

HOMOPHILY IN INTERACTION PATTERNS
IN THE DIFFUSION OF INNOVATIONS IN
COLOMBIAN VILLAGES

Thesis for the Degree of M. A.
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IN COLOMBIAN VILLAGES

By
Teresa Kang Mei Chou

A THESIS

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ABSTRACT

HOMOPHILY IN INTERACTION PATTERNS IN THE DIFFUSION OF INNOVATIONS IN COLOMBIAN VILLAGES

by Teresa Kang Mei Chou

The present thesis was concerned with homophily in interaction patterns and the multi-step flow of communication. Homophily is the degree of similarity on selected variables between pairs of individuals who are in interaction. The objectives of the present study were: (1) to examine some determinants of homophily (such as level of competence, communication contact, and status) in two kinds of interaction; friendship and information-seeking interaction, and (2) to investigate the multi-step flow of communication.

Homophily is expected because both the seeker and the sought seek cognitive consonance through interaction with others like themselves in both friendship and information-seeking interaction. The research findings provide the evidence. Greater homophily is expected in the case of friendship interaction because people tend to interact with those who are more reliable and competent, and the seeker must perceive a superiority in the sought in order to consider him a useful and credible source, in information-seeking interaction. Two-step flow of communication stated that the first-step flow of communication was from mass media to opinion leaders, and the second step was from opinion leaders to followers. Since communication is a process without

beginning and ending, it is more realistic to assume multiple steps in the flow of communication. Since the soughts are more competent than the seekers, it is reasonable to assume that the soughts are exposed more to the mass media.

The dependent variable was interaction. The operationalized determinant variables were functional literacy, innovativeness, mass media exposure, cosmopolitaness, social participation, age, and social status. The homophily of individuals under study was based on the variables mentioned above by using dyadic analysis. Dyadic analysis is a kind of investigation of the networks of relationships among pairs of individuals. The statistical method for the first two hypotheses was zero-order Pearsonian correlation; for the third hypothesis it was Z test; for the fifth hypothesis it was chi-square; for the fourth hypothesis observation was used.

The data used in the present study grew out of the research project, "A Field Experiment of the Role of Opinion Leaders in Diffusing an Innovation in Three Colombian Neighborhoods." The project was directed by Everett M. Rogers in 1963, and the restudy was done by J. David Stanfield, Eduardo Ramos, and Elssy Bonilla de Ramos with approximately the same respondents in 1965. There were 160 interviews completed in 1963 and 136 in 1965.

There were five hypotheses in the present thesis. The first two hypotheses asserted that there is homophily of individuals engaged in friendship interaction and information-seeking interaction, respectively. The third hypothesis asserted that the homophily of individuals engaged in friendship interaction is greater than the homophily of individuals engaged in information-seeking interaction. The fourth hypothesis

asserted that there are multiple steps in the flow of communication.

The fifth hypothesis asserted that the soughts are exposed more to mass media than the seekers.

The first, fourth, fifth hypotheses were confirmed. The second and the third hypotheses were not, but the findings agreed with the predicted positon.

It was concluded that there is homophily of individuals engaged in friendship interaction; there are multiple steps in the flow of communication; the soughts are exposed more to the mass media than the seekers.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	v
LIST OF FIGURES	vi
 Chapter	
I INTRODUCTION	1
Justification	1
Objectives	4
II RATIONALE AND HYPOTHESES	6
General Hypotheses Dealing with Homophily	6
Choice of Variables	11
General Hypotheses Dealing with the Multi- Step Flow of Communication	11
III METHODOLOGY	14
Data-Gathering	14
<u>Vereda and Municipio</u>	14
<u>General Description of the Three Veredas</u>	14
Location	15
Transportation	15
Social Organization	15
Method and Results of Data-Gathering	15
Statistical Methods	16
Operationalization of Variables	19
Dependent Variable	19
Determinant Variables	19
Empirical Hypotheses	23
IV FINDINGS	27
Test of Hypotheses Dealing with Homophily	27
Summary of Hypotheses I, II, III	34
Test of Hypotheses Dealing with Multi- Step Flow of Communication	36

Chapter	Page
V SUMMARY, INTERPRETATION, IMPLICATION, AND SUGGESTIONS	46
Summary	46
Interpretation	48
Implication for Change	54
Suggestions for Future Research	54
APPENDIX	57
BIBLIOGRAPHY	71

LIST OF TABLES

Table		Page
1	Results of data-gathering	16
2	The zero-order Pearsonian correlations of characteristics on friendship interaction and information-seeking dyads	35
3	Z scores for differences between the information- seeking friendship homophily correlations for three Colombian villages	36
4	Differences in seeker-sought mass media exposure scores by steps in the multi-step flow of commotion	42

LIST OF FIGURES

Figure	Page
1 Paradigm of hypothesized relationships between seeker and sought in friendship and information-seeking interaction.	12
2 Paradigm of the relationship of homophily and interaction	20
3 Steps of information flow among seekers and soughts in Clique 1	38
4 Steps of information flow among seekers and soughts in Clique 2	39
5 Steps of information flow among opinion leaders and followers in Clique 3	40
6 Mass media exposure scores of seekers and soughts in linked information flow in Clique 1	43
7 Mass media exposure scores of seekers and soughts in linked information flow in Clique 2	44
8 Mass media exposure scores of seekers and soughts in linked information flow in Clique 3	45

CHAPTER I
INTRODUCTION
Justification

Developing countries rely on imported technology in order to modernize. Hopefully, for this imported technology to bring about change, ideas must (1) enter the social system from external sources, and (2) diffuse through the social system. A study of the introduction and spread of new ideas is a study of communication. How do new ideas enter a village system? New ideas can enter the village through mass media communication channels, extension agent contacts, and villagers' contacts with outsiders in cities and other areas.

The present thesis will only be concerned with the diffusion of ideas within villages after the new ideas have entered the system. In this case, the importance of mass and interpersonal communication channels in diffusing new ideas is not the same. Interpersonal communication is more effective than mass communication channels in within-village diffusion.

Schramm (1962, p. 251) asserted that ". . . the boundaries of mass communication have become practically continuous with those of the entire field of communication study." It is difficult to study mass communication alone without taking interpersonal communication into account. One of Klapper's (1960, p. 8) generalizations is "Mass communication ordinarily does not serve as a necessary and sufficient

cause of audience effects, but rather functions among and through a nexus of mediating factors and influences." This is to say that mass communication are seldom effective in changing a person's behavior or attitudes. On the other hand, it is often assumed that interpersonal communication plays an important role in influencing attitudes and behavior. Roper (1960, p. xv) stated, "As the result of my own research into public attitudes I have come to the tentative conclusion that ideas often penetrate the public as a whole slowly and--even more important--very often by interaction of neighbor on neighbor without any apparent influence of the mass media." It seems that interpersonal communication is generally more effective than mass communication in changing attitudes and behavior.

In the adoption process¹ in the diffusion of innovations, there are five stages, awareness, interest, evaluation, trial, and adoption. According to Rogers, "Impersonal information sources are most important at the awareness stage, and personal sources are most important at the evaluation stage in the adoption process" (Rogers, 1960, p. 99). But this statement is not true for developing countries. Mass media are not important channels at the awareness stage (Rogers and Meynen, 1965; Rahim, 1961; Deutschmann and Fals Borda, 1962; Myren, 1962); interpersonal communication is most important at the awareness stage as well as at the evaluation stage, in villages in less developed countries. Possible explanations could be:

- (1) In villages, mass media exposure is low.

¹According to Rogers, the adoption process is the mental process through which an individual passes from first hearing about an innovation to final adoption.

(2) The physical distance between cities and villages is a barrier to the geographic mobility of villagers. Villagers find it difficult to go to the cities where they might be exposed to mass media.

(3) Because of low accessibility to urban media facilities and mass media exposure, interpersonal communication serves as a substitute (in terms of making people aware of innovations imported from external sources) for mass media.

(4) Low levels of peasant literacy in developing countries. Rogers (1965, p. 217) found that the reason why Colombian peasants were less able to obtain information from the mass media received in their homes was due to low levels of literacy.

Interpersonal communication is extremely important in the diffusion process in villages. A few researchers (Rogers and van Es, 1964, Lionberger, 1963, and Warland, 1963) have completed studies to investigate the dyadic relationships involved. Dyadic analysis is a kind of investigation of the networks of relationships among pairs of individuals. In this case, a pair is a unit of analysis instead of an individual. Coleman stated (1958, p. 31) "Neither of the above kinds of analysis has required the use of sociometric-type data. An important kind of analysis which does use such direct data on relationships is the analysis of pairs. . . . One of the most important problems which has been studied in this way is the similarity or difference in attitudes or backgrounds between the two members of a pair."

According to publications available in the MSU Diffusion Documents Center, there are now about one thousand studies in the field of the diffusion of innovations. About 37 per cent of the studies were done

outside of the U.S. Out of the 370 studies, none have investigated dyadic communication. Thus the present thesis will deal with peasant's dyadic interaction patterns in Colombian villages.

In terms of the goal of interpersonal communication, friendship interaction and information-seeking interaction seem to be two different and important types. Friendship interaction is a kind of interaction whereby associations among individuals are built. Information interaction is a kind of interaction whereby knowledge perceived as new to the individual is gained. Friendship interaction is a part of everyday life, and almost everybody is engaged in it. Information-seeking interaction is important as innovations spread through a social system.

Objectives

The present thesis will be concerned with interaction patterns in Colombian villages as they relate to the process of the diffusion of innovations.

