of receivers of the communication, (2) conductance of the communication, (3) understanding of the communication, (4) thinking and talking about the communication, (5) liking to try what is presented by the communication.

The procedure to be followed here first consists of an explanation of the abbreviations to be used. Secondly each one of the above referred to dependent variables will be quantified and measured according to the following steps: (a) location in the questionnaire, (b) individual evaluation—scoring, (c) collective evaluation in the treatment unit, (d) collective evaluation in the control unit, (e) proportionating the collective evaluation in treatment unit, (f) proportionating the collective evaluation in control unit. They then will be related to the independent variable (g) by means of an operationalized hypothesis, (h) by means of a statistical hypothesis, and finally, (i) testing such relation by means of a statistical test.

Explanation of the abbreviations:

A: Treatment. Locality where the communication has been carried out by means of the SLR Communication Model.

B: Control. Locality where the communication has been carried out without the SLR Communication Model.

\( t_a \): Time of the starting of the communication in A.
O^b: Time of the starting of the communication in B.
X^a: Time of the checking of the effects of the communication in A.
X^b: Time of the checking of the effects of the communication in B.
N^a: Number of possible receivers of the communication in A (scopus in A).
N^b: Number of possible receivers of the communication in B (scopus in B).

(X^a - O^a): Lapse of time between the starting of the communication and the checking of its effects in A.

(X^b - O^b): Lapse of time between the starting of the communication and the checking of its effects in B.

Y^a: Affirmative answer to a question of the questionnaire in A.
Y^b: Affirmative answer to a question of the questionnaire in B.

E^a: In A, the geographical distance covered by the communication measured from the point of its starting to the point of its detection during the checking operation.

E^b: In B, the geographical extension covered by the communication measured from the point of its starting to the point of its detection during the checking operation.

T^ha: Thinking (unit) about the communication in A.
T^hb: Thinking (unit) about the communication in B.
T^a: Talking (unit) about the communication in A.
T^b: Talking (unit) about the communication in B.
L^ta: Liking to try what is presented by the communication in A.
L^tb: Liking to try what is presented by the communication in B.
X^tha: Time of the thinking about the communication in A.
$X_{thb}$: Time of the thinking about the communication in B.

$X_{ts}$: Time of the talking about the communication in A.

$X_{tb}$: Time of the talking about the communication in B.

Quantification and mensuration of the dependent variables.

1. Quantity of receivers of the communication.
   
   (a) Location in the questionnaire: Have you ever heard about "H"? (Q.q.1)

   (b) Individual evaluation (scoring): Yes answer: 1 point, No answer: 0 points.

   (c) Collective evaluation in treatment unit: $\Sigma Y_a$

   (d) Collective evaluation in control unit: $\Sigma Y_b$

   (e) Proportional evaluation in treatment unit: $\frac{\Sigma Y_a}{N_a}$

   (How many Yes answers out of $N_a$ possibles, over $N_a$)

   (f) Proportional evaluation in control unit: $\frac{\Sigma Y_b}{N_b}$

   (How many Yes answers out of $N_b$ possibles, over $N_b$)

   (g) Operationalized specific hypothesis A-1: There will be a positive relationship between the use of the SLR empirical model I and the proportional quantity of receivers having heard about the communication over the total number of possible receivers.

   (h) Statistical hypothesis A-1:

   $$H_0: \frac{\Sigma Y_a}{N_a} \leq \frac{\Sigma Y_b}{N_b}$$
(i) In order to test the significance of the statistical hypothesis A-1 and those following, the z test for difference between sample proportions that follows could be used.

\[
\begin{align*}
H_a: \quad \frac{\sum_{a} Y_a}{N_a} & > \frac{\sum_{b} Y_b}{N_b} \\
\alpha & = 0.01^1
\end{align*}
\]

(2) Conductance of the communication.

(a) Related question in the questionnaire: When did you first learn about "H"? (Q.q.1a)

(b) Individual evaluation: The answer will be a date, at least approximated. Thus, time of the checking of the effects of the communication (X) minus time of the starting of the communication (0) will give the time (X-0) to be used here to operationalize conductance.

(c) Collective evaluation of conductance in the treatment unit: \[
\frac{\sum_{a} Y_a}{(X-0)}
\]

\[^1\text{An } \alpha \text{ level of significance 0.01 has been specified in this case rather than the more conventional 0.05 which is going to be used in the following statistical hypotheses since at this point it is needed a strong evidence that the SLR Communication Model (treatment) is better than the conventional method of communication.}\]
(d) Collective evaluation of conductance in the control unit:

\[ \frac{\Sigma Y_b}{(X_b - 0_b)} \]  

(e) Proportional evaluation of conductance in the treatment unit:

\[ \left( \frac{\Sigma Y_a}{(X_a - 0_a)} \right) \frac{N_a}{N} \]  

(f) Proportional evaluation of conductance in the control unit:

\[ \left( \frac{\Sigma Y_b}{(X_b - 0_b)} \right) \frac{N_b}{N} \]  

(g) Operationalized specific hypothesis A-2: There will be a positive relationship between the use of the SLR empirical model I and the proportion of receivers having heard about the communication over the lapse of time between the starting of the communication and the checking of its effects, all this over the total number of possible receivers.

