

CLIENT-CHANGE AGENT RELATIONSHIPS  
IN THREE COLOMBIAN VILLAGES

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Eduardo Ramos L.

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**CLIENT-CHANGE AGENT RELATIONSHIPS  
IN THREE COLOMBIAN VILLAGES**

**By**

**Eduardo Ramos L.**

**A THESIS**

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## ABSTRACT

### CLIENT-CHANGE AGENT RELATIONSHIPS IN THREE COLOMBIAN VILLAGES

by Eduardo Ramos L.

Change agents are the link between modern agricultural technology and the farm population. Success or failure of change agents' objectives rest upon their ability to induce farmers to adopt their recommendations. The acceptability that change agents have in the community may depend on many factors. It is the goal of the present study to determine how personal characteristics of change agents and agent-client social distance are related to clients' attitudes and behaviors.

Four change agent characteristics (age, education, role experience, and marital status) are studied from the point of view of the amount of discrepancy between the actual values of these characteristics and ideal values as perceived by clients. These discrepancies or attribute-differentials, are then related to client-change agent social distance, credibility of change agents, favorability toward change agents, client-change agent contact, and client's degree of innovativeness.

Negative relationships were hypothesized between attribute-differentials and attitudinal and behavior variables. Positive relationships were hypothesized between attribute-differentials and social distance. Negative relationships were hypothesized between social distance and the selected attitudinal and behavioral variables.

Respondents were from three peasant villages near Bogotá, Colombia. One hundred and thirty-six respondents were interviewed. The interview schedule was administered by students of sociology at the National University of Bogotá. The data were analyzed using product moment correlations. The change agents under study were the schoolteacher and the extension agent.

From the extension agent attribute-differentials, role-experience was significantly related both to credibility and favorability. Age was significantly related both to favorability and social distance. Education was not significantly related to the other variables. Client-extension agent social distance was significantly related to favorability, credibility, and contact.

From the schoolteacher attribute-differentials, education was significantly related to credibility. Age was significantly related to favorability. Role-experience was not significantly related to other variables. Marital status was significantly related to credibility, favorability, and contact, but in the direction opposite to that predicted. Client-schoolteacher social distance was not significantly related to credibility or favorability or contact. Innovativeness was significantly related to favorability toward the schoolteacher.

Social distance was shown not to intervene in the relationship between attribute-differentials and credibility, favorability, and contact with the change agents. The intervening function was tested in terms of the difference between the zero-order correlations and the first-order partial correlations, controlling for social distance.

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## CHAPTER I

### INTRODUCTION

#### Background and Nature of the Study

There is a considerable amount of scientific literature showing the importance of change agents in the process of information dissemination and technical and social change.<sup>1</sup> Especially in underdeveloped countries the change agents' role is of vital importance since in most cases they constitute the main link between the "receiver" social system and the "source" social system.

A change agent, defined by Rogers (1962, p. 254) as "a professional person who attempts to influence adoption decisions in a direction that he feels is desirable," is perhaps the instrumental element upon whom most of the responsibility for success or failure of social change rests. The change agent's role has been related in different research studies to:<sup>2</sup>

1. Interpersonal communication at different stages in the innovation decision process (113).
2. Promotional efforts by change agents introducing new ideas (15).

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<sup>1</sup>See for example Everett M. Rogers and Leticia Smith, Bibliography on the Diffusion of Innovations, Diffusion of Innovations Research Report 3, Michigan State University, Department of Communication, July 1965, where the authors listed 870 titles concerned with the diffusion and adoption of innovations.

<sup>2</sup>The number in parentheses refers to the identification numbers of publications available in the Diffusion Documents Center at Michigan State University, Department of Communication, as of July, 1966.

3. Strategies used by change agents for introducing and assuring the adoption of innovations (196).
4. Social consequences which resulted from change agents' introductions of new ideas (42).

These studies give an idea of the complex relationships involving change agents, innovations, and social systems. But there is one aspect related to change agents which has not yet been studied, at least empirically. This question concerns the relationship between the change agents' personal characteristics and clients' attitudes and behavior toward the change agent.

Social scientists have found that the way in which a source is perceived influences the audience's attitudes and behavior. Ittelson and Slack (1958, p. 210) for example, pointed out that "Something the other person is or does (i.e., his physical characteristics and his actions) both provokes certain feelings in the observer and determines what feelings the observer will perceive the other person as having."

Interpersonal attraction has been shown to be a determinant of a large variety of behaviors (Pepitone, 1958, p. 256). Liking and disliking are phenomena which justifiably occupy an important place in research on social behavior such as perceiving persons, entering or leaving groups, influencing or communicating with others (Morwitz, 1958, p. 191).

Factors determining liking and disliking, closeness, warmth, intimacy, conflict, rejection, and so on, in the interactive process between individuals are reflected in the social distance existent between the interacting parts. Social distance in that sense is the extent to which a person is disposed to treat other person on basis of certain attributes found in the later.

Minimal social distance may indicate great intimacy of association of attributes between the persons in interaction or between judge and judged.

In the present study it is assumed that whether or not clients like their change agents will depend, in part, on how clients perceive the change agents' personal characteristics on the basis of how these characteristics fulfill clients' expectations; that the lack of fulfillment of those expectations will be reflected in certain degrees of social distances and that subsequently it will affect clients' credibility and favorability of change agents, and client-agent contact.

So far as can be ascertained from a search of the literature, no empirical studies dealing with change agents' characteristics as they affect clients' attitudes and behavior have been conducted previously.

The present study is an attempt to deal with the relationships between agent characteristics, social distance and client attitudes and behavior. The study was conducted in rural Colombia and deals with two types of change agents: (1) the agricultural extension agent, and (2) the rural schoolteacher. The Extension Service, a branch of the National Ministry of Agriculture in Colombia, has been working for several years in the area of Colombia in which the present study was conducted. The extension agent in Pueblo Viejo, San Rafael, and Cuatro Esquinas had been working in the three Colombian villages of study for six years prior to the time of the data-gathering. Each village has its own schoolteacher, nominated by the State Secretary of Education, part of the National Ministry of Education. Change agents will be discussed in more detail in Appendix B.

### Objectives of the Present Study

The main objectives of the present study are:

1. To determine the range of variation between "ideal" change agents' characteristics and "actual" change agents' characteristics in the population studied.
2. To determine the range of variation in social distance between change agents and clients, as perceived by the clients.
3. To determine how change agents' characteristics and client-agent social distance are related to clients' attitudes and behavior toward change agents.

CHAPTER II  
RATIONALE AND HYPOTHESES  
A Theoretic Rationale

Change Agents' Characteristics

"One of the most significant ways in which a person can be described is in terms of how he appears to others. At times, the opinion of others may, in fact, be the all-important consideration in someone's evaluation of a person. For what people think of a person unquestionably influences their behavior toward him as well as, in the long run, the behavior of the very person himself" (Taguiri, 1958, p. 329).

In dealing with the identification of the principal variables associated with success or failure of county extension agents, Hye (1952, p. 4) assumed that "Success in county extension work can be predicted from a combination of an individual's background, training, intelligence level, vocational interest, attitudes, and other personal characteristics." Cohen (1964, p. 29) said that the effectiveness of a person (a change agent, for example) may depend on whether he is perceived as an expert, but also on whether he is "fat, sloppy, neat, ugly, handsome, poor athlete, or a member of a minority group." How people perceive these and similar characteristics (age, education, marital status, nationality, etc.) may be crucial when the referent individual is an extension agent or schoolteacher.



People may develop attitudes toward a person even before they meet him personally. These attitudes are often based upon some personal characteristics which lead clients to conceive of an individual in a particular way. A handsome, rich, 35 year old, single man, living in Miami Beach, could be perceived by many as a "playboy." It does not matter if he is that or not. For example, he could be a priest in real life. The point is that perception of an individual is developed previous to greater knowledge of him. Attitudes toward the individual by other persons are originated and subsequently observers' behavior toward him also may be influenced by perception of his characteristics. The previous example illustrates the case in which, for individuals possessing certain characteristics, specific roles are assigned according to the way in which those characteristics are perceived.

On the other hand, the opposite can also occur. People assign specific characteristics to certain roles according to the individual's perception of that role. For example, when referring to the president of the United States, individuals assign certain characteristics that he should possess, such as age (more than 35 years), nationality (American citizen); perhaps for some, a particular religious affiliation; a certain degree of education, integrity, honesty, political background, and so on.

It is in this particular context that the present study is focused. What is the ideal degree of some characteristics as expected by the clients, for the extension agent and the schoolteacher to have, and what implications, if any, do discrepancies have when these expected characteristics do not "meet" the actual ones possessed by the change agents?

When change agents' characteristics do not meet the clients' expected ones, there exists what is called in the present study attribute-

differentials, defined as the magnitude of discrepancy that exists between ideal change agents' characteristics expected by their clients and the actual ones.

Attribute-differentials become important because individuals build up conceptions of others by comparing and contrasting them with themselves. From these, a feeling of "alike-ness" or "dislike-ness" is originated and attitudes and behavior toward others are determined at the light of the degree of the similarity found.

Literature on the exercise of leadership reports several personal characteristics associated with leaders, such as size, physical appearance and dress, intelligence, friendliness, etc. (Berelson and Steiner, 1964, p. 342). But as Gibb (1954, p. 886) pointed out, leaders "must not exceed the followers by too large a margin, for great discrepancies between the intelligence of the leaders and followers militates against the emergence of a leadership opinion."

By the same token, it is argued in the present study that great discrepancies between ideal and actual change agents' personal characteristics will influence clients' attitude toward the agent's perceived credibility and favorability and in respect to client-agent contact as well as the innovativeness of the client.

Four personal characteristics for change agents will be considered as relevant for analysis in the present study: age, education, role experience, and marital status.

### 1. Age

Every known society differentiates among several age groups and assigns them certain appropriate behaviors (Berelson and Steiner, 1964,

p. 82). Age-graded cultures characteristically demand different behavior of the individual at different times in his life. It is considered that for performing certain specific roles, individuals demand a certain age-range for the role-players. For purposes of the present study, it is assumed that our respondents expect a certain age-range for the extension agent and the schoolteacher.

## 2. Education

Evidence that Colombian peasants value education relatively highly is noted in their responses about their educational aspirations for their children (Rogers, 1963 and Havens, 1965, p. 8). If individuals in a social system valued education highly it is logical to assume that for specific roles they will demand for the role-player, a certain level of education. It is assumed that change agents' clients expect or want persons with certain levels of intellectual skills as their advisors.

## 3. Role Experience

"Experience is the mother of wisdom" is a popular refrain that reflects the high value placed upon an individual's experience in his field. Among peasants, experience is closely associated with knowledge. Practice in performing a role provides the role-player with certain ability to face different situations concerning his work. Specifically, for extension agents and schoolteachers the number of years of work experience constitute the best index in evaluation competence.

## 4. Marital Status

Marriage is associated with acquisition of responsibilities. It is considered that marriage leads to improved performance of certain

duties. Marriage almost universally marks a point of transition in the life cycle the world over. Whether a person is single or married will affect the way in which his abilities and responsibilities are perceived by others.

### Attribute-Differentials and Clients' Attitudes and Behavior

Attribute-differentials, defined as the degree of discrepancy that exists between ideal change agents' characteristics expected by their clients and the actual ones, will be discussed in their assumed interrelationship with perceived credibility and favorability of change agents and client-agent contact.

#### 1. Attribute-Differentials and Credibility

Credibility is the degree to which an individual regards a source as accurate. Hovland and others (1953, p. 21) made a distinction between (1) the extent to which a communicator is perceived to be a source of valid assertions (his "expertness"), and (2) the degree of confidence in the communicator's intent to communicate the assertions he considers most valid (his "trustworthiness"). No special attention was given to these two components of credibility; rather the concept was taken as a single dimension without analyzing non-objective aspects of the sources.

Certain sources of information have been found to have a low or high degree of credibility when compared to others. How credible a source is becomes one of the factors that can influence the role of change agents. In terms of effectiveness of a communication, who delivers it is a crucial factor to be considered.

Besides whether a person is perceived as expert and trustworthy, other personal characteristics (fat, handsome, sloppy, neat, etc.)

affects the degree of the audience's credibility placed in the communicator (Cohen, 1964, p. 29).

Most of the literature concerning factors associated with credibility of sources has been focused on internal factors of the communicator and their perception by the audience. Ewing (1942), for example, studied perceptions of the communicator's intentions to persuade his audience. Novland and Mandell (1952) studied trustworthiness. Perception of fairness and propagandistic intent were studied by Weiss and Fine (1956) and Weiss (1957).

Credibility of a source is based, then, upon certain characteristics considered as important by the individual judge. To the extent that the expected characteristics exceed or fail to meet the individual's idea of what should be, the source loses his credible image.

Lack of knowledge of the indigenous characteristics of a source may lead the individual to judge his credibility through its external (exogenous) characteristics such as age, marital status, years of education, years of experience, and so on. Even in this case, the individual previously has assigned values to those characteristics that he expects to be fulfilled. Deviation from these expected characteristics will lead one to evaluate differently, the credibility of the source.

In this regard, it is hypothesized that lower credibility is placed upon the extension agent and the schoolteacher when the discrepancy in age, in education, in role-experience and marital status is higher than when that discrepancy is low.

## 2. Attribute-Differentials and Favorability

How an individual responds to an object concerns the concepts of attitude and opinion. An attitude is defined as a relatively enduring

organization of beliefs around an object or situation predisposing one to respond in some preferential manner. An opinion is the verbal expression of some attitude (Korkeach, unpublished). The opinion one expresses and the attitude underlying it, may be a function of several factors. It is proposed here, that one of those factors is the attribute-differentials, i.e., the extent to which the selected personal characteristics of a change agent differ from those thought to be "ideal" by the client.

It is assumed that when an individual assesses or evaluates another individual, the evaluation is relative. To say that a person is too old for the job he is doing, or has too little job experience is to implicitly say that he should be younger, and should have more job experience. In other words there is a discrepancy between what an individual is and what he ought to be, ideally.

The verbal expression of this evaluation is referred to as an opinion. For purposes of the present study, we are concerned with the degree of favorability with which the client views the change agents. To the extent that the agents' characteristics approximate the clients' ideal types, we say that expectations are consonant with actual conditions. Where such is the case it is suggested that the client's evaluation will be more favorable. On the other hand, where the magnitude of the discrepancy is relatively great, one would expect the client to think less of the change agent; he needs more experience, it would be better if he had more education, etc. In this instance, a less favorable evaluation is more likely. On this basis, it is hypothesized that as the magnitude of the attribute-differentials increase, favorability toward the agent decreases.