The objectives are:

- (1) To examine some determinants of homophily (dyadic similarity on selected characteristics between people who interact) in interaction patterns by using three general kinds of variables: level of competence, communication contact, and status.
- (2) To examine the degree of homophily in two kinds of communication situations: friendship interaction and information-seeking interaction.
- (3) To investigate the multi-step flow of communication in the diffusion of innovations in terms of (a) number of

steps, and (b) discrepant mass media exposure scores between seeker and sought.

CHAPTER II

RATIONALE AND HYPOTHESES

General Hypotheses Dealing with Homophily

The first three general hypotheses are:

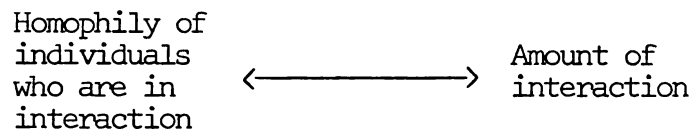
General Hypothesis I: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of level of competence, communication contact, and status.

General Hypothesis II: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of level of competence, communication contact, and status.

General Hypothesis III: In the communication network in the diffusion of innovations, the degree of homophily between individuals with friendship relationships is greater than the degree of homophily between individuals with information-seeking relationships.

It is expected that individuals who interact are generally similar, whether it is a friendship relationship or an information relationship. There is an interdependence relationship between the homophily of individuals on the basis of level of competence, communication contact, and status, and their degree of interaction. Zetterberg explained the interdependence relationship very clearly. According to Zetterberg (1965,

p. 73), "Thus, in an interdependent relation, a small increment in one variable results in a small increment in a second variable; then, the increment in the second variable makes possible a further increment in the first variable, which in turn affects the second one, and so this process goes on until no more increments are possible." So individuals interact with others like themselves; this in turn leads to greater similarity in certain social characteristics, which leads in turn to further interaction, etc.



For some "static" variable like age, the interdependence relationship does not hold.

The possible rationale and empirical findings supporting the first two general hypotheses are summarized as follows:

First, Festinger's dissonance theory might support the first two hypotheses. Festinger (1958, p. 23) stated . . .

(A) The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce dissonance and achieve consonance (or consistency).

(B) When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and informations which would likely increase the dissonance.

In friendship interaction, people with similar characteristics would more likely be friends than people with different characteristics. Dissonance theory is mainly concerned with explaining ex post facto behavior. In the present case dissonance theory is not the explanation of initiating a friendship between people, but the maintenance of

friendship between people. The maintenance of friendship assumes cognitive consistency or consonance between the two friends. It seems that individuals with very different characteristics could interact once or twice, but probably would not over a considerable time.

Does this notion also hold true for the information-seeking situations? When an innovation enters a village from outside sources, dissonance leads the individuals who do not know about the innovation to seek information as a means to reduce this psychological discomfort. In order to maintain consonance, individuals would avoid seeking information from those who would likely increase their dissonance. Thus, it seems that the establishment of information-seeking relationships also assumes cognitive consonance between "seeker" and "sought."¹ In order to maintain consonance, individuals would be similar in both friendship relationships and information-seeking relationships. Heider (1958) discussed how similarity can result in a balanced state in interpersonal relation. It is reasonable to assume the similarity between people with friendship relationships and information-seeking relationships.

Warland (1963) found that individuals interact with those who have similar attitudes, similar levels of competence, and similar socioeconomic status.

Katz and Lazarsfeld (1955) found that the flow of influence is largely horizontal, and people on each status level looked to their own corps of opinion leaders. The researchers did not use dyadic analysis. They identified four kinds of issues, namely: public affairs, marketing, movie-going, and fashions. Influence flow was found to move across the

¹Seeker is the individual who initiates the interaction. Sought is the individual who gives information to the seeker in the interaction.

same age levels in marketing and movie-going, from slightly older to younger in public affairs, and from younger to older in fashions.

Differential social status and innovativeness have been found to be barriers in the flow of communication (Rogers, 1960). Wide disparity with respect to these two characteristics of people who interact can impede communication.

Although the research to date has not investigated all the characteristics of individuals who interact in a communication network, it seems reasonable to assume that great dissimilarity in the characteristics of individuals who interact would be barriers to friendship interaction and to information-seeking interaction. When great dissimilarity exists, individuals really speak different languages, and empathy with each other is more difficult.

The previous reasoning could explain and support the first two hypotheses. In explanation of the third general hypothesis, the following question could be raised; "Is there any difference in homophily between friendship interaction and information-seeking interaction?" It is hypothesized that the similarity of the individuals interacting in friendship relationships is greater than that of individuals interacting in information-seeking relationships.

When talking about the characteristics of the individuals who interact, there are two kinds of hypotheses. One is the "like-me" hypothesis, that individuals will interact with people who are similar to themselves. Katz and Lazarsfeld (1948) and Merton (1957) supported the "like-me" hypothesis. The second hypothesis is that in the communication network, individuals being sought for information are more competent than

those who seek information. Lionberger (1953, 1957) supported this proposition.

It is expected that in information-seeking interaction, the one sought would be higher in education level, more cosmopolite, etc. than the seeker. This disparity is not expected to be great, however. Katz and Lazarsfeld (1955) found that public affairs opinion leaders were better educated, had higher status, and were more cosmopolitan in their mass media tastes than the followers. Roughly speaking, the seeker and the sought are still much alike with respect to their characteristics. It seems that in friendship interaction, the disparity is less than in information-seeking interaction. So it seems reasonable to assume the similarity of the individuals in friendship interaction is greater than in information-seeking interaction.

In the situation of information-seeking individuals would like to interact with more competent people than themselves because in that case the goal of communication is to obtain information about innovations. In information-seeking interaction, people tend to interact with those who are more reliable, legitimate, competent and technically accurate, but if the goal of the communication is mainly to socialize with each other, or to establish and maintain friendships, individuals would be more likely to communicate with others who are more like themselves.

Secondly, in information-seeking differences in education, cosmopoliteness, etc., relationships establish a psychological inequality. The seeker must perceive a superiority in the sought in order to consider him a useful and credible source. In friendship interaction, seekers and soughts wish to feel equal psychologically; individuals therefore interact

with those who are as much like themselves as possible.

Choice of Variables

Choice of variables to explain interpersonal ^{Uni}communication is our next consideration. Since the present analysis will deal with interaction patterns in the diffusion of innovations, communication contact, and level of competence are certainly important variables. The variable status is selected because it indicates respect among villages in developing countries. It should be understood that the choice of variables are limited because the data used in the present thesis were not collected for the purpose of a dyadic interaction pattern analysis. The variables chosen then, depend on their relevancy to the present thesis, as well as their availability.

Figure 1 illustrates the interaction patterns hypothesized.

General Hypotheses Dealing with the Multi-Step Flow of Communication

In studying dyadic interaction, the universe is not the whole sample but the individuals who really interact. By studying dyads, the steps in information flow can be detected. The multi-step flow of communication can then be investigated, since it is felt that the "two-step flow of communication" does not adequately explain the flow of innovations in peasant villages.

The notion of the "two-step flow of communication" was formulated by Lazarsfeld, Berelson, and Gaudet (1948) in the course of their analysis of the 1940 Presidential election. These investigators found that "personal influence appeared to have been more effective than the mass media in influencing voting decisions." In their study, the population