(h) Statistical hypothesis A-2:

\[ H_0: \frac{\left( \frac{\Sigma Y_a}{(X_a - 0_a)} \right)}{N_a} \leq \frac{\left( \frac{\Sigma Y_b}{(X_b - 0_b)} \right)}{N_b} \]

\[ H_a: \frac{\left( \frac{\Sigma Y_a}{(X_a - 0_a)} \right)}{N_a} > \frac{\left( \frac{\Sigma Y_b}{(X_b - 0_b)} \right)}{N_b} \]

\[ \alpha = 0.05 \]

(i) Statistical test: See page 91 for statistical test A-1.
(3) Velocity of the communication.

(a) Related question in the questionnaire: Where did you first learn about "H"? (Q.q.1b)

(b) Individual evaluation: The answer will be a known place. Thus, the distance between the place where the communication started and the place given here will give the distance (E) to be used here to operationalize velocity. (Distance)/(Time) = Velocity.

(c) Collective evaluation of velocity in the treatment unit:

\[ \Sigma \left( \frac{E_a}{(X_{a} - 0_a)} \right) \frac{1}{n} \]

(d) Collective evaluation of velocity in the control unit:

\[ \Sigma \left( \frac{E_b}{(X_{b} - 0_b)} \right) \frac{1}{n} \]

(n: number of cases checked)

(e) Proportional evaluation of velocity in the treatment unit:

\[ \Sigma \left( \frac{E_a}{(X_{a} - 0_a)} \right) \frac{1}{n} \frac{1}{N_a} \]

(f) Proportional evaluation of velocity in the control unit:

\[ \Sigma \left( \frac{E_b}{(X_{b} - 0_b)} \right) \frac{1}{n} \frac{1}{N_b} \]
(g) Operationalized specific hypothesis A-3: There will be a positive relationship between the use of the SLR empirical model I and the distance between the point of finding 'yes answers' while checking the effects of the communication and the point where the communication started, over the lapse of time between the starting of the communication and the checking of its effects, all of these over the number of checked over the total number of possible receivers.

(h) Statistical hypothesis A-3:

\[
H_0 : \frac{\Sigma \left( \frac{E_a}{(X_a - 0_a)} \right)}{\frac{n}{N_a}} \leq \frac{\Sigma \left( \frac{E_b}{(X_b - 0_b)} \right)}{\frac{n}{N_b}}
\]

\[
H_a : \frac{\Sigma \left( \frac{E_a}{(X_a - 0_a)} \right)}{\frac{n}{N_a}} > \frac{\Sigma \left( \frac{E_b}{(X_b - 0_b)} \right)}{\frac{n}{N_b}}
\]

\(\alpha = 0.05\)

(n: number of cases checked)

(i) Statistical test: See page 91.

(4) Understanding of the communication.

(a) Location in the questionnaire: Do you know what it is about?

To verify the validity of the affirmative answer, this auxiliary question should be asked: What is it about? If a satisfactory answer is received, the yes given as an answer to the former question may be taken as valid. If the
answer received is unsatisfactory, the affirmative answer should be taken as negative.

(b) Individual evaluation (scoring): Yes answer: 1 point, No answer: 0 points.

(c) Collective evaluation of understanding in the treatment unit: \( \Sigma Y_a \)

(d) Collective evaluation of understanding in the control unit: \( \Sigma Y_b \)

(e) Proportional evaluation of understanding in treatment unit:

\[
\frac{\Sigma Y_a}{N_a}
\]

(f) Proportional evaluation of understanding in control unit:

\[
\frac{\Sigma Y_b}{N_b}
\]

(g) Operationalized specific hypothesis B-1: There will be a positive relationship between the use of the SLR empirical model I and the proportion of receivers understanding what the communication is about, over the total number of possible receivers.

(h) Statistical hypothesis B-1:

\[ H_0: \frac{\Sigma Y_a}{N_a} \leq \frac{\Sigma Y_b}{N_b} \]

\[ H_a: \frac{\Sigma Y_b}{N_a} > \frac{\Sigma Y_b}{N_b} \]

\( \alpha = 0.05 \)
(i) Statistical test: See page 91.