### 3. Attribute-Differentials and Client-Agent Contact

Contact is defined as the interaction between the communicator and the receiver. Special importance is given to personal interaction (face-to-face) since research has indicated its relevance in securing social change. The client-agent relationship demands and must be characterized by feed-back, due to its very advisor-advisee nature.

The way in which clients perceive change agents determines how much communication a client will have with them (Fogers, 1962, p. 257). Perception of the change agents as possessing personal characteristics expected by their clients, will establish bases upon which clients will be willing to interact with them. On the other hand, a discrepancy between clients' expectations of such characteristics and actual characteristics may alter the communication pattern, and contact with the change agent will be either never established, decreased, or discontinued.

When the magnitude of this discrepancy with respect to change agents' age is high, for example, clients will consider whether or not it will be useful to contact him. Being too young, may mean irresponsibility and being too old, perhaps lack of activity, energy or as possessing the same old ideas or saying what everyone knows. Similar arguments can be put forth for lack of education, or experience, and so on.

On this basis it is hypothesized that as the magnitude of the attribute-differentials increase, client-agent contact decreases.

#### Social Distance and Attitudinal and Behavioral Variables

##### Client-Agent Social Distance

The concept of social distance refers to a continuum described by Park as 'The grades and degrees of understanding and intimacy which

characterize pre-social and social relations generally" (Goode and Hatt, 1952, p. 243).

For purposes of the present study social distance will be defined as the difference in sympathetic understanding that exists between persons, or groups, or between a person and a group (Bogardus, 1931, p. 328).

The notion that social distance exists between an individual and others has been discussed in the social-psychological literature for some time. Bogardus (1928 and 1933) offered a scale of social distance, Lewin (1936) discussed social distance between individuals in the United States and Germany. Other writers, although not employing the term "social distance," appear to be dealing with the same phenomena. For example Peak, Murney and Clay (1960) utilize distances; Fiedler's (1958) notion of assured similarity is a special case of social distances, and most of the research on prejudice concerns directly with social distance (Triandis, 1961).

If it is possible to obtain satisfactory measures of social distance (scales mainly), the next task is to consider determinants and consequences of it. Some factors considered to influence social distance are, age, sex, social status, occupation (Bogardus, 1926, pp. 214-217), cultural background (Triandis, 1960, p. 1), judges-judges similarities in religion orientation (Dealer and others, 1963, p. 69) and ethnic, religion, political affiliation (Hartley, 1946), social class and nationality (Triandis, 1962).

With respect to the consequences, social distance per se describes a continuum ranging from close, warm, and intimate contact through indifferent, active dislike, hostility, and rejection (Goode and Hatt,



1952, p. 243) of the person judged.

Change agents, so far as the author knows, have not been used as referents (stimuli) in their judgment of their characteristics by the client members of the social system. In the present study it is suggested that three consequences of social distance are (1) credibility, (2) favorability toward change agents and (3) client-agent contact.

### 1. Social Distance and Credibility

In looking for information, clients can select the source of communication to which they want to be exposed. They respond to those who they consider as credible and reject those which are not considered as credible sources. Merton (1949, p. 202) found that social distance acted as an important limiting factor in the choice of information sources, and Campbell (1959, pp. 93 and 97) reported a not significant correlation between social distance and perceived expertness and trustworthiness of the source.

As social distance between the client and agent, as judged by the client, increases, the client perceives the agent to be less like himself. Under such conditions it is suggested that the client will consider that change agent may not be an appropriate judge of his situation, wants, and needs and thus the information that the agent might give him would not be entirely appropriate or applicable. Having evaluated an agent, thus, the client would tend to disregard, have reservations about, or believe less, what the agent might say. In other words the client would not consider the agent to be a sufficiently credible source.

Studies of opinion leadership (Katz and Lazarsfeld, 1955 and others) show that people tend to select opinion leaders or sources of

information who are occupationally and socioeconomically similar to themselves. Studies of homophily (Chou, 1966) indicates that people tend to interact more frequently with others who are like them.

The present study will attempt to determine the relationship between social distance and credibility. Specifically it is hypothesized that as social distance between client and agent increases the agent is perceived as being less credible.

## 2. Social Distance and Favorability

When talking about social distance it was said that it refers to a continuum ranging from close, warm, and intimate contact to indifferent, active dislike, hostility and rejection. It is in this sense that social distance measures how an individual evaluates others and to what extent this evaluation may determine certain attitudes and behavior toward the evaluated persons.

Much of the literature concerning attitudes toward others involves studies on prejudice and ethnic relations. Whether social distance is the result of favorable or unfavorable attitudes or these are a result of social distance is not well established. Nevertheless, it is known that a relation exists between how close a person considers himself to be to another and what he thinks of him.

It is hypothesized that favorability toward a person is increased as social distance decreases. Perhaps one of the crucial factors intervening in this relationship is time. Neutral or indifferent opinions may be characterized by lack of intimate knowledge about a subject or an issue. But when more intimate knowledge of the person is obtained perceptions of social distance and favorable-unfavorable dispositions toward the referent develop.

### 3. Social Distance and Contact

'Social distance may be thought in terms of social contacts. Where there are no social contacts of any kind whatever, complete isolation exists, and the social distances are indeterminable" (Bogardus, 1926, p. 209).

It is to be noted that contact does not necessarily eliminate social distance or that short social distance leads per se to guarantee personal contacts. Personal interaction with other individuals may occur for reasons other than a feeling of closeness or "sympathetic understanding." In obtaining services or in looking for the acquisition of desirable benefits, the individual may interact with others with whom he feels there is a great social distance. A consumer may not like the salesman and perhaps feels that there is a great distance between each other, nevertheless he can interact with the seller because he can perform the service required. A businessman may feel himself quite distant from other businessmen but nevertheless develop frequent contacts with them because a fruitful economic benefit can result from such interaction.

Boaler and others (1963, p. 69) pointed out that "There are many factors which influence the extent to which a person will willingly consent to share intimate social contacts with another. Similarity in religious orientation may be one such dimension."

This and other dimensions determine the social distances and subsequently the amount and kind of social contact.

When clients perceived change agents as socially distant from themselves, the clients become restricted in their potential willingness to establish personal contacts. Perception of the closeness-far continuum, then, will determine whether or not personal contact with

change agents will develop.

In the present study it is hypothesized that clients will have more frequent contact with their change agents when their social distances are short than when they are large.

#### Attribute-Differentials and Social Distance

In the literature concerning leadership, personal characteristics have been found relevant in the characterization of the leader. Gibb (1954, pp. 834-832) reported several physical and constitutional factors associated to individuals considered as leaders. In fact, the definition of a leader by his followers is based upon his characteristics considered as salient by the individuals doing the choice.

By its very nature, leaders are not deviant from the norms of the group (Rogers, 1952, p.233). Furthermore, the leader-follower relationship may be considered as an example of minimized social distance in the individual-group context.

Individual attributes may determine his social distance from others. Deviation from the characteristics desired for the individual makes him not acceptable for the group. Therefore, these attribute-differentials (actual vs. desired characteristics) become in a sense determinants of the degree of social distance that would appear.

There is a similar situation for the change agents. Although they are not necessarily leaders for the clients, they are moving into a context in which they should be considered as close as possible to their clientele. One of the problems involved in achieving social change through the adoption of new ideas is that of achieving an intimate relationship (rapport) between agent and client.

It is at this point when personal characteristics may be important in establishing an intimate relationship. If the change agent fulfills clients' expectations there would not be "inconsistency" between expectations and reality. But in the case in which the clients find out that their agents' characteristics are not the desirable ones, "dissatisfaction" may arise and subsequently, depending on the extent of dissonance, they will feel a barrier between them and the change agents.

It is hypothesized, in the present study, that a positive relationship exists between attribute-differential and social distance. Specifically, it is expected that when the attribute-differentials in age, education, role-experience, and marital status are higher that client-agent social distance will be higher.

#### Attitudinal and Behavioral Variables

##### Client-Change Agent Contact and Innovativeness

Innovativeness is defined by Rogers (1962, p. 19) as the "degree to which an individual is relatively earlier in adopting new ideas than the other member of his social system." Innovativeness by its very nature is related to a modern rather than to a traditional orientation.

Individual innovativeness is the target for the change agents' work. "People cannot be motivated to adopt new ways on the basis of logical evidence of better results or of charts or scientific arguments" (Mead, 1955, p. 259). Change agents need to work intensely to understand cultural norms, values, and beliefs operating in the social system. In breaking down barriers to change, extension agents really are trying to break individual's resistance to acceptance of new ideas and therefore subsequently raise individual levels of innovativeness.

In testing the relationship between client-agent contact and innovativeness, inconsistent results have been reported. White (1965, pp. 38-41) found a not significant relationship between those two variables. Rahudkar (1962, p. 84) reported, although with reservation, a broad indication that "High level adopters were better in contact with the agriculture Extension Officer than the low level adopters." Van den Ban (1965, p. 4) said that the progressive farmers "also occasionally decide to adopt new practices on the basis of discussion with extension officers."

Rogers (1962 A, pp. 80-83) indicated that more innovative farmers have the greatest degree of communication with their county agents and found that early adopters have "greater degree of contact with their county agents than do innovators or other adopter categories." Rogers (1958 and 1959) has reported similar findings in different research studies.

Bose (unpublished paper) reported no association between efficiency (adoption of new practices) and education, knowledge, contact, social status, and formal participation. Wilkening (1953, pp. 20-21) reported that those individuals who had adopted more farm practices made greater use of agency and mass media sources of information and less use of commercial and informal sources. A similar finding was reported by Lionberger (1955, p. 15). Farmers with higher adoption scores made greater use of the county agent and other agency sources of information.

Marsh and Coleman (1956, p. 592) found that farmers living in neighborhoods with a higher rate of adoption of new farm practices were more likely to use all other sources of information than neighbors and friends.

Bhosale (1960) found personal contacts to be the most effective method for changing the knowledge, attitude, skill, and behavior of the cultivators toward the acceptance of improved practices of vegetable gardens.

In the present study the relations between client-agent contact and innovativeness will be tested. It is expected that individuals with higher frequency of contacts with the change agents will have higher scores of innovativeness.

### Credibility and Innovativeness

In judging different sources of communication, individuals place different degrees of credibility on each judged source. Of course, it is possible to have a case in which two sources are evaluated or weighted similarly. According to Cohen (1964, p. 29) "While differences in the credibility of the source seems not to affect the learning of the content of a communication, they do appear to affect its acceptance."

Use of certain communication channels would be an indication of the credibility placed on them. Where there exists a positive relationship between agent and client and such a relationship is based primarily upon credibility, the possibility that a client will accept a new idea is higher than when the source is regarded as low in credibility. Dahling (1962, p. 123) reported that an idea spread so rapidly in communication engineering because the source of the idea was highly credible.

The importance of the degree of credibility is also pointed out by Castillo (1964, p. 12) who stated that "Many a farmer adopts a practice even with a minimum comprehension of all its ramifications because he has faith in the worker. . . . He has a high regard for the

college training that he possesses." If such a high credible source happens to be the extension agent through whom agricultural information has been passed to the individual members of the social system, it is expected that clients with high innovativeness scores consider the extension agent as a high credible source. Berelson and Steiner (1964, p. 537) stated that "The more credible the communicator is perceived to be, the less manipulative his intent is considered to be and the greater the tendency to accept his conclusions." Rogers (1962, p. 111) said that "Innovators have more favorable attitudes toward new ideas, use more technically accurate sources of information, and place more credibility in the sources than the average individual."

Sibley<sup>3</sup> reported that innovators in community development in Philippine villages were local teachers, who, although generally respected, were not looked upon by the local farmers as agricultural experts, so the entire agricultural phase of community development failed to be accepted. Furthermore, the "image of the agent as perceived by the innovation recipients, due to his ability of language, cultural understanding, technical competence and official affiliations" are among the factors that can influence the role of change agents in obtaining acceptance for their ideas.

According to the findings reported by Fliegel (1956, p. 290), Lionberger (1955, p. 15), Wilkening (1953, pp. 20-21), Rogers (1958, p. 144) and Copp (1956, p. 12) a consistency has been shown in the relationship between communication competence (a dimension of credibility) and technological change (adoption of farm practices). In the present study

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<sup>3</sup>Cited by Niehoff and Anderson, 1964, p. 23.



it is hypothesized that those individuals who consider change agents as their most credible sources will have higher innovativeness scores.

#### Favorability Toward Change Agents and Innovativeness

Hovland and others (1953, p. 35) suggested that "People tend not to expose themselves to communications from sources toward whom they have negative attitudes." Since communication exposure in most cases is selective in nature the attitude the receiver has with respect to the source and the message will affect the way in which the receiver evaluates them.

When, besides the two subjects of interaction, there is a third referent (object of communication), the acceptance of this referent by one of the interacting subjects depends on whether or not a positive relation exists between the two subjects. In other words, where F (farmer) has a positive relation with E (change agent), he will more likely accept I (innovation). This relation was found valid by Emery and Oesser (1958, p. 6) in the following case: "Where D was an agronomist and therefore regarded new pasture seed mixtures as important, those farmers who thought well of him and had frequent contact did adopt pasture innovations." Of course, the previous situation is an "ideal" one since not always a so well balanced situation, exists. For example, if F likes E but dislikes I or likes I but dislikes E, in solving this unbalanced situation several approaches will be performed, i.e., E changes or re-evaluates I; F re-evaluates I or E, E re-evaluates F, etc.

Other findings in this regard have been reported. Beal and Rogers (1958, p. 551) found that "Innovators and early adopters had more favorable attitudes toward agricultural scientists than did later adopters."

Saifney (1962) reported that better contacts and favorable attitude toward extension agencies were associated with higher adoption.

Rahuckar (1961) also stated that the attitude of farmers toward the Extension Service was highly associated with the adoption of new practices. He found that nearly half of the farmers having a favorable attitude toward Extension Services were high-level adopters while only one-tenth of the farmers having a negative attitude could be included in this category. On this basis it is hypothesized that favorability toward change agents is positively related to innovativeness.