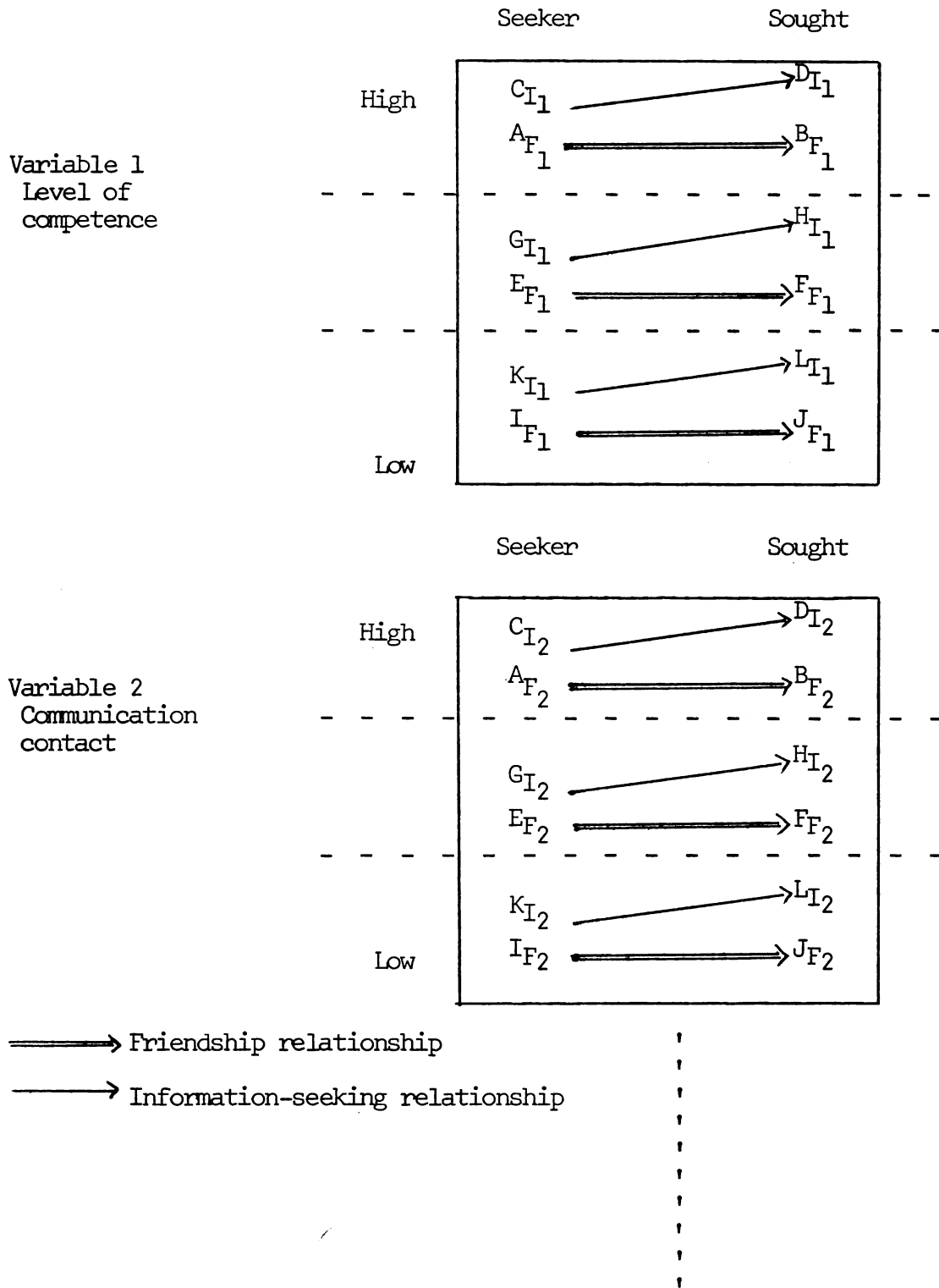


Fig. 1. Paradigm of hypothesized relationships between seeker and sought in friendship and information-seeking interaction.

was dichotomized into two categories: (1) opinion leaders, and (2) followers. Opinion leaders act as bridges between mass media and followers. They claimed that "ideas often flow from radio to the opinion leaders, and from them to the less active sections of the population." These authors saw interaction between opinion leaders and followers as an intervening variable.

Several shortcomings of the two-step flow hypothesis have become apparent. First, two steps are not enough. As Berlo (1960, p. 48) said "Communication is a process, a dynamic process, with no beginning and no ending." So there are really multi-steps in the flow. Secondly, the population cannot be dichotomized into two categories. For example, there is a group of individuals who never talk to others about a specific topic. The members in such a group are called "inactives" by Trolldahl (1965). Trolldahl found 75 per cent of the sample in his 1965 study in the "inactive" category.

In addition to the assumption of the two-steps involved, there is another assumption which states the opinion leaders are exposed more to the mass media than the followers. These will become two hypotheses for testing in the present thesis. The last two general hypotheses are:

General Hypothesis IV: There are multiple steps in the flow of communication in the diffusion of innovations.

General Hypothesis V: Soughts are exposed more to the mass media than the seekers.

CHAPTER III
METHODOLOGY
Data-Gathering

The data used in the present study grew out of the research project, "A Field Experiment of the Role of Opinion Leaders in Diffusing an Innovation in Three Colombian Neighborhoods." The project was sponsored by Programa Interamericano de Información Popular (PIIP), Michigan State University, and Universidad Nacional de Colombia, Facultad de Sociología, Bogotá, Colombia. The project was conducted by Everett M. Rogers in 1963-64. Many of the same respondents were restudied by J. David Stanfield, Eduardo Ramos, and Elssy Bonilla de Ramos in 1965.

Vereda and Municipio

The data were gathered in three veredas in Colombia. A vereda is a neighborhood or a village. A vereda is a sub-unit of a municipio, defined as somewhat comparable to a county in the United States.

General Description of the Three Veredas

A general description of the veredas will help in interpreting later findings. Three aspects, the location, the transportation facilities, and the social organization will be taken into consideration.

Location

The three veredas are Pueblo Viejo, San Rafael, and Cuatro Esquinas. Pueblo Viejo is in the municipio of Zipacón; San Rafael and Cuatro Esquinas are in the municipio of Facatativá. They are located in the Departamento of Cundinamarca, near the center of Colombia, in the foothills of the Andes Mountains, on the edge of the plain surrounding Bogotá, the capital of Colombia. The town of Facatativá is the market place for each of the three villages. There is one-hour bus service from Bogotá to Facatativá.

Transportation

In Pueblo Viejo and San Rafael, the transportation of farm products is by truck, mule or horseback; however, transportation by truck is quite limited in Cuatro Esquinas, especially in rainy weather.

Pueblo Viejo has bus service three times a week; San Rafael has bus service on Sunday and Tuesday mornings. Cuatro Esquinas is without regular bus service.

Social Organization

Each village has an elementary school offering only the first two years of study. A program of the National Agricultural Extension Service has helped the peasants to organize a farmers' council, a home economics club, and 4-H clubs for boys and girls.

Method and Results of Data-Gathering

The technique used in data-gathering was the structured personal interview. There were 192 eligible households, but only 160 out of 192 interviews were completed in 1963, and 136 were completed in 1965.

The distributions of the respondents in the three villages are shown in Table 1.

Table 1. Results of data-gathering

Results of data-gathering	No. of heads of households in 1963			No. of heads of households in 1965		
	PV	SR	CE	PV	SR	CE
Household head was not a farmer	16	16	5	-	-	-
Completed interviews	67	36	57	58	32	46
Incompleted interviews	0	0	5	0	0	0
Unable to contact	6	4	8	9	4	11
Refusals	<u>4</u>	<u>5</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	93	61	75	67	36	57

Statistical Methods

The present thesis is primarily concerned with two kinds of interaction: friendship interaction and information-seeking interaction. The interaction dyadic pairs were obtained from the questionnaires in 1963 and 1965. The dyadic pairs of friendship interaction were constructed by combining the individuals specified by name. For example, if A names B as his friend, A and B are treated as a pair for purposes of analysis. The 1965 sociometric question was: "Do you meet with your friends on Sunday and holidays?"

☐ No ☐ Yes

What are the names of friends with whom you most frequently meet?

(Use identification numbers)

a) _____

b) _____

c) _____

There were 56 friendship pairs in PV; 32 pairs in SR; and 29 pairs in CE. By the same procedure, the information-seeking dyads were obtained from a sociometric question in the 1963 questionnaire: "Have you talked with another farmer about agriculture in the last two months?" If yes, the next question was "with whom?"

1) _____

3) _____

2) _____

4) _____

There are 68 seeker-sought pairs with information-seeking interaction in PV; 27 in SR; and 69 in CE. The three villages are treated separately because the norms in the villages are different and by so doing, three replications can be obtained. "Following a survey of several villages, two were selected, one with traditional norms, Cuatro Esquinas, and one with relatively modern norms, Pueblo Viejo. . . . A third community was chosen, San Rafael, which had relatively modern or non-traditional norms;" (Stanfield and Ramos, 1965). Differing village norms might cause the results to vary from village to village.

Zero-order Pearsonian correlation will be used to measure the homophily (of the people who interact) for each variable. The reasons for using zero-order Pearsonian correlation are:

(1) The variables are continuous.

(2) Complete homophily is indicated by a coefficient of correlation of +1.

(3) Complete non-homophily is indicated by a coefficient of correlation of -1.

The null hypotheses in symbolic form for the first two general hypotheses are:

$$H_0 : r_F \leq 0$$

$$H_0 : r_I \leq 0$$

The theoretical hypotheses in symbolic form for the first two general hypotheses are:

$$H_1 : r_F > 0$$

$$H_1 : r_I > 0$$

For General Hypothesis IV the transformation technique from r to Z will be used in order to test the difference between r_F (for friendship interaction) and r_I (for information-seeking interaction).

The formula is:

$$\frac{Z_F - Z_I}{\sqrt{\frac{1}{N_F-3} + \frac{1}{N_I-3}}}$$

A Z table provides the appropriate probability of the Z scores. The null hypothesis and theoretical hypothesis for differences, respectively, in symbolic form, are as follows:

$$H_0 = Z_F = Z_I$$

$$H_1 = Z_F > Z_I$$

When using Z transformations, independence of the two zero-order Pearsonian correlations must be assumed. The assumption to be made in the present case is that choice of a friend and an information source

are independent.

The multi-step flow of communication is analyzed by graphing the steps of information flow in the cliques delineated by Stanfield and Ramos. For General Hypothesis IV observation of the figures for those cliques confirms this hypothesis. For General Hypothesis V chi square will be used.

Operationalization of Variables

Dependent Variable

The major dependent variable of the present thesis is interaction. Interaction is defined as any interpersonal communication between two people with a purpose of seeking friendship and/or information. The bases of interaction will be investigated for three variables: level of competence, communication contact, and status. The relationship between homophily with respect to these variables, and interaction is shown in Figure 2.

Determinant Variables

The first general category of variables is level of competence. Literacy and innovativeness are the two operational variables of this category. Literacy is measured by the number of underlined words read correctly in the sentence: "El hombre movio la manó rapidamente en ademan de respeto."¹

According to Rogers (1960, p. 20) "Innovativeness is the degree to which an individual is relatively earlier in adopting new ideas than the other members of his social system."

Innovativeness is measured by agricultural innovativeness scores, which are the summation of sten scores for time of adoption of twelve

¹The English translation is "The man moved his arm rapidly in a gesture of respect."