(5) Talking about the communication.

(a) Location in the questionnaire: After you first learned about "H", did you ever talk about it?

(b) Individual evaluation on talking (scoring):

Yes answer: 1 point,

No answer: 0 points.

(c) Collective evaluation of talking in treatment unit: $\Sigma T_a$

(d) Collective evaluation of talking in control unit: $\Sigma T_b$

(e) Proportional evaluation of talking in treatment unit: $\frac{\Sigma T_a}{N_a}$

(f) Proportional evaluation of thinking and talking in control unit: $\frac{\Sigma T_b}{N_b}$

(g) Operationalized sub-specific hypothesis I-l: There will be a positive relationship between the use of the SLR empirical model I and the proportion of receivers talking about the communication over the total number of possible receivers.

(h) Statistical sub-specific hypothesis I-l:

$$H_0: \frac{\Sigma T_a}{N_a} < \frac{\Sigma T_b}{N_b}$$

$$H_a: \frac{\Sigma T_a}{N_a} > \frac{\Sigma T_b}{N_b}$$

$\alpha = 0.05$
(i) Statistical test: See page 91.

To check sleeper effect of thinking in treatment unit:

\((X_{th_a} - 0_a)\).

To check sleeper effect of talking in treatment unit:

\((X_{ta} - 0_a)\).

To check sleeper effect of thinking in control unit:

\((X_{th_b} - 0_b)\).

To check sleeper effect of talking in control unit:

\((X_{tb} - 0_b)\).

(6) Liking to try what is presented by the communication.

(a) Location in the questionnaire: Did you ever feel like trying (using, having, etc.) "H" yourself?

(b) Individual evaluation of liking (scoring):

**Yes** answer: 1 point,

**No** answer: 0 points.

(c) Collective evaluation of liking in treatment unit: \(\Sigma L_{ta}\)

(d) Collective evaluation of liking to try in control unit: \(\Sigma L_{tb}\)

(e) Proportional evaluation of liking to try in treatment unit:

\[
\frac{\Sigma L_{ta}}{N_a}
\]

(f) Proportional evaluation of liking to try in control unit:

\[
\frac{\Sigma L_{tb}}{N_b}
\]

(g) Operationalized sub-specific hypothesis I-2: There will be a positive relationship between the use of the SLR empirical
model I and the proportion of receivers liking to try what is presented by the communication over the total number of possible receivers.

(h) Statistical hypothesis I-2:

\[ H_0: \frac{\sum L_{ta}}{N_a} \leq \frac{\sum L_{tb}}{N_b} \]

\[ H_a: \frac{\sum L_{ta}}{N_a} > \frac{\sum L_{tb}}{N_b} \]

\( \alpha = 0.05 \)

(i) Statistical test: See page 91.

**Analysis of findings**

In Methodology II the quantification and mensuration of the dependent variables was presented in eight steps: (a) locating in the questionnaire the question related to the variable with which we are dealing, (b) scoring individual answers, (c) and (d) scoring the collective evaluation of the units of analysis, (e) and (f) presenting the proportions to be manipulated. Finally, in (e) an operationalized hypothesis was brought to relate the dependent variable with the independent one (SLR Communication Model), and in (h) the operationalized hypothesis previously indicated was expressed in statistical terms.

Continuing the empirical trend followed in Methodology II, here will be presented a table for the analysis and discussion of the findings and their implication for theory and future research. The table is presented in the diagram on page 98.

On level III are the dependent variables used to prove the external
validity of the SLR Model. On level II one finds the same dependent variables specified and operationalized. On level I two series of boxes are presented, one for the findings in the treatment unit, the other for the findings in the control unit. Each box corresponds to each one of the operationalized dependent variables.

The statistical analysis of the statistically stated empirical hypotheses will bring evidence to support the acceptance \((P_1 > P_2)\) or rejection \((P_1 \leq P_2)\) of the alternative hypotheses. Since the hypotheses are correspondent to the dependent variables expressed in the table, in accordance with their acceptance or rejection of the alternative hypotheses that relate the corresponding dependent variable with the independent variable, one can write "+" or "-" in the aforementioned boxes. Accordingly,
we have all the boxes of the treatment series filled with "+" while the boxes of the control series have "-".

In case B, let us suppose that we have the contrary of case A, so all the boxes of the treatment series are filled with "-" while the boxes of the control series have "+".

In case C we consider all the possible cases with combinations of "+" and "-" in the treatment series and the corresponding contrary combinations in the control series.