### Hypotheses

From the foregoing theoretic rational and research evidence, the following general hypotheses are derived.

General Hypothesis I: Degree of credibility of change agent is inversely related to the magnitude of attribute-differentials.

General Hypothesis II: Degree of favorability toward change agent is inversely related to the magnitude of attribute-differentials.

General Hypothesis III: Degree of client-change agent contact is inversely related to the magnitude of attribute-differentials.

General Hypothesis IV: Degree of credibility of change agent is inversely related to social distance.

General Hypothesis V: Degree of favorability toward change agent is inversely related to social distance.

General Hypothesis VI: Degree of client-agent contact is inversely related to social distance.

General Hypothesis VII: Degree of social distance is directly related to the magnitude of attribute-differential.

General Hypothesis VIII: Degree of innovativeness is directly related to degree of credibility of change agents.

General Hypothesis IX: Degree of innovativeness is directly related to favorability toward change agents.

General Hypothesis X: Degree of innovativeness is directly related to client-agent contact.

Figure 1 shows a summary of the previously stated general hypotheses.

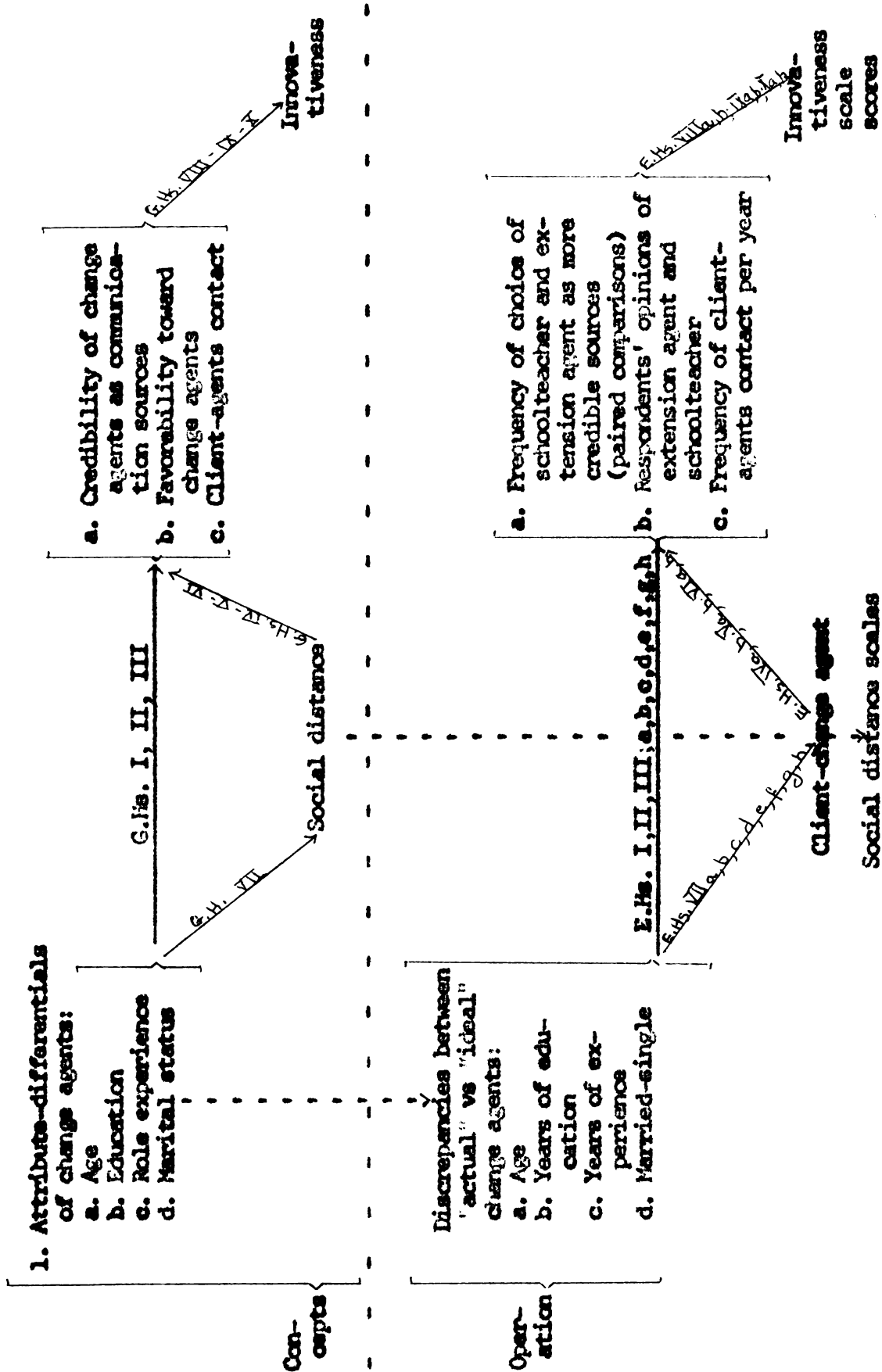


Fig. 1. Paradigm of client-change agents relationship.

## CHAPTER III

### METHODOLOGY

#### The Sample and the Study Setting

Data for the present study are part of a research project, conducted in Colombia since 1963, entitled "A Field Experiment on the Role of Opinion Leaders in the Diffusion of Innovations in Three Colombian Neighborhoods."<sup>4</sup> Pueblo Viejo and San Rafael are characterized by relatively modern norms on social change, while Cuatro Esquinas is relatively more traditional. All three villages are located within about 60 miles of Bogotá, in the foothills of the Andean Mountains in Central Colombia. Higher levels of functional literacy, adoption and urban contact typified the more modern villages.

#### Data Collection

Data were gathered from the head of each farm family by means of personal interviews. Interviewers were students from the Faculty of Sociology, Universidad Nacional de Colombia, who were selected on the basis of previous experience in field interviewing.

At Stage I (1963), 160 respondents from the three communities were interviewed. The objective for Stage II (1965) was to re-interview the same subjects. Only 136 respondents were contacted; the

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<sup>4</sup>This project was sponsored by the Programa Interamericano de Información Popular (PIIP), San Jose, Costa Rica; the Facultad de Sociología, Universidad Nacional de Colombia; and the Agricultural Development Council, New York. Data-gathering was completed in two stages (1) in October, 1963, and (2) in September, 1965.

remaining number of interviews were not conducted because of death, out-migration from the village, and inability to contact the villagers. Both stages were characterized by a 'census' of the population under study.

### The Interview Schedule

The interview schedule was prepared for the pre-test before the research team left for Colombia. While certain portions of the interview schedule were changed, the overall objectives remained essentially the same, except for the development and refinement of the measures of fatalism, dogmatism, interpersonal trust, empathy, cosmopolitaness, social participation, source credibility, and interpersonal relationships.

The interview schedule was a mixture of several scale items and direct questions. That part of the schedule concerned with the present study is presented in Appendix D, translated from Spanish into English.

### Pre-Test

The pre-test was done in Bojaca, a village similar in socio-cultural composition and physical location to the other three villages under study. The field work lead to rule outs, changes, and improvements in several of the items in the instrument.

### Operationalization of Variables

#### Attribute-Differentials

Attribute-differential is the magnitude of discrepancy that exists between "ideal" change agents' personal characteristics expected by their clients and the "actual" ones.

Attribute differential for each of the four characteristics under study were obtained as follows.

1. Age

"Ideal" age was obtained by asking the respondent what age he would like the extension agent and schoolteacher to have. "Actual" age refers to years of age that the extension agents and schoolteachers had at the moment of the study. "Discrepancies" were obtained by subtracting ideal age from actual age, regardless of direction.

2. Education

"Ideal" education was obtained by asking the respondent how many years of schooling he would like the extension agent and schoolteacher to have. "Actual" years of education refers to the number of years of schooling that the change agents reported they had. "Discrepancies" were obtained by subtracting one from the other, regardless of sign.

3. Role-Experience

"Ideal" role-experience was obtained by asking the respondent how many years of previous experience he would like the extension agent and schoolteacher to have. "Actual" years of role experience refers to the number of years that change agents reported to have worked in their professions. "Discrepancies" were obtained by subtracting one from the other, regardless of sign.

4. Marital Status

"Ideal" marital status was obtained by asking the respondents what marital status he would like the extension agent and the schoolteacher to have. "Actual" marital status refers to that reported by

the change agents. "Discrepancy" was obtained by matching both--actual and ideal. A score of "0" was given when discrepancy did not exist and a score of "1" when discrepancy was present.

### Social Distance

Social distance is the degrees of sympathetic understanding that exists between persons, or groups, or between a person and a group.

The concept was measured by a social distance scale with modified items from Bogardus (1928, p. 25). The five items used ranged from closeness by marriage to closeness by living with change agents in the same village. Bealer and others (1963, p. 70) indicated that "Indices of social distance have characteristically utilized the criterion of eligibility for kinship through marriage as indicative of complete social acceptability." The scale, composed of a number of items, indicates the relative extent to which a person is willing to accept another person as partner in different social activities.

The measurement of social distance is justified by Park (1950, p. 257):

The fact that we can distinguish degrees of intimacy suggests that we may be able eventually to measure "distance" in the sense in which that word is here used, quite as accurately as we now measure intelligence, since we do not know all the factors that determine intimacy.

Whether a scale is unidimensional is determined by computing its coefficient of reproducibility. Unidimensionality means that a series of items comprising a scale measures a single dimension. Reproducibility is the ability to duplicate the responses to each item by knowing the total score of a respondent.



Several techniques for testing unidimensionality have been developed. The Guttman method is the most commonly used technique. If a scale meets Guttman's criterion, each respondent's response to any scale item can be predicted with 90 per cent or more accuracy, and is accepted as scalable, knowing the respondent's total score. Less than 90 per cent reproducibility is evidence that the scale does not measure a single dimension.

When applied to the social distance scale used in the present study, the Guttman test of unidimensionality yielded a coefficient of reproducibility of 91 per cent, in the case of the extension agent.

When the schoolteacher was the referent in the application of the scale, the coefficient of reproducibility was 88 per cent.

#### Dependent Variables

This section will be organized listing first the general and the empirical hypothesis and then explaining how the dependent variables were operationalized.

#### General Hypothesis I

General Hypothesis I: Degree of credibility of change agents is inversely related to the magnitude of attribute-differentials.

Empirical Hypothesis Ia:<sup>5</sup> The greater the credibility of the extension agent the smaller the discrepancy between actual and ideal age of the extension agent.

Empirical Hypothesis Ib: The greater the credibility of the schoolteacher the smaller the discrepancy between actual and ideal age of the schoolteacher.

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<sup>5</sup>The wording of this and other similar empirical hypothesis should not imply that the first variable causes the second.

Empirical Hypothesis Ic: The greater the credibility of the extension agent the smaller the discrepancy between actual and ideal years of education of the extension agent.

Empirical Hypothesis Id: The greater the credibility of the schoolteacher the smaller the discrepancy between actual and ideal years of education of the schoolteacher.

Empirical Hypothesis Ie: The greater the credibility of the extension agent the smaller the discrepancy between actual and ideal years of experience of the extension agent.

Empirical Hypothesis If: The greater the credibility of the schoolteacher the smaller the discrepancy between actual and ideal years of experience of the schoolteacher.

Empirical Hypothesis Ig: The greater the credibility of the extension agent the smaller the discrepancy between actual and ideal marital status of the extension agent.

Empirical Hypothesis Ih: The greater the credibility of the schoolteacher the smaller the discrepancy between actual and ideal marital status of the schoolteacher.

Credibility is the degree to which an individual regards a source as accurate. The concept was measured through a paired comparison method. The extension agent and the schoolteacher were compared with each other on four sources of communication: radio, newspapers, neighbors, and salesman.

Examples of the pairs used in the personal interviews are:

"When you are aware of news about new agricultural techniques, which is more credible for you?":

\_\_\_ Neighbors or                      \_\_\_ Schoolteacher or  
 \_\_\_ Extension agent                      \_\_\_ Radio

A complete discussion and analysis of the paired comparisons method is provided in Appendix A.

Table 1 gives the number of choices, through paired comparisons, of each of the sources used.

Table 1. Frequency (F) matrix for six sources of information judged by 130 individuals in three Colombian villages

Sources	Preferred source of the pair					
	News- papers	Sales- men	Neigh- bors	Radio	School- teacher	Extension agent
Newspapers	---	90	72	97	98	118
Salesmen		---	65	74	104	110
Neighbors			---	75	90	104
Radio				---	62	92
Schoolteacher					---	84
Extension agent						---
	---	---	---	---	---	---
Total choices		90	137	246	292	508

### General Hypothesis II

General Hypothesis II: Degree of favorability toward change agents is inversely related to the magnitude of attribute-differentials.

Empirical Hypothesis IIa: The greater the favorability of opinions toward the extension agent the smaller the discrepancy between actual and ideal age of the extension agent.

Empirical Hypothesis IIb: The greater the favorability of opinions toward the schoolteacher the smaller the discrepancy between actual and ideal age of the schoolteacher.

Empirical hypothesis IIc: The greater the favorability of opinions toward the extension agent the smaller the discrepancy between actual and ideal years of education of the extension agent.

Empirical hypothesis IId: The greater the favorability of opinions toward the schoolteacher the smaller the discrepancy between actual and ideal years of education of the schoolteacher.

Empirical hypothesis IIe: The greater the favorability of opinions toward the extension agent the smaller the discrepancy between actual and ideal years of experience of the extension agent.

Empirical hypothesis IIff: The greater the favorability of opinions toward the schoolteacher the smaller the discrepancy between actual and ideal years of experience of the schoolteacher.

Empirical Hypothesis IIg: The greater the favorability of opinions toward the extension agent the smaller the discrepancy between actual and ideal marital status of the extension agent.

Empirical Hypothesis IIh: The greater the favorability of opinions toward the schoolteacher the smaller the discrepancy between actual and ideal marital status of the schoolteacher.

Favorability is the degree to which the referent is positively evaluated. Each respondent was asked "What opinion do the inhabitants of this village have of the Extension Agent?". Similar questions in reference to the schoolteacher. The scores ranged from "very bad" (1) to "very good" (5).

### General Hypothesis III

General Hypothesis III: Degree of client-agent contact is inversely related to the magnitude of attribute-differentials.

Empirical Hypothesis IIIa: The greater the amount of client-extension agent contact the smaller the discrepancy between actual and ideal age of the extension agent.