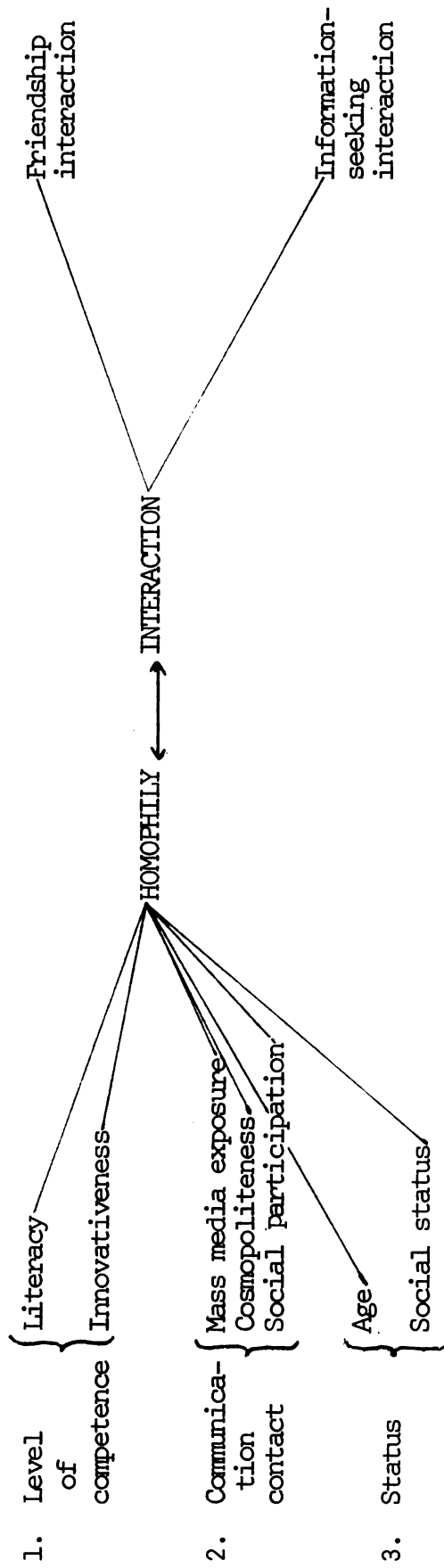


Fig. 2. - Paradigm of the relationship of homophily and interaction.

agricultural innovations. The agricultural practices are:

1. Insecticida (aldrin) - Insecticide
2. Fungicida manzate (papa) - Potato fungicide
3. Abono químico - Chemical fertilizer
4. Matamaleza - 2, 4-D weed-killer
5. Fumigadora (or aspersora) - Hand-sprayer
6. Alimentos concentrados (Finca, Purina) - Feed concentrate
7. Vacuna para cobra aviar - Chicken disease inoculation
8. Vacuna contra carbon bacteridiano y carbon sintomático para vacas - Black leg vaccination for cattle
9. Vacuna contra aftosa para vacas - Vaccination for hoof and mouth disease
10. Desinfección de tierra - Soil disinfection
11. Usa tractor - Use of tractor
12. Hortalizas - Home garden
13. Diaco Narino (trigo) - New wheat variety
14. Parda Pastusa (papa) - New potato variety
15. Funza - New barley variety

The higher the score, the more innovative the peasant is in adopting new farm ideas.

Communication contact, the second category of variables, was measured by mass media exposure, cosmopoliteness, and social participation. A measure of mass media exposure includes exposure to radio, newspapers, magazines, movies, and TV. Seven questions (see questions 34, 35b, 35ca, 37d, 39b, 40a in Appendix A) tap this dimension. An individual's score on this variable is determined by summing the response categories for all seven questions after they are converted to

sten scores. The range of the scores is from 23 to 80. The higher the score, the more the peasant is exposed to mass media.

Cosmopolitanism is defined by Rogers (1960, p. 102) as "the degree to which an individual's orientation is external to a particular social system." Cosmopolitanism is measured by the number of trips to Bogotá per year. The range of the scores is from 0 to 99 or more. The higher the score, the more cosmopolite the peasant.

Social participation is measured by the formal participation score. The peasant (and his family) are awarded points for participation in the following organizations: (1) community board; (2) Catholic Action; (3) night worship; (4) Christ brotherhood; (5) chicken farmers' committee; (6) housewives club; (7) 4-S clubs; and (8) others. Two points were awarded for each membership in an organization, except Catholic Action¹ which received one point; and one point was awarded for purchasing at the village cooperative. These points are then summed to obtain the formal participation score. The range of the scores is from 0 to 9. The higher the score, the greater the peasant's social participation.

The third category of variables is status. Status is indexed by age and social status within each community. Social status is determined by an interviewer's rating of each peasant on the basis of the peasants' house, clothing, and material possessions in comparison with other peasants in the community. The scores range from 0 to 4. The higher the score, the higher the respondent's social status, according to the interviewer's judgment.

¹There is less chance for exposure to new ideas in a primarily religious group which is based on tradition.

Empirical Hypothesis

General Hypothesis I: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of level of competence, communication contact, and status.

Empirical Hypothesis Ia: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of functional literacy.

Empirical Hypothesis Ib: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of the degree of innovativeness.

Empirical Hypothesis Ic: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of the degree of mass media exposure.

Empirical Hypothesis Id: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of frequency of trips to cities.

Empirical Hypothesis Ie: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of the degree of social participation.

Empirical Hypothesis If: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of age.

Empirical Hypothesis Ig: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of social status.

General Hypothesis II: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of level of competence, communication contact, and status.

Empirical Hypothesis IIa: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of function literacy.

Empirical Hypothesis IIb: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of the degree of innovativeness.

Empirical Hypothesis IIc: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of the degree of mass media exposure.

Empirical Hypothesis IId: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of frequency of trips to cities.

Empirical Hypothesis IIe: In the communication network of the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of the degree of social participation.

Empirical Hypothesis IIIf: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of age.

Empirical Hypothesis IIg: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of social status.

General Hypothesis III: In the communication network of the diffusion of innovations, the degree of homophily between individuals with friendship interaction is greater than the degree of homophily between individuals with information-seeking interaction.

Empirical Hypothesis IIIa: In the communication network of the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of functional literacy than the individuals engaged in information-seeking interaction.

Empirical Hypothesis IIIb: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of innovativeness than individuals engaged in information-seeking interaction.

Empirical Hypothesis IIIc: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of mass media exposure than individuals engaged in information-seeking interaction.

Empirical Hypothesis IIId: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of cosmopolitaness than individuals engaged in information-seeking interaction.

Empirical Hypothesis IIIe: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of social participation than individuals engaged in information-seeking interaction.

Empirical Hypothesis IIIIf: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of age than individuals engaged in information-seeking interaction.

Empirical Hypothesis IIIIg: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of social status than individuals engaged in information-seeking interaction.

Empirical Hypothesis IV: There are multiple steps in the flow of communication in the diffusion of innovations.

Empirical Hypothesis V: Soughts are exposed more to the mass media than seekers.

CHAPTER IV

FINDINGS

Test of Hypotheses Dealing with Homophily

General Hypothesis I

General Hypothesis I: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of level of competence communication, contact, and status.

Empirical Hypothesis Ia: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of functional literacy. The zero-order Pearsonian correlation for PV is .058, which is not significantly different from zero; for SR it is 0.21 which is not significantly different from zero; for CE it is .042, which is not significantly different from zero. Empirical Hypothesis Ia is not confirmed.

Empirical Hypothesis Ib: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of the degree of innovativeness. The product moment correlation for PV is .304, which is significantly greater than zero. For SR it is .388, which is significantly different from zero. For CE it is -.087, which is not significantly different from zero. Empirical Hypothesis Ib is confirmed.

Empirical Hypothesis Ic: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of the degree of mass media exposure. The zero-order Pearsonian correlation for PV is .064, which is not significantly different from zero; for SR it is .767, which is significantly different from zero; for CE it is .310, which is significantly different from zero. Empirical Hypothesis Ic is confirmed.

Empirical Hypothesis Id: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of frequency of trips to cities. The zero-order Pearsonian correlation for PV is .063, which is not significantly different from zero; for SR it is .544, which is significantly different from zero; for CE it is .336, which is significantly different from zero. Empirical Hypothesis Id is confirmed.

Empirical Hypothesis Ie: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of the degree of social participation. The zero-order Pearsonian correlation for PV is $-.034$, which is not significantly different from zero; for SR it is .285, which is not significantly different from zero; for CE it is .598, which is significantly different from zero at the one per cent level. Empirical Hypothesis Ie is not confirmed.

Empirical Hypothesis If: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of age. The zero-order Pearsonian correlation for PV is .075, which is not significantly different from zero; for SR it is $-.039$, which is not significantly different from zero; for CE it is .267, which is not

significantly different from zero. Empirical Hypothesis If is not confirmed.

Empirical Hypothesis Ig: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of social status. The zero-order Pearsonian correlation for PV is .295, which is significantly different from zero; for SR it is .173, which is not significantly different from zero; for CE it is .346, which is significantly different from zero. Empirical Hypothesis Ig is confirmed.

Since four Empirical Hypotheses are confirmed, General Hypothesis I is confirmed.

General Hypothesis II

General Hypothesis II: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of level of competence, communication contact, and status.

Empirical Hypothesis IIa: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of functional literacy. The zero-order Pearsonian correlation for PV is .308, which is significantly different from zero; for SR it is +.285, which is not significantly different from zero; for CE it is .103, which is not significantly different from zero. Empirical Hypothesis IIa is not confirmed.

Empirical Hypothesis IIb: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of the degree of innovativeness. The

zero-order Pearsonian correlation for PV is .088, which is not significantly different from zero; for SR it is $-.259$, which is not significantly different from zero; for CE it is $.393$, which is significantly different from zero. Empirical Hypothesis IIb is not confirmed.