The first two cases A and B are the limit cases. A is the limit case of the workability of the SLR Model, while B is the limit case of its lack of external validity. In both cases the results and their possible implications are very understandable. The recommendation in both cases would be either to check the performance of the counter method (in A in the control unit, in B in the treatment unit) or to repeat the experiment checking the matching. To check the performance of the SLR Model in the treatment unit one could follow the patterns suggested in pages 67-69.

The possibilities to be considered in case C, taking into account the nature of the dependent variables involved, could be grouped in two blocks. First, 'Quantity of Receivers', second the other remaining dependent variables. The rationale for such division is the fact that only 'Quantity of Receivers' is directly related to the performance of the role of Linker as Linker, while the other, even though directly related to the communication, are only indirectly related to the Linker's role as Linker. Consequently they only should be used to evaluate qualification of the Linker.

Furthermore 'Quantity of Receivers' is the key dependent variable for the analysis and evaluation of the findings. First of all, because it is
the most related to the external validity of a communication model—theory of communication. The quantity of Receivers of the communication shows the workability of the model. Secondly, because such a quantity of Receivers aware of the communication (EY) is present explicitly or implicitly in the numerator of all the proportions of the alternative hypotheses statistical. Consequently, if in the treatment box for 'Quantity of Receivers' we have "+" we will have enough evidence so as to support empirically the external validity of the SLR Communication Model.

The dependent variables of the second block, even though showing qualities of the communication having some relationship with the Linker's role, are closer to the syndrome of qualities that is a combination of many specific and local factors. For example, the psychological characteristics of the target audience of the communication, internal qualities of the item communicated, etc. Thus they should be evaluated locally in order to meliorate the performance of the Linker's role. For instance, velocity has been introduced here to bring possible additional insights about the Linker's role in regard to his face to face contacts.

None of the dependent variables of the second block can induce rejection of the SLR Model. Nevertheless they could be of much value to make its acceptance easier.
CONCLUSION

Since, as initially stated, the purpose of this dissertation was solely to present a Model designed with the purpose of improving communication in development, and to indicate the methodology for its empirical support, any conclusion at this stage would be presumptuous. Nevertheless, even though conclusions are premature, it would appear that if the presented SLR Model, linear in its structure, works, the next step could be to implement it in a multidimensional approach so as to establish a model, based on communication, which is designed for possible restructuring social systems.
SUMMARY

The general purpose of this study has been to investigate the process of communication within the specific framework of development. Specifically, this dissertation was intended to build a workable communication model for those situations in which the shared knowledge between the communicator and the intended recipient of the communication is negligible or non-existent.

A cursory review of some better known communication models was presented in order to show by inference that the new model, the SLR (Sender, Linker, Receiver) Communication Model, presents a still different and needed approach to the specific problem in communication brought by the lack of shared knowledge between communicator and recipient of the communication.

Starting with Social Mirage, a concept derived from those of Social Presence and Social Absence, the study rejects some hypothetical movements on the imaginary social plane—the lowering of the communicator or the rising of the recipient of the communication—as solutions for effective communication in the case of lack of shared knowledge between Sender and Receiver of the communication.

Subsequently, the SLR Communication Model is developed. It is divided into five zones: Sender's, Communication's System I, Linker's, Communication's System II, and Receiver's. The Model consists of three integral elements, Sender, Linker, and Receiver; and of three constitutive elements, Substantive Messages, Auxiliary Messages, and Feedbacks. The zones and elements were defined and described, and the process of communication was explained.

Further elaboration upon the position and role of the Linker was made
through various hypothetical situations indicating the advantage of his being mobile in order to augment his shared knowledge both with Sender and Receiver of the communication.

Finally, a set of hypotheses was formulated relating the SLR to the critical variables of a communication (Awareness, Understanding, Acceptance), and some research techniques that can be used to bring empirical support to the external validity of the SLR Model were presented.
REFERENCE LIST


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APPENDIX

Questionnaire

(1) Have you ever heard about "H"?  

No.  
Yes.  

(1a) WHEN did you first learn about "H"?  

(1b) WHERE did you first learn about "H"?  

(2) Do you know what it is about?  

No.  
Yes.  

To verify the validity of the affirmative answer this auxiliary question should be asked: What is it about? If a satisfactory answer is received, the Yes given to the former question may be taken as valid. If the answer is unsatisfactory, the affirmative answer should be taken as negative.  

(2a) WHEN did you first find out what it is about?  

(3) After you first learned about "H", did you ever talk about it?  

No.  
Yes.  

(3a) WHEN did you first talk about "H"?  

1"H" refers to the communication being presented.
(3b) WHERE did you first talk about "H"?

(4) Did you ever have the desire to try (use or have) "H" yourself?

No.
Yes.

(4a) WHEN did you first get the idea to try (use or have) it yourself?

(4b) WHERE did you first get the idea to try (use or have) it yourself?