Empirical Hypothesis IIIb: The greater the amount of client-schoolteacher contact the smaller the discrepancy between actual and ideal age of the schoolteacher.

Empirical Hypothesis IIIc: The greater the amount of client-extension agent contact the smaller the discrepancy between actual and ideal years of education of the extension agent.

Empirical Hypothesis IIId: The greater the amount of client-schoolteacher contact the smaller the discrepancy between actual and ideal years of education of the schoolteacher.

Empirical Hypothesis IIIe: The greater the amount of client-extension agent contact the smaller the discrepancy between actual and ideal years of experience of the extension agent.

Empirical Hypothesis IIIf: The greater the amount of client-schoolteacher contact the smaller the discrepancy between actual and ideal years of experience of the schoolteacher.

Empirical Hypothesis IIIg: The greater the amount of client-extension agent contact the smaller the discrepancy between actual and ideal marital status of the extension agent.

Empirical Hypothesis IIIh: The greater the amount of client-schoolteacher contact the smaller the discrepancy between actual and ideal marital status of the schoolteacher.

Contact is the interaction between client and change agent.

Contact was measured by the number of times per year that the respondent reported he had talked with the extension agent or the schoolteacher for

the purpose of asking advise on agricultural issues.

#### General Hypothesis IV

General Hypothesis IV: Degree of credibility of change agents is inversely related to social distance.

Empirical Hypothesis IVa: The greater the credibility of the extension agent the smaller the client-extension agent social distance scores.

Empirical Hypothesis IVb: The greater the credibility of the schoolteacher the smaller the client-schoolteacher social distance scores.

Measures of credibility and social distance were discussed earlier in the present chapter.

#### General Hypothesis V

General Hypothesis V: Degree of favorability toward change agents is inversely related to social distance.

Empirical Hypothesis Va: The greater the favorability of opinions toward the extension agent the smaller the client-extension agent social distance scores.

Empirical Hypothesis Vb: The greater the favorability of opinions toward the schoolteacher the smaller the client-schoolteacher social distance scores.

Measures of favorability and social distance were explained earlier in the present chapter.

#### General Hypothesis VI

General Hypothesis VI: Degree of client-agent contact is inversely related to social distance.

Empirical Hypothesis VIa: The greater the amount of client-extension agent contact the smaller the client-extension agent social distance scores.

Empirical Hypothesis VIb: The greater the amount of client-schoolteacher contact the smaller the client-schoolteacher social distance scores.

Measures of contact and social distance were explained earlier in the present chapter.

#### General Hypothesis VII

General Hypothesis VII: Degree of social distance is directly related to the magnitude of attribute-differentials.

Empirical Hypothesis VIIa: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal age of the extension agent.

Empirical Hypothesis VIIb: The greater the social distance scores between client-schoolteacher the greater the discrepancy between actual and ideal age of the schoolteacher.

Empirical Hypothesis VIIc: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal years of education of the extension agent.

Empirical Hypothesis VIId: The greater the social distance scores between client-schoolteacher the greater the discrepancy between actual and ideal years of education of the schoolteacher.

Empirical Hypothesis VIIe: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal years of experience of the extension agent.

Empirical Hypothesis VIIIf: The greater the social distance scores between client-schoolteacher the greater the discrepancy scores between actual and ideal years of experience of the schoolteacher.

Empirical Hypothesis VIIg: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal extension agent's marital status.

Empirical Hypothesis VIIh: The greater the social distance scores between client-schoolteacher the greater the discrepancy between actual and ideal schoolteacher's marital status.

Measures of social distance and attribute-differentials were explained earlier in the present chapter.

#### General Hypothesis VIII

General Hypothesis VIII: Degree of innovativeness is directly related to degree of credibility of change agents.

Empirical Hypothesis VIIIA: Clients with high innovativeness scores will consider the extension agent as a more credible source than clients with low innovativeness scores.

Empirical Hypothesis VIIIB: Clients with high innovativeness scores will consider the schoolteacher as a more credible source than clients with low innovativeness scores.

Innovativeness is the degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system (Rogers, 1962, p. 19). Innovativeness was measured in the present study by computing scores indicating the composite time of adoption of sixteen new farm practices (fertilizers, insecticides, etc.).



### General Hypothesis IX

General Hypothesis IX: Degree of innovativeness is directly related to favorability of change agents.

Empirical Hypothesis IXa: Clients with high innovativeness scores will be more highly favorable toward the extension agent than clients with low innovativeness scores.

Empirical Hypothesis IXb: Clients with high innovativeness scores will be more highly favorable toward the schoolteacher than clients with low innovativeness scores.

Measures of innovativeness and favorability were described previously in the present chapter.

### General Hypothesis X

General Hypothesis X: Degree of innovativeness is directly related to client-agent contact.

Empirical Hypothesis Xa: Clients with high innovativeness scores will have more frequent contact with extension agent than clients with low innovativeness scores.

Empirical Hypothesis Xb: Clients with high innovativeness scores will have more frequent contact with the schoolteacher than clients with low innovativeness scores.

Measures of innovativeness and contact were described previously in the present chapter.

### Statistical Analysis

Data for all the hypotheses will be analyzed using zero-order product moment correlations.

Computations of first-order partial correlations will be done in order to determine the intervening properties of social distance in the relationship between attribute-differentials and contact, credibility and favorability.

## CHAPTER IV

### FINDINGS

The present chapter will present the tests of the general and empirical hypotheses stated in Chapter III.

#### General Hypothesis I

General Hypothesis I: Degree of credibility of change agents is inversely related to the magnitude of attribute-differentials.

Empirical Hypothesis Ia: The greater the credibility of the extension agent, the smaller the discrepancy between actual and ideal age of the extension agent. The zero-order correlation between credibility scores and extension agent's age discrepancy scores is  $-.116$ , which is less than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis Ia is not supported.

The first-order partial correlation between credibility scores and extension agent's age discrepancy scores controlling on social distance scores is  $-.075$  (not significantly different from zero),<sup>6</sup> which is not significantly different at the five per cent level from the zero-order correlation<sup>7</sup> between credibility scores and age discrepancy scores.

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<sup>6</sup>Significance from zero was tested by the  $t$  technique. See (McNemar, 1962, p. 167).

<sup>7</sup>The significance of the differences was obtained by transforming the  $r$ 's into  $Z$ s. Significant difference of the  $Z$ s means that the two  $r$ 's are significantly different (McNemar, 1962, pp. 139-140).

and extension agent's years of experience discrepancy scores controlling on social distance scores is  $-.092$  (not significantly different from zero), which is not significantly different at the five per cent level from the zero-order correlation between credibility scores and extension agent's years of experience discrepancy scores. This shows that social distance does not intervene the relationship between credibility and "actual-ideal" extension agent's years of experience

Empirical Hypothesis If: The greater the credibility of the schoolteacher, the smaller the discrepancy between actual and ideal years of experience of the schoolteacher. The zero-order correlation between credibility scores and schoolteacher's years of experience discrepancy scores is  $.042$ , which is less than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis If is not supported.

The first-order partial correlation between credibility scores and schoolteacher's years of experience discrepancy scores controlling on social distance scores is  $.037$  (not significantly different from zero), which is not significantly different at the five per cent level from the zero-order correlation between credibility scores and schoolteacher's years of experience discrepancy scores. This shows that social distance does not intervene the relationship between credibility and "actual-ideal" schoolteacher's years of experience.

Empirical Hypothesis Ig: The greater the credibility of the extension agent, the smaller the discrepancy between actual and ideal marital status of the extension agent. The zero-order correlation between credibility scores and extension agent's marital status discrepancy scores is  $-.094$ , which is less than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis Ig is not supported.

The first-order partial correlation between credibility scores and extension agent's marital status discrepancy scores controlling on social distance scores is .108 (not significantly different from zero), which is not significantly different at the five per cent level from the zero-order correlation between credibility scores and extension agent's marital status discrepancy scores. This shows that social distance does not intervene the relationship between credibility and "actual-ideal" extension agent's marital status.

Empirical Hypothesis 1h: The greater the credibility of the schoolteacher, the smaller the discrepancy between actual and ideal marital status of the schoolteacher. The zero-order correlation between credibility scores and schoolteacher's marital status discrepancy scores is .157, which is significantly different than the  $-.147$  required for significance at the five per cent level. Although significant, the correlation is in the opposite direction to that which was predicted, thus Empirical Hypothesis 1h is not supported.

The first-order partial correlation between credibility scores and schoolteacher's marital status discrepancy scores, controlling on social distance scores is .149 (not significantly different from zero), which is not significantly lower at the five per cent level from the zero-order correlation between credibility scores and schoolteacher's marital status discrepancy scores. This shows that social distance does not intervene the relationship between credibility and "actual-ideal" schoolteacher's marital status.

#### Conclusions for General Hypothesis I

Two empirical hypotheses following from General Hypothesis I

from the zero-order correlation between credibility scores and extension agent's years of education discrepancy scores. This shows that social distance does not intervene the relationship between credibility and actual-ideal extension agent's years of education.

Empirical Hypothesis Id: The greater the credibility of the schoolteacher, the smaller the discrepancy between actual and ideal years of education of the schoolteacher. The zero-order correlation between credibility scores and schoolteacher's years of education discrepancy scores is  $-.184$  which is more than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis Id is supported.

The first-order partial correlation between credibility scores and schoolteacher's years of education discrepancy scores controlling on social distance scores is  $-.195$  (significantly different from zero at the five per cent level), which is not significantly different at the five per cent level from the zero-order correlation between credibility scores and school-teacher's year of education discrepancy scores. This shows that social distance does not intervene in the relationship between credibility and "actual-ideal" schoolteacher's years of education.

Empirical Hypothesis Ie: The greater the credibility of the extension agent, the smaller the discrepancy between actual and ideal years of experience of the extension agent. The zero-order correlation between credibility scores and extension agent's years of experience discrepancy scores is  $-.155$  which is greater than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis Ie is supported.

The first-order partial correlation between credibility scores

were significant at the five per cent level: Empirical Hypothesis Id (when referring to the schoolteacher) and Empirical Hypothesis Ie (when referring to the extension agent). Therefore, General Hypothesis I is not supported, since six of the eight empirical hypotheses were not supported.<sup>8</sup> Social distance does not intervene in the relationship between credibility and attribute-differentials.

### General Hypothesis II

General Hypothesis II: Degree of favorability toward change agents is inversely related to the magnitude of attribute-differentials.

Empirical Hypothesis IIa: The greater the favorability of opinions toward the extension agent, the smaller the discrepancy between actual and ideal age of the extension agent. The zero-order correlation between favorability toward extension agent and extension agent's age discrepancy scores is  $-.250$ , which is more than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis IIa is supported.

The first-order partial correlation between favorability toward extension agent and extension agent's age discrepancy scores, controlling on social distance is  $-.221$  (significantly different from zero at the five per cent level) from the zero-order correlation between favorability toward extension agent and extension agent's age discrepancy scores. This shows that social distance does not intervene in the relationship between favorability toward extension agent and his actual-ideal age.

Empirical Hypothesis IIb: The greater the favorability of opinions toward the schoolteacher the smaller the discrepancy between

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<sup>8</sup>When all the empirical hypotheses are supported it is said that the general hypothesis is supported. When all four attributes are conformed regardless how they are distributed among the change agents, it is said that the general hypothesis is partially supported.

at the one per cent level, when referring to the schoolteacher. Empirical Hypothesis IIg was significant at the one per cent level but in the opposite direction to that predicted. Therefore, since five of the eight empirical hypotheses were not supported, General Hypothesis II is not supported.

Social distance does not intervene in the relationship between favorability of opinion toward extension agents and attribute-differentials.

### General Hypothesis III

General Hypothesis III: Degree of client-agent contact is inversely related to the magnitude of attribute-differentials.

Empirical Hypothesis IIIa: The greater the amount of client-extension agent contact the smaller the discrepancy between actual and ideal age of the extension agent. The zero-order correlation between client-extension agent frequency of contacts and extension agent's age discrepancy scores is  $-.073$ , which is less than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis IIIa is not supported.

The first-order partial correlation between client-extension agent frequency of contacts and extension agent's age discrepancy scores, controlling on social distance is  $-.034$  (not significantly different from zero), which is not significantly different at the five per cent level than the zero-order correlation between client-extension agent contact and his age discrepancy scores. This shows that social distance does not intervene the relationship between contact and actual-ideal extension agent's age.

Empirical Hypothesis IIb: The greater the amount of client-

between client-extension agent contact and extension agent's marital status discrepancy scores is  $-.009$ , which is less than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis IIIg is not supported.

The first-order partial correlation between client-extension agent contact and extension agent's marital status discrepancy scores, controlling on social distance is  $-.020$  (not significantly different from zero), which is not significantly different at the five per cent level from the zero-order correlation between client-extension agent contact and extension agent's marital status discrepancy scores. This shows that social distance does not intervene in the relationship between client-extension agent contact and actual-ideal extension agent's marital status.

Empirical Hypothesis IIIh: The greater the amount of client-schoolteacher contact the smaller the discrepancy between actual and ideal marital status of the schoolteacher. The zero-order correlation between client-schoolteacher contact and schoolteacher's marital status discrepancy scores is  $.153$ , which is statistically significant but in the direction opposite to that predicted. Empirical Hypothesis IIIh is not supported.

The first-order partial correlation between client-schoolteacher contact and schoolteacher's marital status, controlling on social distance is  $.147$  (not significantly different from zero), which is not significantly different from the zero-order correlation between client-schoolteacher contact and schoolteacher's marital status discrepancy scores. This shows that social distance does not intervene in the relationship between client-schoolteacher contact and actual-ideal school-



teacher's marital status.

### Conclusions for General Hypothesis III

Only Empirical Hypothesis IIIt was significant at the five per cent level, but in the opposite direction of that predicted. Since none of the eight empirical hypotheses was supported at the five per cent level, General Hypothesis III is not supported.

Social distance does not intervene in the relationship between client-change agents contact and attribute-differentials.

### General Hypothesis IV

General Hypothesis IV: Degree of credibility of change agents is inversely related to social distance.

Empirical Hypothesis IVa: The greater the credibility of the extension agent the smaller the client-extension agent social distance scores. The zero-order correlation between credibility of extension agent and client-extension agent social distance scores is  $-.172$ , which is more than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis IVa is supported.