Empirical Hypothesis IIc: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of the degree of mass media exposure. The zero-order Pearsonian correlation for PV is $.263$, which is significantly different from zero; for SR it is $.274$, which is not significantly different from zero; for CE it is $.223$, which is significantly different from zero. Empirical Hypothesis IIc is confirmed.

Empirical Hypothesis IID: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of frequency of trips to cities. The zero-order Pearsonian correlation for PV is $.090$, which is not significantly different from zero; for SR it is $.219$, which is not significantly different from zero; for CE it is $.136$, which is not significantly different from zero. Empirical Hypothesis IID is not confirmed.

Empirical Hypothesis IIE: In the communication network of the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of the degree of social participation. The zero-order Pearsonian correlation for PV is $.191$, which is not significantly different from zero; for SR it is $.653$, which is significantly different from zero at the one per cent level; for CE it is $.364$, which is significantly different from zero. Empirical Hypothesis IIE is confirmed.

Empirical Hypothesis IIF: In the communication network in the diffusion of innovations, individuals with information-seeking

relationships have homophily on the basis of age. The zero-order Pearsonian correlation for PV is .014, which is not significantly different from zero; for SR it is .221, which is not significantly different from zero; for CE it is -.128, which is not significantly different from zero. Empirical Hypothesis II_f is not confirmed.

Empirical Hypothesis II_g: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of social status. The zero-order Pearsonian correlation for PV is .132, which is not significantly different from zero; for SR it is -.160, which is not significantly different from zero; for CE it is -.080, which is not significantly different from zero. Empirical Hypothesis II_g is not confirmed.

Since just two of the empirical hypotheses are confirmed, General Hypothesis II is not confirmed.

General Hypothesis III

General Hypothesis III: In the communication network of the diffusion of innovations, the degree of homophily between individuals with friendship interaction is greater than the degree of homophily between individuals with information-seeking interaction.

Empirical Hypothesis III_a: In the communication network of the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of functional literacy than the individuals engaged in information-seeking interaction. The Z score for PV is -1.506, which is not significantly different from zero and it is in the direction opposite to that which was predicted; for SR it is 1.100, which is not significantly different from zero; for CE it is .316,

which is not significantly different from zero. Thus, Empirical Hypothesis IIIa is not confirmed.

Empirical Hypothesis IIIB: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of innovativeness than individuals engaged in information-seeking interaction. The Z score for PV is 2.217, which is significantly different from zero in the predicted direction; for SR it is 2.421, which is significantly different from zero in the predicted direction; for CE it is -2.705, which is significantly different from zero in the direction opposite to that which was predicted. Empirical Hypothesis IIIB is confirmed.

Empirical Hypothesis IIIC: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of mass media exposure than individuals engaged in information-seeking interaction. The Z score for PV is -1.144, which is not significantly different from zero, and it is in the direction opposite to that which was predicted; for SR it is 2.654, which is significantly different from zero and in the predicted direction; for CE it is 0.511, which is not significantly different from zero. Empirical Hypothesis IIIC is not confirmed.

Empirical Hypothesis IIID: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of cosmopolitaness than individuals engaged in information-seeking interaction. The Z score for PV is -.167, which is not significantly different from zero, and it is in the direction opposite to that which was predicted; for SR it is 1.357, which is not significantly different from zero but in the expected

direction; for CE it is 1.121, which is not significantly different from zero but in the expected direction. Empirical Hypothesis IIIId is not confirmed.

Empirical Hypothesis IIIe: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of the degree of social participation than individuals engaged in information-seeking interaction. The Z score for PV is -1.233, which is not significantly different from zero, and in the direction opposite to that which was predicted; for SR it is -1.700, which is significantly different from zero but in the direction opposite to that which was predicted; for CE it is 1.663, which is significantly different from zero and in the predicted direction. Empirical Hypothesis IIIe is not confirmed.

Empirical Hypothesis IIIf: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of age than individuals engaged in information-seeking interaction. The Z score for PV is .389, which is not significantly different from zero, but in the expected direction; for SR it is -0.943, which is not significantly different from zero, but in the opposite direction; for CE it is 2.147, which is significantly different from zero and in the predicted direction. Empirical Hypothesis IIIf is not confirmed.

Empirical Hypothesis IIIg: In the communication network in the diffusion of innovations, individuals engaged in friendship interaction have more homophily on the basis of social status than individuals engaged in information-seeking interaction. The Z score for PV is 0.989, which is not significantly different from zero, but in the predicted

direction; for SR it is 1.189, which is not significantly different from zero, but in the predicted direction; for CE it is 2.347, which is significantly different from zero and in the predicted direction. Empirical Hypothesis IIIg is not confirmed.

Since just one of the empirical hypotheses is confirmed, General Hypothesis III was not confirmed.

Summary of Hypotheses I, II, and III

One of the general hypotheses is confirmed, while two are not. The zero-order Pearsonian correlations are summarized in Table 2. Of the forty-two zero-order Pearsonian correlations, nine are not significantly different from zero at the 5 per cent level and negative, thirty-three are positive, and fifteen out of the thirty-three are significantly different from zero at the 5 per cent level.

The Z statistic scores of comparing two zero-order Pearsonian correlations are summarized in Table 3. Of the twenty-one Z statistic scores, fourteen of twenty-one are in the expected direction, and four of the fourteen are significantly different from zero; seven of twenty-one are in the opposite direction, and two of the seven are significantly different from zero.

Table 2. The zero-order Pearsonian correlations of characteristics on friendship interaction and information-seeking dyads.

Function	PV		SR		CE	
	Friendship interaction (N=56)	Information seeking (N=68)	Friendship interaction (N=32)	Information seeking (N=27)	Friendship interaction (N=29)	Information seeking (N=69)
1. Literacy	.058	.301*	.021	-.285	.042	.103
2. Innovativeness	.304*	-.088	.388*	-.259	-.087	.398+
3. Mass media exposure	.064	.263*	.767+	.274	.310*	.223*
4. Cosmopolitaness	.063	.090	.544*	.219	.336*	.136
5. Social participation	-.034	.191	.285	.653+	.598+	.364*
6. Age	.075	.014	-.039	.221	.267	-.128
7. Social status	.295*	.132	.173	-.160	.346*	-.080

*Significantly different from zero at the 5 per cent level.

+Significantly different from zero at the 1 per cent level.

Table 3. Z scores for differences between the information-seeking friendship homophily correlations for three Colombian villages.

	Villages		
	PV	SR	CE
Functional literacy	-1.506	1.100	.316
Innovativeness	2.217*	2.421*	-2.705*
Mass media exposure	-1.144	2.654*	.511
Cosmopoliteness	- .167	1.357	1.121
Social participation	-1.233	-1.700*	1.663*
Age	.389	- .943	2.147*
Social status	.989	1.189	2.347*

*Significantly different from zero at the 5 per cent level.

The Z statistic for comparing two independent zero-order Pearsonian correlations is:

$$\frac{Z_F - Z_I}{\sqrt{\frac{1}{N_F-3} + \frac{1}{N_I-3}}}$$

Test of Hypotheses Dealing with the Multi-Step Flow of Communication

In the present section, two hypotheses about the two-step flow will be investigated.

General Hypothesis IV

General Hypothesis IV: There are multiple-steps in the flow of communication in the network of diffusion of innovation.

The cliques on this page were obtained through the visualization method by David Stanfield and Elssy Ramos. The procedures are as follows:

- (1) They constructed a sociogram with arrows drawn on an actual map of the community.
- (2) The construction of the map was based on the question regarding information-seeking mentioned previously.
- (3) On the basis of maps and arrows, the cliques were constructed.

Clique 1	Clique 2	Clique 3
004	007	073
008	023	076
012	024	078
014	025	079
017	027	081
071	030	083
125	032	084
	035	088
	037	094
	038	098
	040	123
	042	127
	066	
	105	

Figures 3,4, and 5 show the steps of information flow. The data show the information flow through interpersonal communication, the interaction among opinion leaders and followers.

In Figure 3, the opinion leaders are not necessarily the information givers, and the peasants in the clique do not necessarily go to the opinion leaders for information. The data suggest that there are four kinds of information flow:

- (1) Information flow among opinion leaders¹ and followers, e.g., the information flow among 008, 004, 017.

¹Opinion leaders were determined by the sociometric choices they received. (Stanfield and Ramos, 1965)

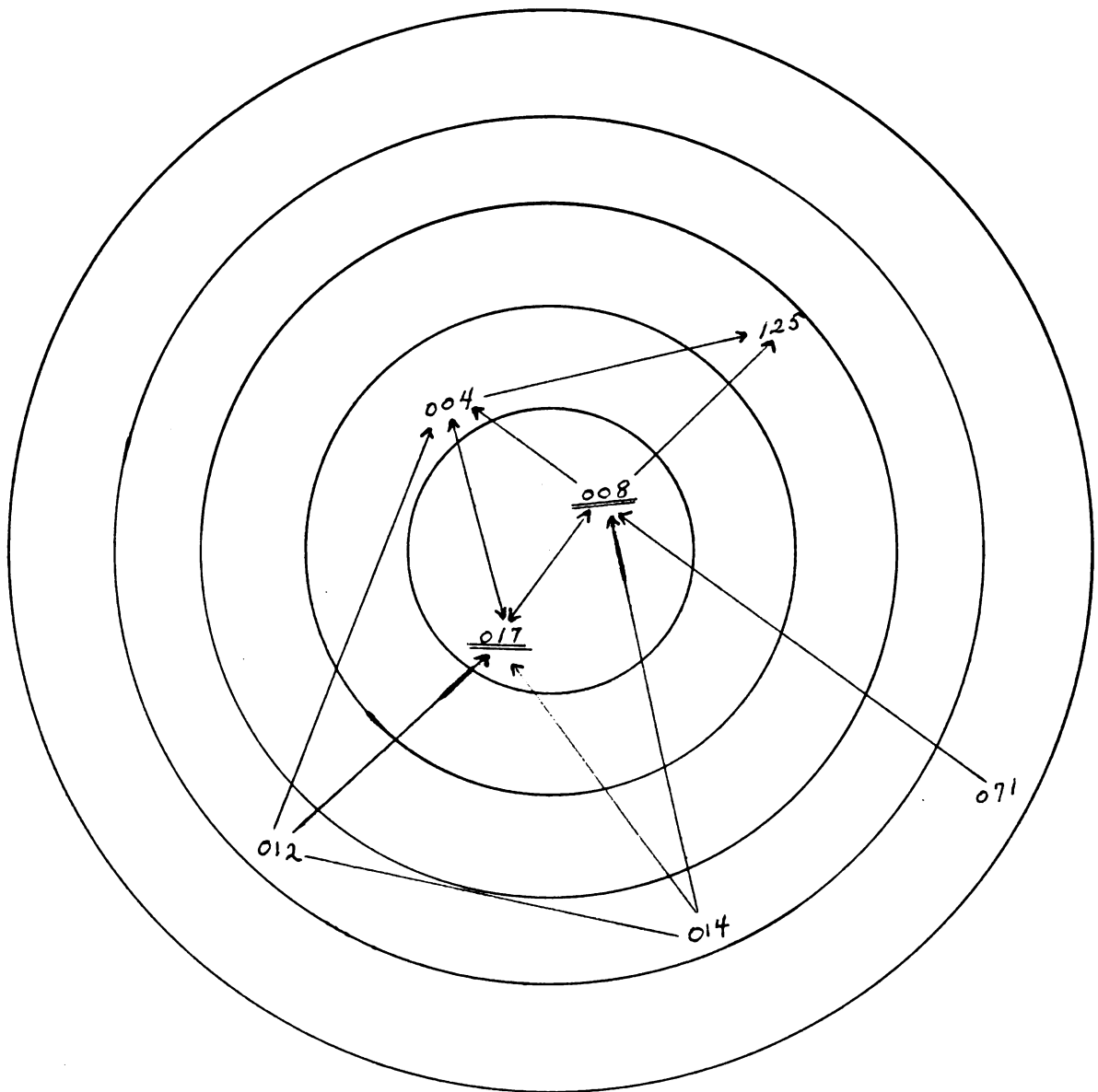


Fig. 3. Steps of information flow among seekers and soughts in Clique 1.

Note: The underlined numbers are opinion leaders.

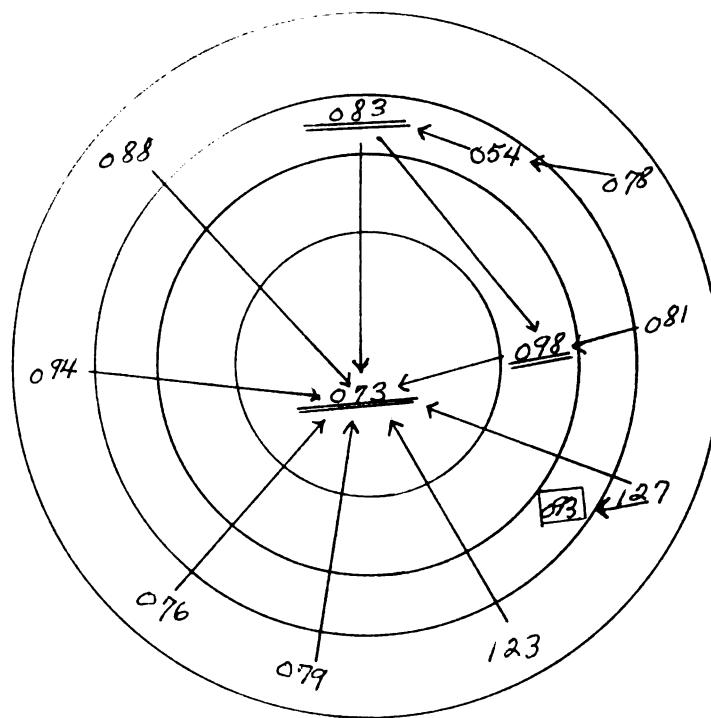


Fig. 5. Steps of information flow among opinion leaders and followers in Clique 3.

Note: The underlined numbers are opinion leaders; 073 indicates individuals not in the clique.

(2) Information flow from non-opinion leaders to opinion leaders, e.g., the step between 008 and 125.

(3) Information flow from opinion leaders to followers, e.g., the flow from 008 to 014.

(4) Information flow between followers, e.g., the information flow between 012 and 014.

The data show that:

1. The information flow is not necessarily from opinion leaders to followers.
2. There is a multi-step flow of information.

In Figure 4, three kinds of information flow exist:

(1) Opinion leader goes to non-opinion leaders for information, e.g., 023 goes to 032, 073 and 098. The latter two are not in the clique.

(2) Non-opinion leaders go to opinion leaders for information, e.g., 027 goes to 023.

(3) Non-opinion leaders go to non-opinion leaders, e.g., 040 goes to 035.

The data show again, the information flow is not always from opinion leaders to followers, and there are multi-step flow.

In Figure 5, there are three kinds of information flow.

(1) Followers go to opinion leaders for information, e.g., 127 goes to 073, and 123 goes to 073.

(2) Opinion leaders seek information from other opinion leaders, e.g., 083 goes to 073, and 098 goes to 073.

(3) There is information flow among non-opinion leaders, e.g., 078 goes to 084.

In this case, the data provide evidence for the multi-step flow as did the data of the previous two figures. So General Hypothesis IV

is confirmed.

General Hypothesis V

General Hypothesis V: Soughts are exposed more to the mass media than seekers.

Figures 4, 5, and 6 in the following three pages show discrepancies in mass media exposure scores between seekers and soughts in the chain relationship of information flow.

Table 4 indicates that the amount of mass media exposure scores of seekers differ from the mass media exposure scores of soughts, and the numbers of first, second and third steps.

Table 4. Differences in seeker-sought mass media exposure scores by steps in the multi-step flow of commotion.

Seeker-sought differences in mass media exposure		Clique 1 Steps			Clique 2 Steps		Clique Steps			Total steps
		1st	2nd	3rd	1st	2nd	1st	2nd	3rd	
Lower	20 ⁺	1	1	1	6	2	3	1	1	
	" 10+ 9	0	2	0	0	0	4	1	0	
	" 0- 9	1	0	0	1	1	1	0	0	27
Equal		0	1	2	1	0	0	0	0	4
High	0- 9	2	0	0	1	0	1	0	1	
	" 10-19	0	0	0	0	2	0	0	0	
	" 20 ⁺	0	1	0	0	2	0	0	0	10
Totals		4	5	3	9	7	9	2	2	41

Chi-square is 7.81, which is significant at the one per cent level. So General Hypothesis V is confirmed.