Empirical Hypothesis IVb: The greater the credibility of the schoolteacher the smaller the client-schoolteacher social distance scores. The zero-order correlation between credibility of schoolteacher and client-schoolteacher social distance scores is  $-.102$ , which is less than the value  $-.147$ , required for significance at the five per cent level. Empirical Hypothesis IVb is not supported.

### Conclusions for General Hypothesis IV

One of the two empirical hypothesis was significant at the five

per cent level (Empirical Hypothesis IVa). Therefore, General Hypothesis IV is partially supported.

#### General Hypothesis V

General Hypothesis V: Degree of favorability toward change agents is inversely related to social distance.

Empirical Hypothesis Va: The greater the favorability of opinions toward the extension agent, the smaller the client-extension agent social distance scores. The zero-order correlation between favorability toward the extension agent and client-extension agent social distance scores is  $-.151$ , which is more than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis Va is supported.

Empirical Hypothesis Vb: The greater the favorability of opinions toward the schoolteacher, the smaller the client-schoolteacher social distance scores. The zero-order correlation between the favorability toward the schoolteacher and client-schoolteacher social distance scores is  $.104$ , which is less than the value  $-.147$  required for significance at the five per cent level. The Empirical Hypothesis Vb is not supported.

#### Conclusions for General Hypothesis V

One of the two empirical hypothesis was significant at the five per cent level (Empirical Hypothesis Va). Therefore, General Hypothesis V is partially supported.

#### General Hypothesis VI

General Hypothesis VI: Degree of client-agent contact is inversely related to social distance.

Empirical Hypothesis VIa: The greater the amount of client-

extension agent contact the smaller the client-extension agent social distance scores. The zero-order correlation between client-extension agent contact and client-extension agent social distance scores is  $-.152$ , which is more than the  $-.147$  required for significance at the five per cent level. Empirical Hypothesis VIa is supported.

Empirical Hypothesis VIb: The greater the amount of client-schoolteacher contact the smaller the client-schoolteacher social distance scores. The zero-order correlation between client-schoolteacher contact and client-schoolteacher social distance scores is  $-.000$ , which is less than the value  $-.147$  required for significance at the five per cent level. Empirical Hypothesis VIb is not supported.

#### Conclusions for General Hypothesis VI

One of the two empirical hypothesis was significant at the five per cent level (Empirical Hypothesis VIa). Therefore, General Hypothesis VI is partially supported.

#### General Hypothesis VII

General Hypothesis VII: Degree of social distance is directly related to the magnitude of attribute-differentials.

Empirical Hypothesis VIIa: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal age of the extension agent. The zero-order correlation between client-extension agent social distance scores and extension agent's age discrepancy scores is  $.258$ , which is more than the  $.147$  required for significance at the one per cent level. Empirical Hypothesis VIIa is supported.

Empirical Hypothesis VIIb: The greater the social distance

scores between client-schoolteacher the greater the discrepancy between actual and ideal age of the schoolteacher. The zero-order correlation between client-schoolteacher social distance scores and schoolteacher's age discrepancy scores is  $-.046$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIb is not supported.

Empirical Hypothesis VIIc: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal years of education of the extension agent. The zero-order correlation between client-extension agent social distance scores and extension agent's years of education discrepancy scores is  $-.031$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIc is not supported.

Empirical Hypothesis VIId: The greater the social distance scores between client-schoolteacher the greater the discrepancy between actual and ideal years of education of the schoolteacher. The zero-order correlation between client-schoolteacher social distance scores and schoolteacher's years of education is  $-.089$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIId is not supported.

Empirical Hypothesis VIIe: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal years of experience of the extension agent. The zero-order correlation between client-extension agent social distance scores and extension agent's years of experience discrepancy scores is  $.143$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIe is not supported.

Empirical Hypothesis VIIf: The greater the social distance scores between client-schoolteacher the greater the discrepancy scores between actual and ideal years of experience of the schoolteacher.

The zero-order correlation between client-schoolteacher social distance scores and schoolteacher's years of experience discrepancy scores is  $-.053$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIf is not supported.

Empirical Hypothesis VIIg: The greater the social distance scores between client-extension agent the greater the discrepancy between actual and ideal extension agent's marital status. The zero-order correlation between client-extension agent social distance scores and extension agent's marital status discrepancy scores is  $.073$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIg is not supported.

Empirical Hypothesis VIIh: The greater the social distance scores between client-schoolteacher the greater the discrepancy between actual and ideal schoolteacher's marital status. The zero-order correlation between client-schoolteacher social distance scores and schoolteacher's marital status discrepancy scores is  $-.088$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIh is not supported.

#### Conclusions for General Hypothesis VII

Only one empirical hypothesis following from General Hypothesis VII was significant at the five per cent level (Empirical Hypothesis VIIa). Therefore, General Hypothesis VII is not supported.

#### General Hypothesis VIII

General Hypothesis VIII: Degree of innovativeness is directly

related to degree of credibility of change agents.

Empirical Hypothesis VIIIa: Clients with high innovativeness scores will consider the extension agent as a more credible source than clients with low innovativeness scores. The zero-order correlation between innovativeness scores and the credibility scores for the extension agent is  $-.072$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIIa is not supported.

Empirical Hypothesis VIIIb: Clients with high innovativeness scores will consider the schoolteacher as a more credible source than clients with low innovativeness scores. The zero-order correlation between innovativeness scores and credibility scores for schoolteacher is  $.090$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis VIIIb is not supported.

#### Conclusions for General Hypothesis VIII

Neither of the two empirical hypothesis were supported at the five per cent level. Therefore, General Hypothesis VIII is not supported.

#### General Hypothesis IX

General Hypothesis IX: Degree of innovativeness is directly related to favorability of change agents.

Empirical Hypothesis IXa: Clients with high innovativeness scores will be more highly favorable toward the extension agent than clients with low innovativeness scores. The zero-order correlation between innovativeness scores and favorability scores toward the extension agent is  $-.114$ , which is less than the  $.147$  required for significance at the five per cent level. Empirical Hypothesis IXa is not supported.

Empirical Hypothesis IXb: Clients with high innovativeness scores will be more highly favorable toward the schoolteacher than clients with low innovativeness scores. The zero-order correlation between innovativeness scores and favorability scores toward the schoolteacher is .210, which is more than the .147 required for significance at the five per cent level. Empirical Hypothesis IXb is supported.

#### Conclusions for General Hypothesis IX

One of the empirical hypothesis was significant at the five per cent level (Empirical Hypothesis IXb). Therefore, General Hypothesis IX is partially supported.

#### General Hypothesis X

General Hypothesis X: Degree of innovativeness is directly related to client-agent contact.

Empirical Hypothesis Xa: Clients with high innovativeness scores will have more frequent contact with extension agent than clients with low innovativeness scores. The zero-order correlation between innovativeness scores and clients' frequency of contact with extension agent scores is -.086, which is less than the .147 required for significance at the five per cent level. Empirical Hypothesis Xa is not supported.

Empirical Hypothesis Xb: Clients with high innovativeness scores will have more frequent contact with the schoolteacher than clients with low innovativeness scores. The zero-order correlation between innovativeness scores and clients' frequency of contact with school teacher is -.058, which is less than the .147 required for significance at the Five per cent level. Empirical Hypothesis Xb is not supported.

#### Conclusions for General Hypothesis X

Neither of the two empirical hypothesis was significant at the five per cent level. Therefore, General Hypothesis X is not supported.

CHAPTER V  
SUMMARY AND CONCLUSIONS  
Summary

The purpose of the present study was to determine the relationships between attribute-differentials (age, education, role experience, and marital status), social distance, and attitudinal and behavioral variables (credibility, favorability, contact and innovativeness) within the context of client-change agent relationships.

The population studied was 136 farmers in three Colombian villages (Pueblo Viejo, San Rafael, and Cuatro Esquinas). Data used in the present study were part of a larger research study labeled "A Field Experiment on the Role of Opinion Leaders in the Diffusion of Innovations in Three Colombian Neighborhoods." Zero-order correlations were utilized to test the ten major hypotheses. Additional tests were made for determining possible intervening properties of social distance in the relationship between attribute-differentials and credibility, favorability, and contact with change agents.

Objectives

The main objectives of the present study were (1) to determine the range of variation between "ideal" change agents' characteristics and "actual" change agents' characteristics in the population studied, (2) to determine the range of variation of social distance between change agents and clients, as perceived by the clients, (3) to determine how



change agents' characteristics and client-agent social distance are related to clients' attitudes and behavior toward change agents.

### Findings

Ten general hypothesis were tested. The major findings with respect to the extension agent and the schoolteacher are listed as follows:

1. The general hypothesis that credibility of change agents is inversely related to the magnitude of the attribute-differentials was:
  - a. Not supported, for either the extension agent or for the schoolteacher, when referring to age.
  - b. Supported for the schoolteacher, but not supported for the extension agent, when referring to education.
  - c. Supported for the extension agent, but not supported for the schoolteacher, when referring to role-experience.
  - d. Not supported, for either the extension agent or for the schoolteacher, when referring to marital status.
2. The general hypothesis that favorability toward change agents is inversely related to the magnitude of the attribute-differentials was:
  - a. Supported for both the extension agent and the schoolteacher, when referring to age.
  - b. Not supported for either the extension agent or the schoolteacher, when referring to education.
  - c. Supported the extension agent, but did not support the schoolteacher, when referring to role-experience.
  - d. Not supported for either the extension agent or the schoolteacher, when referring to marital status.

3. The general hypothesis that the degree of client-agent contact is inversely related to the magnitude of attribute-differentials was:

- a. Not supported for either the extension agent or the school-teacher, when referring to age.
- b. Not supported for either the extension agent or the school-teacher, when referring to education.
- c. Not supported for either the extension agent or the school-teacher, when referring to role-experience.
- d. Not supported for either the extension agent or the school-teacher, when referring to marital status.

4. The general hypothesis that the credibility of change agents is inversely related to client-agent social distance was supported for the extension agent but not supported for the schoolteacher.

5. The general hypothesis that the favorability toward change agents is inversely related to client-agent social distance was supported for the extension agent but not supported for the schoolteacher.

6. The general hypothesis that the amount of client-agent contact is inversely related to client-agent social distance was supported for the extension agent but not supported for the schoolteacher.

7. The general hypothesis that client-agent social distance is directly related to the magnitude of the attribute-differentials was:

- a. Supported for the extension agent but not supported for the schoolteacher, when referring to age.
- b. Not supported for either the extension agent or the school-teacher, when referring to education.

c. Not supported for either the extension agent or the schoolteacher, when referring to role-experience.

d. Not supported for either the extension agent or the schoolteacher, when referring to marital status.

8. The general hypothesis that innovativeness is directly related to credibility of change agents was not supported for either the extension agent or the schoolteacher.

9. The general hypothesis that innovativeness is directly related to favorability toward change agents was supported for the schoolteacher but not supported for the extension agent.

10. The general hypothesis that innovativeness is directly related to amount of client-agent contact was not supported for either the schoolteacher or the extension agent.

Social distance was shown not to intervene in the relationship between attribute-differentials and credibility, attribute-differentials and favorability toward change agents, and attribute-differentials and client-change agent contact.

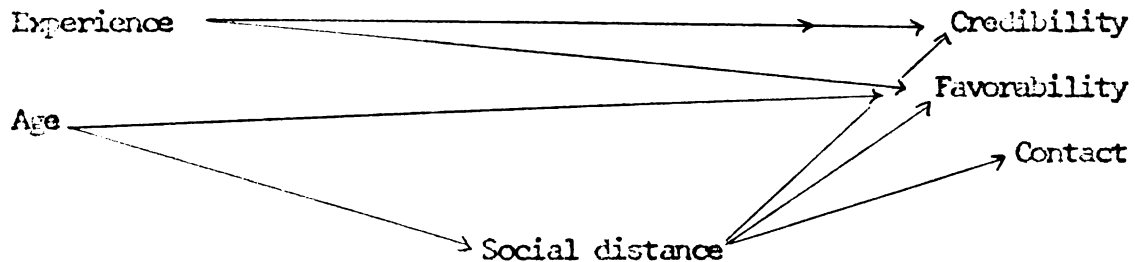
### Conclusions

Two types of change agents were studied in the present research: the extension agent and the schoolteacher. Each type of change agent will now be discussed separately in an attempt to derive conclusions from the study.

#### Extension Agent

From the extension agent's characteristics, age was shown to be related to favorability toward him and the social distance between him and his clients. Experience was related to favorability and credibility.

Social distance was related to favorability, credibility, and contact. In graphic form, without assuming, cause-effect order, these relationships can be described as follows:



Age was related to social distance, and social distance was related to credibility, favorability and contact. But, social distance was found to have no intervening properties in the relationship between age and credibility, favorability, and contact. This suggests that there could be other factors than the characteristics of change agents here studied, that determine social distance and its possible implications for its relationship with attitudinal and behavioral variables.

Experience of the extension agent was shown to be related to credibility and favorability. This result supports our original hypotheses. Also, support for our original hypotheses come from the significant relationship between social distance and credibility, favorability and contact.

On the other hand, education, age, experience, and marital status were shown not to be related to contact with the extension agent. Thus it seems that other variables, rather than the four extension agent's personal characteristics, may account for client-agent contact. Since

social distance was significantly related to contact it is possible that factors determining social distance, may be important predictors of contact.

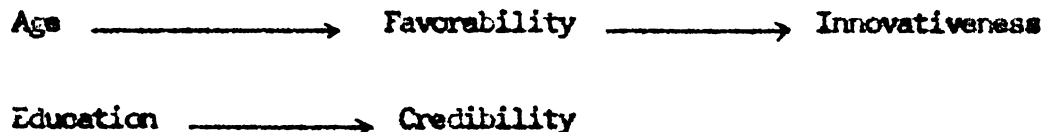
Credibility was not significantly related to age, education and marital status of the extension agent. It is necessary then, to find other variables than can be related to credibility. Perhaps one could approach the study of credibility of the extension agent in terms of his perceived trustworthiness, expertness, and accessibility as a source. It is also possible that the measure used for credibility in the present study (paired comparisons) is useful only as a primary selective tool in locating different sources in a psychological continuum but not to establish, for a particular source, why it is credible and which factors are associated with it.