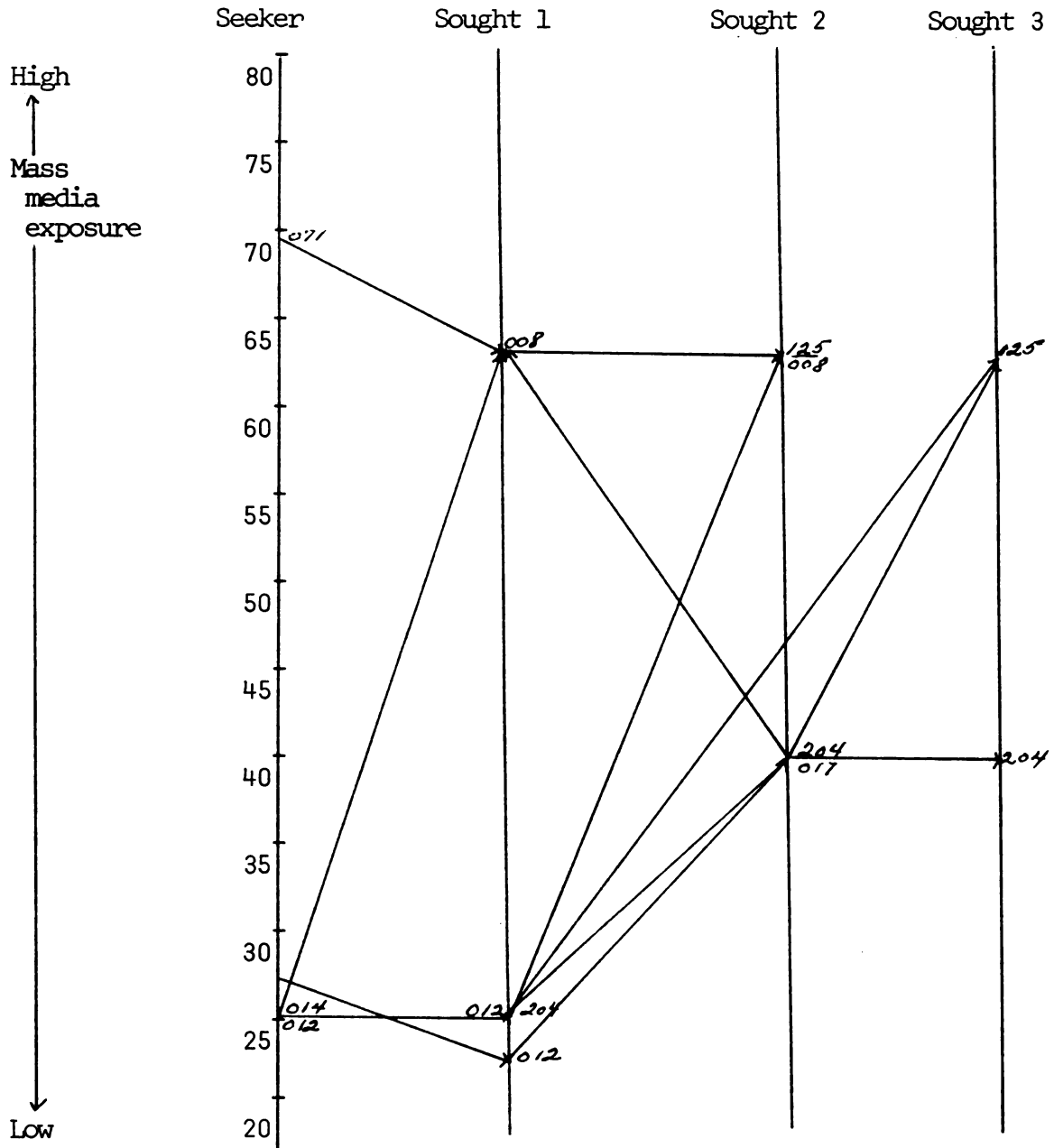


Fig. 6. Mass media exposure scores of seekers and soughts in linked information flow in Clique 1.

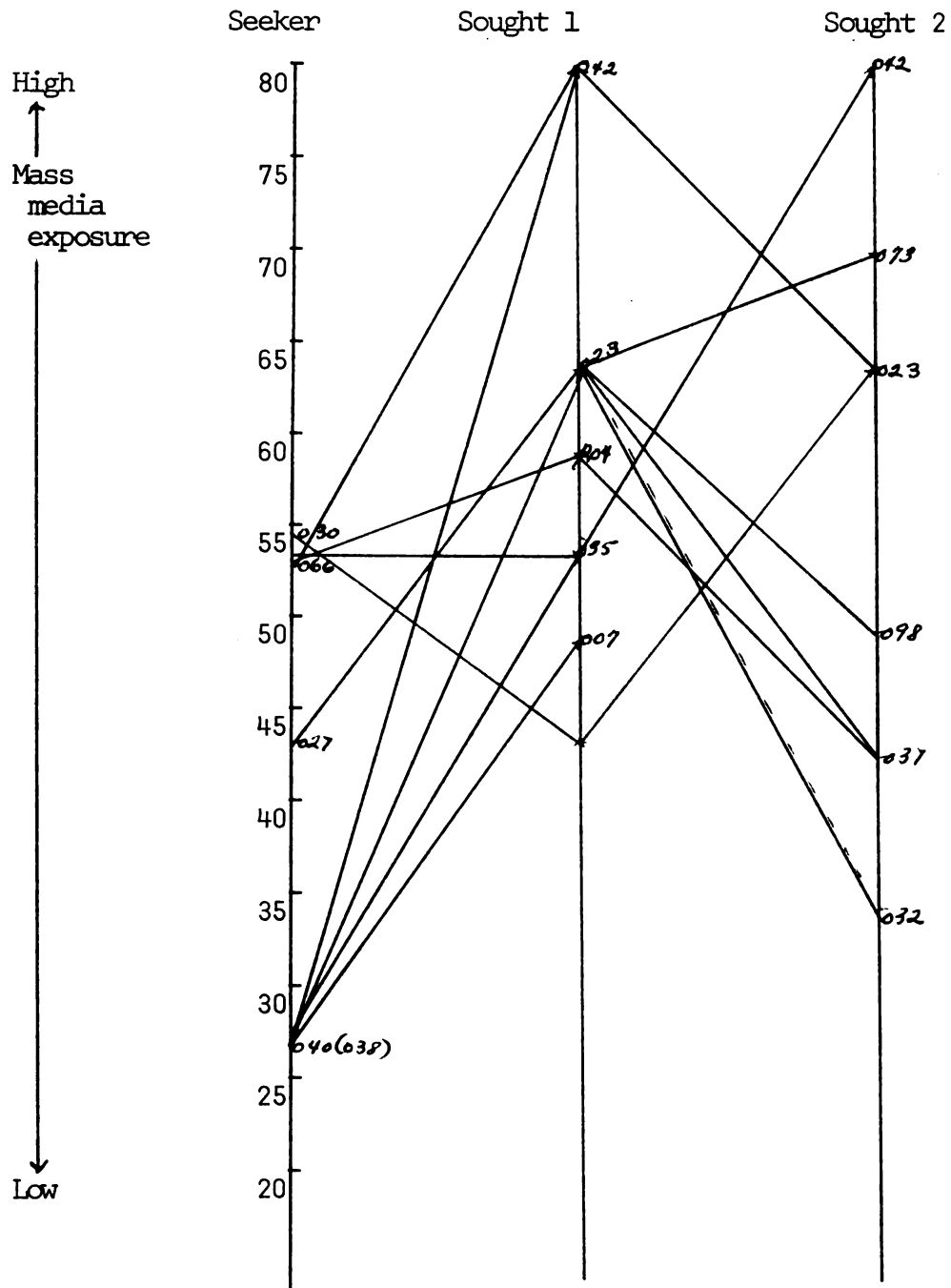


Fig. 7. Mass media exposure scores of seekers and sought in linked information flow in Clique 2.

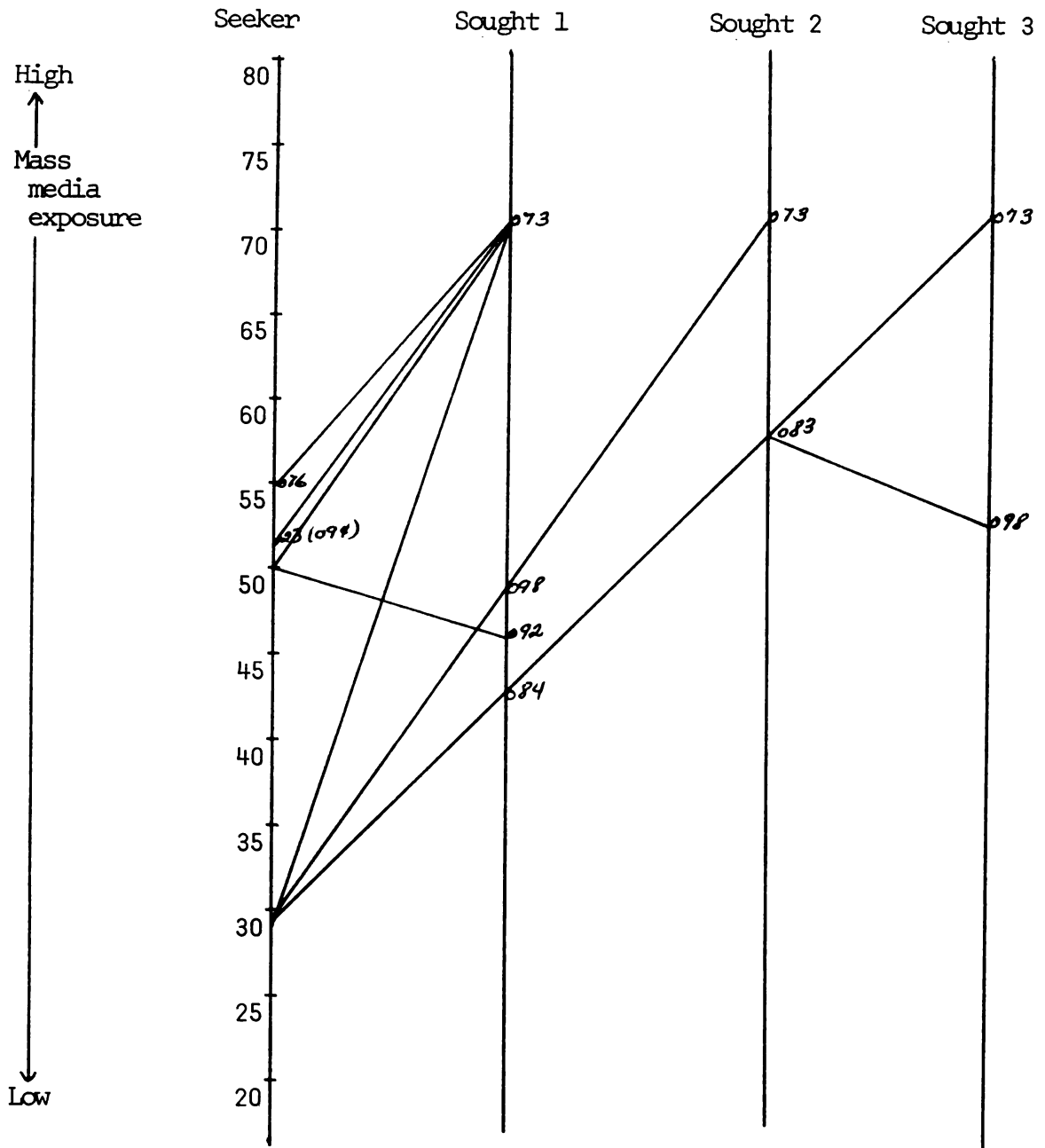


Fig. 8. Mass media exposure scores of seekers and soughts in linked information flow in Clique 3.