Generally speaking, in dealing with the extension agent, except in some particular cases, the personal characteristics and their perception by his clients were not shown to be relevant in their relationship with attitudinal and behavioral variables. Other results, different from what were predicted, show that innovativeness is not related to contact, favorability and credibility. These results were consistent for both the extension agent and the schoolteacher. In respect to the former, it is the author's feeling that the measures used for innovativeness are useful for measure innovativeness per se, but not for its relationship with variables concerning specifically the extension agent. In other words, if we want to relate credibility, contact, and favorability toward a change agent to innovativeness, it would be better to use innovations promoted by that change agent. The innovativeness scores were obtained from a variety of agricultural innovations which the

respondents, in most of the cases, have promoted by several sources only one of which is the extension agent.

### Schoolteacher

Only two of the four personal characteristics of the schoolteacher were significantly related to other variables. Age was significantly related to favorability, education to credibility, and favorability to innovativeness. In graphic form, these relationships can be represented as follows:



All these relationships were significant in the expected direction supporting our original hypotheses. Marital status was significantly related to credibility of the schoolteacher, but the finding came in the opposite direction to that which was predicted.

Except in two instances (the relationships of age with favorability and education with credibility), the schoolteacher's personal characteristics used in the present study were not significantly related to social distance, credibility, favorability, and contact. This suggests that these variables were not relevant for purposes of hypothesized relationships, or they really do not affect other variables dealing with client-agents relationship.

Social distance was also shown not to be significantly related to credibility, contact, and favorability. Since the personal characteristics were shown not to be significantly related to social distance other factors ought to be investigated in this regard.

Perhaps the main reason for failing to establish the expected relationships among several variables concerning the schoolteacher is due to his own role. The farmers, who are mainly involved in agriculture, do not perceive the schoolteacher's role as concerned with agriculture. There is, then, a differentiation of roles and functions between the extension agent and the schoolteacher. The clients do not perceive education as one of the extension agent's function as well as they do not perceive agriculture as one of the schoolteacher's function. Perhaps this can explain why some variables are relevant for the one role and not for the other.

#### Future Research

Some of the findings of the present study are suggestive of further research.

1. It was found that client-extension agent social distance is related to credibility, favorability and contact. At the same time, the findings showed that the extension agent's personal characteristics (except age) were not related to social distance. It is suggested, then, that research dealing with other factors associated to social distance, and if possible, determinant of it, be carried out. Literature on social distance, prejudice and discrimination has pointed out that race, nationality, religion, and occupation are four of the more relevant factors influencing social distance. Particularly for change agents, factors such as status, race, ability to adjust to the social system client, attitudes toward clients as perceived by them, ability to communicate in the same social system language, rural-urban background, prestige, and so on, may be tested for possible relationships with social distance.

2. The method of paired comparisons, used for measuring credibility of different sources of communication, was limited to discriminating the "weight" of each source along a psychological continuum (see Appendix A). It is the feeling of the author, that a necessary next step is to further discriminate each source according to various factors of credibility. One might attempt to predict differential evaluation of information sources using the dimensions of "expertness," "trustworthiness" and "accessibility."

3. The index used for measuring contact with change agents in the present study, in the author's opinion, could have been more adequate. It seems necessary to discriminate between client-agent contact, based upon client's own willingness to establish interaction, and agent-client contact in which interaction is established without considering if the client wishes such interaction. In the first case, an example would be the client who goes to the extension agent asking for advice. In the second case, an example could be the contact resulting from visits by the extension agent to the client without the latter having taken the first step to establish the contact, i.e., agent-initiated contact.

4. Also, it is suggested that when dealing with change agents' characteristics as related to innovativeness, scores for the later variable should be taken from innovations introduced or promoted by the change agent. In this way it would be possible to determine more clearly, what influence the change agents' characteristics have on the adoption or rejection of new ideas.

5. Finally, the failure to establish the expected relationship among some of the variables included in the present study might be due (1) to possible inadequacy in the indexes, and (2) selection of irrelevant



variables (such as personal characteristics) to be related to other attitudinal and behavioral variables.

### Implications for Action

With the exception of experience, the extension agent's personal characteristics do not appear to affect the clients' innovative behavior and their attitudes toward him. After the extension agent has been in the community for a time it is unlikely that his personal characteristics per se, will be taken into account. Rather, other more relevant personality factors of the agent will be more salient for his clients since their interest is concerned in the way in which the extension agent performs his role to obtain his clients' benefits.

Such is the case of the extension agent's experience. For the respondents in the present study, years of experience of the extension agent was a relevant variable. Perhaps they do not base their judgment on how many years the extension agent has been performing his role, but perhaps how efficiently he does it. To show to his clients that he is able to perform his job efficiently may affect how well what he says will be accepted. In that token, change agents must be capable of doing their work adequately and be able to demonstrate that they have the skills, experience, and practice sufficient to acquire the confidence of their clients.

## APPENDIX A

### PAIRED COMPARISONS ANALYSIS OF SOURCE CREDIBILITY AMONG PEASANTS

## INTRODUCTION

One of the items contained in the interview schedule had to do with the credibility of different sources of agricultural information. The method of analysis used was that of Paired Comparisons judgments in which responses to 6 sources or "stimuli" were elicited, making a total of 15 possible pairs.<sup>1</sup> The sources were: radio, newspapers, salesmen, neighbors, schoolteacher, and extension agent. The question asked and the presentation of the possible combinations were as follow:

"34. When you are aware of news about new agricultural techniques, which is more credible for you?"

___ Radio, or	___ Schoolteacher, or	___ Neighbors, or
___ Newspapers	___ Extension Agent	___ Salesmen
___ Extension Agent, or	___ Salesmen, or	___ Newspapers, or
___ Radio	___ Schoolteacher	___ Neighbors
___ Schoolteacher, or	___ Neighbors, or	___ Radio, or
___ Newspapers	___ Extension Agent	___ Salesmen
___ Neighbors, or	___ Newspapers, or	___ Schoolteacher, or
___ Schoolteacher	___ Extension Agent	___ Radio
___ Salesmen, or	___ Extension Agent, or	___ Radio
___ Newspapers	___ Salesmen	___ Neighbors

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<sup>1</sup>Total number of pairs is given by the formula:  $nC2 = \frac{n(n-1)}{2}$

The presentation of the stimulus pairs must follow two criteria.

1. The position of the members of the pair should be alternated. In the previous example if in the first instance radio should appear above the other member of the pair then the next time radio is one of the elements being compared it should appear below that with which it is being compared, and the next time on top, and so on. If the members of the pairs are presented side by side, then alternate on a left-right basis.
2. No member of a comparison should be presented in two successive pairs.

The purpose of this second phase in the study was to re-interview the same 160 respondents of the first phase. Of the original sample of 160 a total of 130 were successfully re-interviewed. The data presented here correspond to those 130 subjects.

Credibility was defined as the degree to which an individual regards as accurate a source of communication. The present study does not attempt to distinguish the dimensions safety, qualification and dynamism as suggested by Lemert.<sup>2</sup>

The data will be submitted to:

1. Scale value analysis
2. Graphical representation of the scale characteristics
3. Significance test for scale characteristics
4. The computation of the Coefficient of Consistency

#### Paired Comparison Analysis

Paired comparisons is a method used in order to know how people judge several stimuli, taking two at a time, and how they arrange them in order according to the "weight" that each stimuli has for the

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<sup>2</sup>J. B. Lemert, Dimensions of Source Credibility, A paper presented to the Association for Education in Journalism, Syracuse, New York, August, 1963.

individual. This order of stimuli based upon individual judgment is called a psychological continuum.

Thurstone has been the main contributor to the analysis of the psychological continuum. In recent years since interest has been focused on relating scale values of stimuli to the psychological scale values themselves rather than to those on a physical continuum, the methods have been called psychological scaling methods. So, "The problem of psychological scaling is then to determine whether the  $n$  stimuli can be ordered on a psychological continuum with respect to the degree of the attribute each possesses." (Edwards, 1957, p. 20).

In our case we do not have a physical continuum that would help us in determining the degree of favorableness expressed by each of the sources, but we can determine if they will scale along a psychological continuum from least to most credible. Our six stimuli (sources) are: radio, newspapers, salesmen, schoolteacher, extension agent, and neighbors. Note that while we call these suppliers of information "sources," they are really a mixture of sources and media. Since they are all suppliers of information, however, we will treat them as being similar phenomena. To avoid confusion we will refer to these phenomena as sources rather than media from now on.

#### Schematic Presentation of Data

Table I gives the frequency with which each column stimulus (top of table) was judged more credible than the row stimulus (left side of table). The diagonal entries involving a comparison of each source with itself are assumed to be equal to  $N/2$ . The total number of comparative judgments for each pair of sources is 130, the number of individuals

making the judgments. In Appendix A, Tables I, II and III, are shown here with all entries above and below diagonal entries in order to check possible errors in computing the data. In most presentations, only the entries above the diagonal or below it are shown since they complement each other. For example, our N is equal to 130 subjects. In Appendix A, Table I entry 1-4 is equal to 33 and entry 4-1 is equal to 97. Adding both the result must be equal to 130. This occurs because if, within 130 judgments, 33 prefer 1 over 4, (in judging this particular pair), the remainders should prefer 4 over 1.

Appendix A - Table I. Frequency (F) matrix for 6 sources of information judged by 130 individuals in three Colombian villages

Sources	Preferred source of the pair						Sums
	News- papers (1)	Sales- men (2)	Neigh- bors (3)	Radio (4)	School- teacher (5)	Extension agent (6)	
(1) Newspapers	65	30	72	97	98	118	540
(2) Salesmen	40	65	65	74	104	110	458
(3) Neighbors	58	65	65	75	90	104	457
(4) Radio	33	56	55	65	82	92	383
(5) Schoolteacher	32	26	40	48	65	84	295
(6) Extension agent	<u>12</u>	<u>20</u>	<u>26</u>	<u>38</u>	<u>46</u>	<u>65</u>	<u>207</u>
Sums	240	322	323	397	485	573	2,340

Appendix A - Table II shows proportion of times each column stimulus was judged more credible than the row stimulus. The proportions were obtained by dividing the cell entries of Appendix A - Table I by N (130). To check if data are correct, row stimulus plus its respective column stimulus must be equal 1. For example, row stimulus 4-1 is equal to .254 and column stimulus 4-1 is equal to .746. Row stimulus .254 plus column stimulus .746 is equal to 1.000.

Appendix A - Table II. Proportion (P) matrix corresponding to the "F" matrix of Table I

Sources	News- papers (1)	Sales- men (2)	Neigh- bors (3)	Radio (4)	School- teacher (5)	Extension agent (6)
(1) Newspapers	.500	.692	.554	.746	.754	.908
(2) Salesmen	.308	.500	.500	.569	.800	.846
(3) Neighbors	.446	.500	.500	.577	.692	.800
(4) Radio	.254	.431	.423	.500	.631	.708
(5) Schoolteacher	.246	.200	.308	.369	.500	.646
(6) Extension agent	.092	.154	.200	.292	.354	.500
Sums	1.846	2.477	2.485	3.053	3.731	4.408

Note that in Appendix A - Tables I and II we have arranged the sources from the least to the most credible according to the "votes" received by each one. This order is essential in knowing the distribution of the various sources and for further analysis of data. Newspapers are the least and extension agent the most highly regarded sources of information with the others distributed in between. In other words, we have a rank order of the sources according to degree of credibility. From now on we can identify each source with the respective number shown in Appendix A - Tables I and II.

#### Scale Values

When a stimulus is presented to a subject, we expect some reaction from him toward the stimuli. This is called a modal discriminial process which Edwards defines as a "theoretical concept and represents the experience or reaction of an individual when confronted with Stimulus i and asked to make a judgment of some attribute." (Edwards, 1957, p. 21)

The distribution of all discriminial processes is assumed to be normal about the modal discriminial processes. The mean or median

discriminal process associated with a specific stimulus is taken as the scale value of the stimulus. The standard deviation of the distribution of discriminial processes is called the discriminal dispersion or dispersion of the discriminial processes for such stimulus. In finding scale values equality of the discriminial dispersions is assumed.

Appendix A - Table III gives the Z values of the "P" matrix. The scale values of the different sources in terms of its deviation from the mean of all of the scale values is given by the means of the "Z" values.

Appendix A - Table III. "Z" matrix corresponding to the "P" matrix of Table II

Sources	1	2	3	4	5	6
1	.000	.502	.136	.662	.687	1.329
2	-.502	.000	.000	.174	.842	1.019
3	-.136	.000	.000	.194	.502	.842
4	-.662	-.174	-.194	.000	.335	.548
5	-.687	-.842	-.502	-.335	.000	.375
6	<u>-1.329</u>	<u>-1.019</u>	<u>-.842</u>	<u>-.548</u>	<u>-.375</u>	<u>.000</u>
(1) Sums	-3.316	-1.533	-1.402	.147	1.991	4.113
(2) Means	-.553	-.256	-.234	.25	.332	.686
(3) Means + .553	.000	.297	.319	.578	.885	1.239

The mean of each column of the Z values expresses the scale value of each of the six sources of information. As a check, the sum of the scale values should be equal to zero. It is possible to make the scale values positive without changing the distance between any of the scale values nor the relative location of them on the psychological continuum by changing the largest negative scale value to a positive number and adding that value to each of the scale values [See (3) bottom of Appendix A - Table III]. With this mathematical manipulation we have now obtained



an interval scale of the perceived credibility of six agricultural information sources as shown in Figure 2.

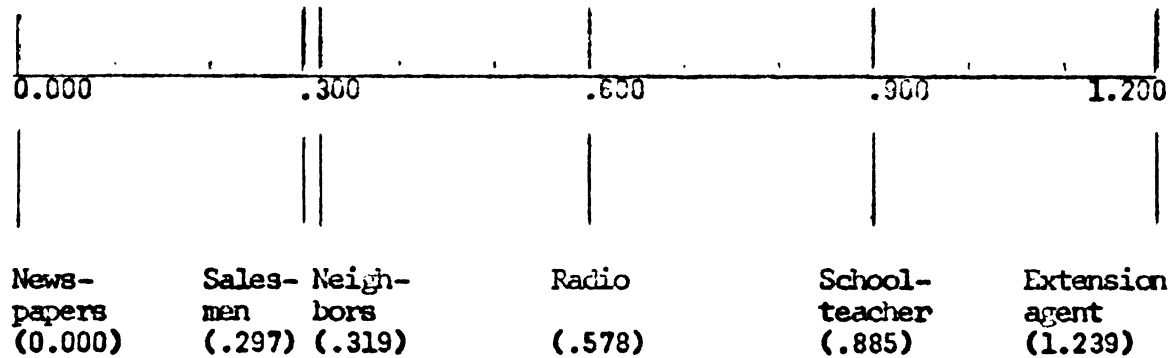


Fig. 2. Paradigm of interval scale

Except for the difference between salesman and neighbors it would appear that the judged intervals between sources is almost equal (approximately 3 units).

### Scale Characteristics

#### Assumptions

Scales constructed according to the Case V model of the method of paired comparisons have three assumptions.

1. Normality of distribution of the discriminial processes
2. Unidimensionality of the psychological continuum
3. Equality of the various values of the standard deviations of the differences (Homogeneity of variance)

Of the three assumptions those of unidimensionality and homogeneity of variance are of most concern. Except where distributions very markedly deviate from normality tests of significance are relatively insensitive

to non-normality.

The assumptions of unidimensionality and homogeneity of variance are subject to inspection in two ways. The first is a graphical method, that of plotting the Z values in the Z matrix (Table III) against the scale values. The second method is that of a significance test. First the graphical method.

#### Graphical Method

On a piece of graph paper draw an abscissa and an ordinate plotting the scale values on the abscissa and the Z values (Table III) on the ordinate. For each scale value plot on the graph the Z values for each source separately. For example, for Source 1 plot the coordinates:

.000	-	.000
.297	-	.502
.319	-	.136
.578	-	.662
.825	-	.687
1.239	-	1.329

Do the same procedure for each of the 6 sources. By so doing we shall end up with 6 regression lines, one for each source (See Figure 3).

Hopefully we shall obtain a set of parallel regression lines. The fact that such lines are parallel indicates the correlations are equal

( $r_{12} = r_{13} = r_{1n}$ ), hence we have both unidimensionality and equal variances (homogeneity of variance). The regression lines in Figure 3 though drawn parallel to each are in fact very nearly parallel in reality. If one were to compute the slope of each regression line and plot them (as in Guilford, p. 127) one would undoubtedly obtain remarkably similar regression lines. This visual technique is very useful and easily accomplished.



### Significance Test

It is possible to do a test of significance for the discrepancies between the observed and theoretical proportions. Mosteller (1951) developed a  $\chi^2$  test for such a purpose. The test of significance is a means of determining whether the assumptions involved in the case under study are tenable for a given set of data. These assumptions are, again:

1. Normality of distribution of the discriminial processes
2. Unidimensionality of the psychological continuum
3. Equality of the various values of the standard deviations of the differences

The null hypothesis can be stated by saying that the assumptions expressed are tenable. The alternative to the null hypothesis is that the null hypothesis is incorrect. The following tables and operations show the results of such a test of significance with our data under study. In general, the test is based upon the transformation of both the theoretical and observed proportions (the inverse size transformation, developed by Fisher, 1922).

Values for entries in the cells in Appendix A - Tables IV and V are provided by a table of the angular transformation of percentages to degrees (see Edwards, Table II, pp. 248-250).

Appendix A - Table IV. Values of  $\theta$  corresponding to the empirical proportions - p - of Table II

Sources	1	2	3	4	5	6
1	-----					
2	33.71	-----				
3	41.90	45.00	-----			
4	30.26	41.03	40.57	-----		
5	29.73	26.56	33.71	37.41	-----	
6	17.66	23.11	26.56	32.71	36.51	-----



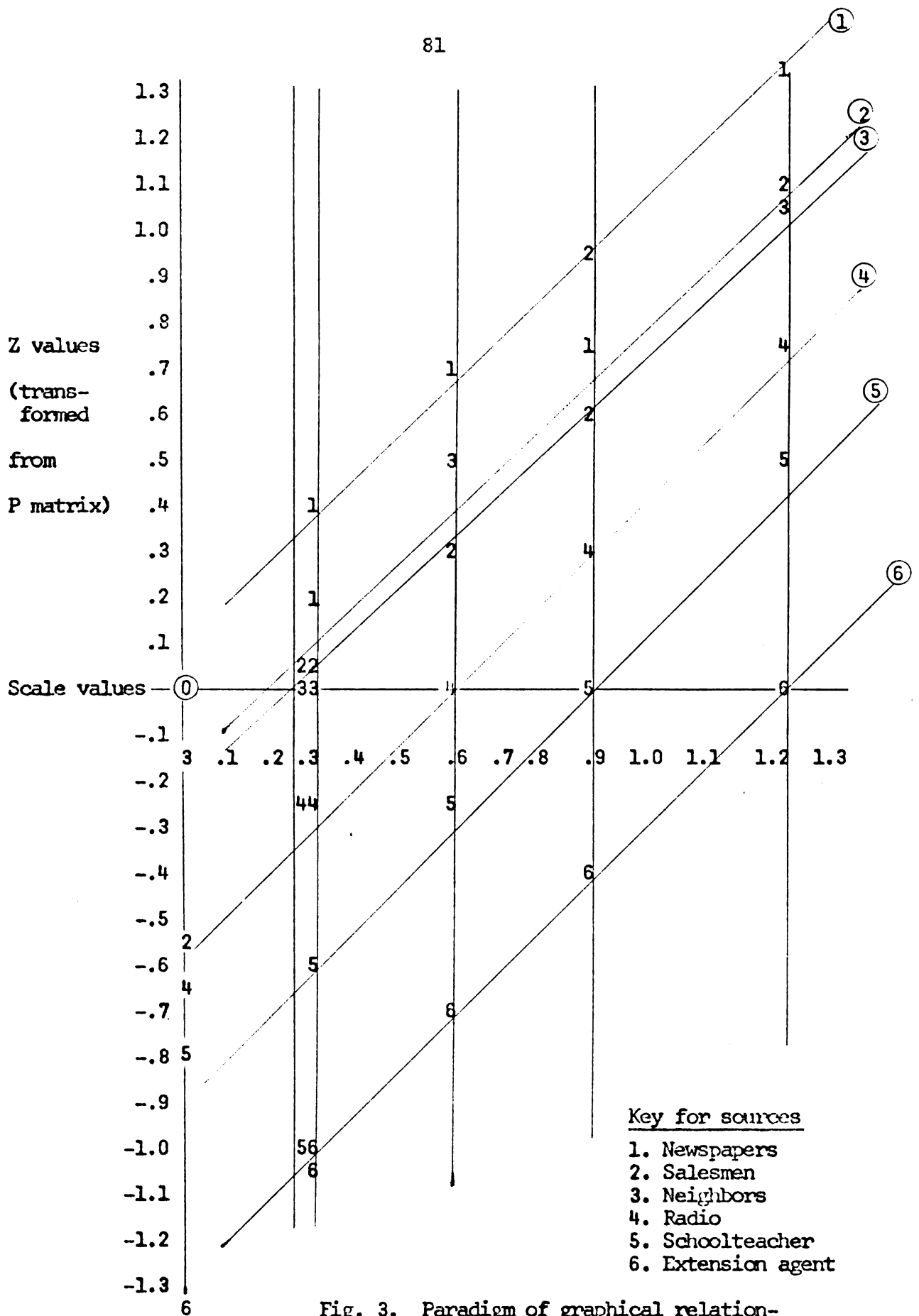


Fig. 3. Paradigm of graphical relationships between scale values and Z values

Appendix A - Table V. Values of  $\theta'$  corresponding to the theoretical proportions -  $p'$  - of Table III

Sources	1	2	3	4	5	6
1	-----					
2	38.23	-----				
3	37.76	44.48	-----			
4	32.08	38.59	39.11	-----		
5	25.70	31.82	32.33	38.00	-----	
6	19.19	24.58	25.03	30.26	36.99	-----

Appendix A - Table VI. Discrepancies in values  $\theta - \theta'$  for entries in Table IV and V

Sources	1	2	3	4	5	6
1	-----					
2	-4.52	-----				
3	4.14	0.52	-----			
4	-1.82	2.44	1.46	-----		
5	4.03	-5.26	1.38	-0.59	-----	
6	1.53	-1.47	1.53	2.45	-0.48	-----

The formula used in order to obtain the value of  $\chi^2$  is:

$$\chi^2 = \frac{(\theta - \theta')^2}{\frac{821}{N}}$$

$$\text{or } \chi^2 = \frac{108.4746}{6.32} = 17.16$$

The degrees of freedom are given by:

$$df = \frac{(n-1)(n-2)}{2}$$

$$\text{or } df = \frac{(6-1)(6-2)}{2} = 10$$

Looking at a table of chi-square distributions we see that with 10 degrees of freedom, the probability  $P$  of obtaining a value  $x^2$  equal to or greater than 17.16 is between .10 and .05 when the null hypothesis is true. If it is regarded, in our case, as significant those values of  $x^2$  that have a probability of .05 or less, then the observed value would have to be 18.307 or larger. Since the obtained value is 17.16 we fail to reject the null hypothesis and we assume that the assumptions (1. normality of distributions of the discriminial process; 2. unidimensionality of the psychological continuum; 3. equality of the various values of the standard deviations of the differences) are tenable.

If, however, the  $x^2$  had been statistically significant we would conclude that one or more of the assumptions have been violated. The next step is to determine which one or ones have been violated. It is usual to check first for non-homogeneity of variance of the standard deviations of the differences (Assumption 3). This is accomplished using what Guilford<sup>3</sup> calls the "Case III solution" (pp. 165-168). If under this test the  $x^2$  is not significant then it is assumed that unequal variances caused the initial  $x^2$  to be significant. If, on the other hand, the  $x^2$  under Case III is significant, then presumably one or both of the remaining assumptions (normality and unidimensionality) have been violated. Here we turn again to the graphical presentation Figure 3. If the regression lines are not parallel which is to say  $r_{12} \neq r_{13} \neq r_{1n}$ , we do not have a unidimensional scale. On the other hand, if the regression lines are parallel then the assumption of normality must have been grossly violated or there is something inherently wrong with the selection of stimuli (e.g., they are excessively ambiguous). Having had to resort to the graphical method once the scale values have been determined.

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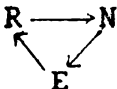
<sup>3</sup>J. P. Guilford, Psychometric Methods, New York, McGraw Hill, 1954.



### Circular Triads and the Coefficient of Consistency

In making paired comparison judgments, a subject may sometimes be inconsistent. Inconsistencies result any time that circular triads are present in the  $n(n-1)/2$  judgments. An example can illustrate what is meant by circular triads.

If a subject says that he prefers Radio over Neighbors, Neighbors over Extension Agent, and Extension Agent over Radio, we have one circular triad and the individual is inconsistent in his judgment. Graphically two situations can illustrate the situation:

1. No circular triad:  $R \longrightarrow N \longrightarrow E$
2. Circular triad: 

Of course, the more circular triads for a given subject, the more inconsistent he is. These inconsistencies can occur for several reasons. For example, the subject may be disinterested in the interview and therefore careless in his responses; some of the statements may fall so close together on the psychological continuum that the judgments are exceedingly difficult to make; or the interviewer may have been careless at the moment of checking the answer in the questionnaire.

The Coefficient of Consistency was developed by Kendall (1948). First it is necessary to determine the number of possible circular triads that can occur in a particular set of judgments.

If the number of stimuli (sources) to be judged is odd, the formula used is  $(n^3-n)/24$ . If the number of stimuli is even, as in our case, then the formula is  $(n^3-4n)/24$ , where  $n$  is the number of stimuli.

$$\text{So, C. T.} = \frac{n^3 - 4n}{24} = \frac{216 - 24}{24} = 8$$



Therefore, eight (8) are all the possible number of circular triads that a subject can have when judging 6 stimuli.

The Coefficient of Consistency (C.C.) may be defined as:

$$\text{C.C.} = 1 - \frac{24d}{n^3 - 4n} \quad \text{where: } d \text{ is the observed number of circular triads, and}$$

$n$  is the number of stimuli

( $4n$  is for even number of stimuli)

If a subject makes the maximum number of circular triads, that is, 8, then his coefficient of consistency will be:

$$\begin{aligned} \text{C.C.} &= 1 - \frac{(24)d}{n^3 - 4n} \\ &= 1 - \frac{(24)(8)}{216 - 24} = 0 \end{aligned}$$

On the other hand, if the respondent does not have a single circular triad, then his coefficient of consistency will be 1. In other words 1 is the highest level of consistency that an individual would obtain. Table VII shows the frequency for 130 respondents in computing their individual coefficient of consistency.

Appendix A - Table VII. Coefficient of consistency for 130 respondents in three Colombian villages (maximum number of possible C.T. = 8)

No. of Circular Triads	Coefficient of consistency	Frequency			Total
		P.V.	S.R.	C.E.	
0	1.0000	31	9	24	64
1	.8750	9	3	3	15
2	.7500	11	5	7	23
3	.6250	2	4	4	10
4	.5000	2	5	1	8
5	.3750	2	1	1	4
6	.2500	0	0	4	4
7	.1250	0	0	1	1
8	.0000	0	0	1	1
Total		57	27	46	130

If we divide, arbitrarily, the subjects into groups with high and low consistency, and if we consider as a cutting line .6250 and above for high consistency and below .6250 for low consistency, we find that in Pueblo Viejo 93 per cent of the respondents are highly consistent, in San Rafael 78 per cent, and in Cuatro Esquinas 83 per cent. Taking all the 130 subjects we have that 86 per cent can be considered as highly consistent in the judgment of the six sources of information through the paired comparisons method used in the study.

In a certain sense the Coefficient of Consistency is redundant in that if its value is very low, internal inconsistency exists in the scale and one or more of the assumptions may have been violated. On the other hand, the investigator may be interested in individual or group differences with respect to their ability to make comparative judgments or perhaps conditions under which subjects are more prone to be inconsistent. In such cases it is useful to determine degrees of consistency by the foregoing method.

### Summary and Implications

#### Summary

Six sources of agricultural information (newspapers, salesmen, neighbors, radio, schoolteacher, and extension agent) were presented in all possible pairs to 130 subjects in order to be judged on the basis of their perceived credibility.

Sources were located on a psychological continuum in which the extension agent was the most credible source and newspapers the least credible source. Salesmen and neighbors were found located very close to each other on the continuum. In such circumstances an interchange of

them in their location on the continuum could be expected.

In testing for significance it was found that the assumptions involved in the case under study were tenable. These assumptions were:

1. Normality of distribution of the discriminial processes
2. Unidimensionality of the psychological continuum
3. Equality of the various values of the standard deviations of the differences

Eighty-six per cent of the respondents were found highly consistent in the judgment of the six sources. High consistency was determined for those with scores above .6250 on a "0" to "1" range.

#### Implications

Several implications are to be derived from the previous analysis by the method of paired comparisons. First, we know what sources are more credible and what sources are less credible for agricultural information in the three villages studied in Colombia. We know, for example, that the extension agent and the school teacher are the most appropriate sources for transmitting agricultural information which will be believed to those peasants. To send agricultural information through newspapers, salesmen, or neighbors implies a lesser degree of belief in the information as a function of the lesser degree of credibility assigned to these sources. Such findings have practical implications for the diffusion of agricultural information.

As a result of the foregoing analysis, we know how six sources were "weighted" on the basis of credibility. More sources can be evaluated and located in the continuum. For example, television, priests, mayors, magazines, extension booklets, and so on, can now be located on

the psychological continuum of source credibility. By asking respondents to compare the credibility of these latter sources with those whose positions on the continuum are already known, it is possible to assign a credibility rating to them. This points up to the necessity for careful selection of sources (or whatever the scale to be constructed purports to measure) such that those selected represent or cover as much of the credibility continuum as possible. If for instance two sources not previously used in the development of the scale are presented for comparison and the respondent indicates he prefers both of them more than the most preferred (credible) source on the scale, the investigator has no way of knowing how much more credible they are or for that matter, how much more credible one is than the other.

The foregoing analysis has been based solely on a believability question. It would seem appropriate in light of the recent work on the dimensions of source credibility to attempt to determine peasant farmers' bases for evaluation of sources and in particular what dimensions of credibility are attributed to what extent to the various sources of information.

## APPENDIX B

### DESCRIPTION OF THE CHANGE AGENTS

## THE EXTENSION AGENT

The Colombian Department of Agriculture has a special section dedicated to the extension service. Within it, two main branches have been operating; the agricultural extension service and the home economics service.

One of the functions of the agricultural extension agent is to advise the farm population on ways of improving standards of living through the use of improved agricultural technology. The extension agent's duties are, among others, to introduce new or improved plant varieties after scientific testing in the various agricultural experiment stations throughout the country and to introduce such agricultural products as fertilizers, weed-spray, insecticides, etc. In this sense the extension agent constitutes the link between farmers and modern scientific technology. The main objective of the change agent is that of getting the farmers to adopt the programs he recommends.

Training for extension agents is carried out in vocational agricultural institutes. The training period is two years, after which the agents are sent out to the various communities. In most cases change agents are faced with lack of adequate supplies for performing their role, inadequate salaries, and political influences.

In Appendix B - Tables I and II show the extension agent's characteristics and the amount and frequency of client perceived discrepancies.

## THE SCHOOLTEACHERS

In 1961 there were 48,529 primary teachers in Colombia, which means a ratio of one teacher for every 56 students enrolled in primary



Appendix B - Table I. Extension agent personal characteristics (actual and ideal)

Personal Characteristics	Actual years	Mean "ideal" years		
		P.V.	S.R.	C.E.
Age	30	36	33	36
Education	14	8	10	11
Experience	6	11	10	11

Appendix B - Table II. Amount and frequency of discrepancies for the extension agent's characteristics

Amount of discrepancy (actual minus ideal)	Frequency of discrepancies								
	P.V.			S.R.			C.E.		
	Educa- Exper-			Educa- Exper-			Educa- Exper-		
	Age (30)	tion (14)	ience (6)	Age (30)	tion (14)	ience (6)	Age (30)	tion (14)	ience (6)
No discrepancy	16	0	1	6	0	1	6	0	2
1 to 5 years	14	29	40	14	11	19	15	36	30
6 to 10 years	20	22	4	5	7	8	15	8	5
11 and more	8	7	13	7	14	4	10	2	9
Total	58	58	58	32	32	32	46	46	46

Note: actual years in parentheses.

schools. Only 34 per cent were teaching in the rural areas. Among rural teachers 78 per cent received primary education only.

There are 242 Normal schools which train an average of 1,800 teachers per year. But this number is largely insufficient to cover the educational needs of the country. In 1958, 56 per cent of the primary teachers did not have either a bachelors degree or a teaching certificate.

In addition to the insufficient training of rural teachers, there are few incentives for them. To live in the rural areas of Colombia,



in most cases, means hardship. Salaries are low (\$60 to \$70 monthly) and frequently paid after several months delay. Housing facilities are often very poor and in addition to serving as living quarters for the teacher, serve as classrooms. Many rural Colombian schools are quite isolated from cities and towns. Teaching aids and supplies are difficult to acquire and seldom used.

The schoolteachers of the present study, while not enjoying the best possible conditions in rural Colombia, are better off than their counterparts in the even more isolated regions of the country.

Tables III and IV in Appendix B show the schoolteachers' characteristics and the amount and frequency of client perceived discrepancies.

Appendix B - Table III. Schoolteacher personal characteristics (actual and ideal)

Village	Characteristics					
	Age		Education		Experience	
	Actual	Ideal*	Actual	Ideal*	Actual	Ideal*
Pueblo Viejo	54	32	10	10	35	9
San Rafael	21	32	9	10	3	9
Cuatro Esquinas	35	33	12	12	12	9

\*Mean years

Appendix B - Table IV. Amount and frequency of discrepancies for the schoolteacher's characteristics

Amount of discrepancy (actual minus ideal)	Age (30)	Educa- tion (14)	Exper- ience (6)	Age (30)	Educa- tion (14)	Exper- ience (6)	Age (30)	Educa- tion (14)	Exper- ience (6)
No dis- crepancy	0	20	0	0	0	0	8	6	0
1 to 5 years	2	31	0	6	15	22	21	35	26
6 to 10 years	2	6	0	13	16	8	10	2	19
11 and more	54	1	58	13	1	2	7	3	1
Total	58	58	58	32	32	32	46	46	46

## APPENDIX C

### MATRIX OF ZERO-ORDER AND FIRST-ORDER PARTIAL CORRELATIONS

Appendix C - Table I. Matrix of intercorrelations of attribute-differentials, social distance, and attitudinal and behavioral variables dealing with the schoolteacher

Variables	1	2	3	4	5	6	7	8	9	10
1. Contact	---	-.119	-.048	.168*	-.126	.103	.153*	-.080	.124	-.058
2. Favorability		---	.208**	-.188*	-.115	-.226**	.038	.104	-.244**	.210**
3. Credibility			---	.048	-.184*	.042	.157*	-.102	.020	.090
4. Discrepancy - age				---	.064	.729**	-.093	-.046	.905**	-.094
5. Discrepancy - education					---	-.099	-.016	-.089	.077	-.171*
6. Discrepancy - experience						---	-.065	-.053	.928**	-.041
7. Discrepancy - marital status							---	-.088	-.069	-.079
8. Social distance								---	-.070	.606**
9. Total attribute differentials discrepancies									---	.100
10. Innovativeness										---

\* Significant at the five per cent level.

\*\* Significant at the one per cent level.

Appendix C - Table II. Zero-order correlations and first-order partial correlations (controlling on social distance) of attribute-differentials and attitudinal and behavioral variables dealing with the extension agent

Variables	Credibility		Favorability		Contact	
	Zero-order r	First-order r	Zero-order r	First-order r	Zero-order r	First-order r
Discrepancy - age	-.116	-.075	-.250**	-.221*	-.073	-.034
Discrepancy - education	-.010	-.026	-.144	-.160	.100	.088
Discrepancy role experience	-.155*	-.092	-.129	-.109	-.056	-.035
Discrepancy marital status	-.094	.108	.224**	.216*	-.009	-.020

\* Significant at the five per cent level.

\*\* Significant at the one per cent level.

Appendix C - Table III. Zero-order correlations and first-order partial correlations (controlling on social distance) of attribute-differentials and attitudinal and behavioral variables dealing with the schoolteacher

Variables	Credibility		Favorability		Contact	
	Zero-order r	First-order r	Zero-order r	First-order r	Zero-order r	First-order r
Discrepancy - age	.048	.044	-.188*	-.184*	.168*	.165
Discrepancy - education	-.184*	-.195*	-.115	-.107	-.126	-.134
Discrepancy - Role experience	.042	.037	-.226**	-.222*	.103	.099
Discrepancy - marital status	.157	.149	.038	.047	.153*	.147

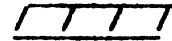
\* Significant at the five per cent level.

\*\* Significant at the one per cent level.



APPENDIX D

ITEMS FROM THE INTERVIEW SCHEDULE UTILIZED  
IN THE PRESENT STUDY  
(Translated from Spanish)

( 1 2 3 )Number in  
the mapMICHIGAN STATE UNIVERSITY  
FACATATIVA DIFFUSION RE-STUDY

1965

Interviewer \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

Revisor \_\_\_\_\_

Time of starting \_\_\_\_\_

Time of ending \_\_\_\_\_

Village: ☐ Pueblo Viejo  
☐ San Rafael  
☐ Cuatro Esquinas

Note: That the respondent should be the same whose name appears  
at the top of the page.

I am a university student from Bogota. We are interested in knowing your  
opinions about some agricultural problems in this village.

32. Please answer if you agree or disagree with the following  
opinions:

32a. In this village I would like to have the:

(    ) sde  
25

a) extension agent:

(SA) (A) (N.O.) (D) (S.D.)  
1 2 3 4 5

(    ) sdm

b) schoolteacher:

(SA) (A) (N.O.) (D) (S.D.)  
1 2 3 4 5

32c. I would like to have more frequent visits from the:

(    ) sdm

a) schoolteacher:

(SA) (A) (N.O.) (D) (S.D.)  
1 2 3 4 5

( ) sde

b) extension agent:

(SA)	(A)	(N.O.)	(D)	(S.D.)
1	2	3	4	5

32d. If I had a marriageable daughter I would like her to marry the:

( ) scm  
30

a) schoolteacher:

(SA)	(A)	(N.O.)	(D)	(S.D.)
1	2	3	4	5

( ) sde

b) extension agent:

(SA)	(A)	(N.O.)	(D)	(S.D.)
1	2	3	4	5

34. When you are aware of a news about new agricultural techniques, whom is more credible for you:

( )	radio	radio	extension agent
45,46,47	<u>1</u>	<u>1</u>	<u>1</u>
	neighbors	extension agent	schoolteacher
	<u>0</u>	<u>0</u>	<u>0</u>

( )	neighbors	extension agent	schoolteacher
48,49,50	<u>1</u>	<u>1</u>	<u>1</u>
	newspapers	neighbors	radio
	<u>0</u>	<u>0</u>	<u>0</u>

( )	newspapers	newspapers	neighbors
— — —	<u>1</u>	<u>1</u>	<u>1</u>
	radio	extension agent	schoolteacher
	<u>0</u>	<u>0</u>	<u>0</u>

( )	newspapers	salesmen	radio
54,55,56	<u>1</u>	<u>1</u>	<u>1</u>
	schoolteacher	neighbors	salesmen
	<u>0</u>	<u>0</u>	<u>0</u>

( )	salesmen	extension agent	schoolteacher
— — —	<u>1</u>	<u>1</u>	<u>1</u>
	newspapers	salesmen	salesmen
	<u>0</u>	<u>0</u>	<u>0</u>

35. In the last 12 months have you spoken with persons from the Extension Service?

— No — Yes

( ) 35a. How many times? \_\_\_\_\_ (per year)  
60,61

36. In the event that you have to nominate a person as extension agent for this village, how many years would you like him to be in:

( ) 36a. Age? \_\_\_\_\_ years  
 ( ) 36b. Experience as extension agent? \_\_\_\_\_ years  
 ( ) 36c. Studies (education)? \_\_\_\_\_ years  
 36f. Would you like him to be:  
       single  
 ( )     1  
       married  
       2  
       no answer  
       0

37. What opinion do the inhabitants of this village have of the extension agent?

Good:   5 very                   4 a little

( )           3 don't know

Bad:   2 a little     1 very

- 38e. I would not like to be a friend of the:

( ) sde	a) extension agent:	(SA) 5	(A) 4	(N.O.) 3	(D) 2	(S.D.) 1
( ) sdm	b) schoolteacher:	(SA) 5	(A) 4	(N.O.) 3	(D) 2	(S.D.) 1

- 38f. When I need help I feel it is not good to go to the:

( ) sde	a) extension agent:	(SA) 5	(A) 4	(N.O.) 3	(D) 2	(S.D.) 1
( ) sdm	b) schoolteacher	(SA) 5	(A) 4	(N.O.) 3	(D) 2	(S.D.) 1

40. In the last 12 months, have you spoken about agriculture with the schoolteacher?

( )   \_\_\_ No     \_\_\_ Yes

40a. How many times? \_\_\_\_\_ (per year)

41. In the event that you have to nominate a person as school-teacher for this village, how many years would you like him to be in:

( ) 41a. Age? \_\_\_\_\_ years  
 ( ) 41b. Experience in teaching? \_\_\_\_\_ years  
 41c. Studies (education)? \_\_\_\_\_ years

42. What opinion do the inhabitants of this village have of the schoolteacher?

Good: 5 very 4 a little

( ) 3 don't know

Bad: 2 a little 1 very

- 42c. Would you like him to be:

1 single

( ) 2 married

0 no answer

46. Respondent's status among the peasants of this village:  
 (interviewer rating)

    very high

    high

( )     middle

    low

    very low

-----

Items corresponding to innovativeness, at Stage I (1963) of the research.

9. Had you used ( \_\_\_\_\_ ) in your farm:

No use	Item	When used first time (yr.)	Actual use	
			yes	no
___	9a Insecticide			
___	9b Potato fungicide			
___	9c Chemical fertilizer			
___	9d Weed-killer 2, 4-D			
___	9e Hand-sprayer			
___	9f Feed concentrate			
___	9g Chicken vaccination			
___	9h Chicken varieties			
___	9i Black leg vaccination for cattle			
___	9j Vaccination for hoof and mouth disease			
___	9k Soil disinfection			
___	9l Use of tractor			
___	9m Vegetable garden			
___	9n Diacol narino (wheat variety)			
___	9o Parda pastuso (potato variety)			
___	9p Funza (barley variety)			

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