CHAPTER V

SUMMARY, INTERPRETATION, IMPLICATION, AND SUGGESTIONS

Summary

The present thesis is concerned with interaction patterns and the multi-step flow of communication. The objectives were (1) to examine some determinants of homophily (such as level of competence, communication contact, and status) in two kinds of interaction: friendship and information-seeking interaction, and (2) to investigate the multi-step flow of communication in terms of the number of steps and differences in mass media exposure between seeker and sought.

The data used in the present study grew out of the research project, "A Field Experiment of the Role of Opinion Leaders in Diffusing an Innovation in Three Colombian Neighborhoods." The project was directed by Everett M. Rogers in 1963, and many of the same respondents were restudied by J. David Stanfield, Eduardo Ramos, and Elssy Bonilla de Ramos with approximately the same respondents in 1965. There were 160 interviews completed in 1963: 67 in Pueblo Viejo; 36 in San Rafael; 57 in Cuatro Esquinas. One Hundred and thirty-six interviews were completed in 1965: 58 in PV; 32 in SR; and 46 in CE.

Homophily is the degree of similarity in selected characteristics between individuals in information-seeking interaction or friendship interaction. Dyadic analysis is a kind of investigation of

the networks of relationships among pairs of individuals.

There were five hypotheses in the present thesis. The first two hypotheses dealt with the degree of homophily of individuals engaged in friendship interaction and in information-seeking interaction, respectively. The third hypothesis dealt with differences in homophily of individuals engaged in friendship interaction and information-seeking interaction. The fourth hypothesis dealt with the number of steps in the flow of communication. The fifth hypothesis dealt with differences on mass media exposure scores between seeker and sought.

The first, fourth, and fifth hypotheses were confirmed. The second and the third hypotheses were not. For the first two hypotheses, the findings agreed with the predicted position: (1) none of the nine negative zero-order Pearsonian correlations (indicating degree of homophily in dyadic interaction) were significantly different from zero, (2) thirty-three zero-order Pearsonian correlations were in the predicted direction; and (3) fifteen of these thirty-three positive zero-order Pearsonian correlations were significantly different from zero.

Seven out of twenty-one Z scores (which tested the difference between two homophily indexes) were negative, and two of the seven were significantly different from zero; fourteen out of twenty-one Z scores were in the predicted direction, and six of these fourteen were significantly different from zero. Thus, Hypothesis III was not confirmed.

The failure to establish expected relationships in all cases in Hypotheses I, II, and III might be due to the following reasons: (1) the present thesis was exploratory in nature and there was little past research to guide its design; (2) the data were not gathered particularly

for the present study; (3) the variables were not crucial predictors in that the percentages of the variance explained were generally low.

The fourth and the fifth hypotheses were confirmed; they indicated that there are multiple steps in the flow of communication, and that the sought is exposed more to the mass media than the seeker.

Interpretation

The findings of the first three hypotheses will be explained in more detail. The norms of the villages may affect the results. So the following interpretations are mainly based on differences in the village norms.

General Hypothesis I

General Hypothesis I: In the communication network in the diffusion of innovations, individuals with friendship relationships have homophily on the basis of level of competence, communication contact, and status.

Empirical Hypothesis Ia was not confirmed. Functional literacy is not a determinant of friendship interaction among villagers in the three villages. Generally speaking, functional literacy was not a very important determinant of seeker-sought homophily. The individuals in the villages may not know how literate their neighbors are, so literacy is not important in selecting a friend.

Empirical Hypothesis Ib was confirmed. Innovativeness is a predictor of friendship interaction. The zero-order Pearsonian correlations in PV and SR were significantly different from zero, and the correlation was low and not significantly different from zero in CE. In

villages with more modern norm (like PV), innovativeness is a better predictor of friendship interaction. In these villages with modern norms, the individuals may know how innovative their neighbors are. Thus, innovativeness is a criteria of choosing their friends.

Empirical Hypothesis Ic, dealing with mass media exposure, was confirmed in SR and CE, but the zero-order Pearsonian correlation in PV was low and not significantly different from zero. The correlation was extremely high in SR (.767). It seems that mass media exposure is a better predictor of friendship interaction in more traditional villages. Mass media exposure might be a substitute for cosmopolitaness, which is rare in more traditional villages.

Empirical Hypothesis Id, dealing with cosmopolitaness as a basis for friendship homophily was confirmed. The zero-order Pearsonian correlation was relatively low in PV. Cosmopolitaness seems to be a better predictor of friendship interaction in more traditional villages.

Empirical Hypothesis Ie, dealing with social participation, was not confirmed. The zero-order Pearsonian correlation in CE was relatively high and significantly different from zero, and it was rather high but not significantly different from zero in SR. The homophily correlation was low and negative in PV. Social participation seems to be a better predictor of friendship homophily in more traditional villages.

Empirical Hypothesis If, dealing with age, was not confirmed. Age is not an important predictor of friendship interaction. This result is different from Warland's (1963) finding among Iowa farmers, that people who interact are of the same age. The explanation for

the present findings might be: (1) the rather crude measure (by decades of age; and (2) the villagers in the sample are all adults, and hence there is relatively less variance in their ages.

Empirical Hypothesis Ig was not confirmed. Generally speaking, social status is a relatively ineffective predictor in both modern and traditional villages.

In summary, it was found that: (1) innovativeness, mass media exposure, cosmopolitaness, and social status are relatively effective predictors of friendship interaction; (2) there is a tendency in more modern villages for mass media exposure and cosmopolitaness to be poor predictors of interaction among villagers.

General Hypothesis II

General Hypothesis II: In the communication network in the diffusion of innovations, individuals with information-seeking relationships have homophily on the basis of level of competence, communication contact, and status.

Empirical Hypothesis IIa was not confirmed. The zero-order Pearsonian correlation for functional literacy as a prediction of information-seeking in PV is significantly different from zero, but it is the only significant correlation out of the three correlations for information-seeking interactions. Earlier, it was pointed out that none of the three correlations for functional literacy as a predictor of friendship interaction were significantly different from zero. In a more modern village, functional literacy may be a more important determinant of homophily in information-seeking interaction. The finding is similar to Troidahl's (1965) and Warland's (1963) finding that

seekers and soughts were similar in formal educational level.

Empirical Hypothesis IIb was not confirmed. The only significant zero-order Pearsonian correlation is in CE (.398). In a more traditional village, innovativeness may be a more important determinant of information-seeking interaction. Conversely, in friendship interaction in more modern villages, innovativeness may be a more important determinant of interaction.

Empirical Hypothesis IIc was confirmed. It indicates that mass media exposure is a determinant of information-seeking interaction in the three villages. The only low zero-order Pearsonian correlation (.064) in PV in friendship interaction might suggest that mass media exposure is not as important a determinant of information-seeking interaction in a more modern village.

Empirical Hypothesis IIId was not confirmed, indicating that cosmopolitaness is not a determinant of information-seeking interaction. The measurement of cosmopolitaness (the number of trips to Bogotá) did not consider, however, the purpose of going to the city, thus perhaps reducing the validity of the measure.

Empirical Hypothesis IIe was confirmed. Two significant zero-order Pearsonian correlations (in SR and CE) might suggest that in more traditional villages, social participation is a more important determinant of homophily in information-seeking interaction.

Empirical Hypothesis IIIf, dealing with age, was not confirmed, perhaps for the previously stated reasons mentioned in regard to Empirical Hypothesis If.

Empirical Hypothesis IIg was not confirmed. Social status is

not a determinant of homophily in information-seeking interaction. Evidently there is vertical communication about innovations across social status levels on the present villages.

Overall, mass media exposure and social participation are determinants of homophily in information-seeking interaction. Cosmopoliteness, age, and social status are not important determinants of homophily. Literacy is a determinant for the more modern village. Innovativeness is a determinant for more traditional villages.

General Hypothesis III

General Hypothesis III: In the communication network of the diffusion of innovations, the degree of homophily between individuals with friendship interaction is greater than the degree of homophily between individuals with information-seeking interaction.

Empirical Hypothesis IIIa, dealing with literacy, was not confirmed; however, in more traditional villages the degree of homophily between individuals with friendship interaction is greater than the degree of homophily between individuals with information-seeking interaction.

Empirical Hypothesis IIIb, dealing with innovativeness, was confirmed. Three tests for the difference between the homophily indexes were significantly different from zero, indicating that in more modern villages the degree of homophily between individuals with friendship interaction is greater than the degree of homophily between individuals with information-seeking interaction.

Empirical Hypothesis IIIc, dealing with mass media exposure, was not confirmed. It appears that in more traditional villages the degree

of homophily on the basis of mass media exposure between individuals with friendship interaction is greater than the degree of homophily between individuals with information-seeking interactions in the more modern villages.

Empirical Hypothesis IIIId was not confirmed. It appears that in more traditional villages the degree of homophily on the basis of cosmopolitaness between individuals with friendship interactions is greater than the degree of homophily between individuals with information-seeking interactions. In the most modern village, the direction is in the opposite, but the score is low.

Empirical Hypothesis IIIIe was not confirmed. It appears that in more traditional villages the degree of homophily on the basis of social participation between individuals with friendship interactions is greater than the degree of homophily between individuals with information-seeking interactions.

Empirical Hypothesis IIIIf and IIIIg were not confirmed. In more traditional villages the degree of homophily on the basis of age and social status is greater than the degree of homophily between individuals with information-seeking interaction.

Generally, in the most traditional village, the degree of homophily on the basis of social participation, age, and social status between individuals with friendship interactions is significantly greater than the degree of homophily between individuals with information-seeking interactions. For functional literacy, mass media exposure, and cosmopolitaness, the tendency shows that in more traditional villages the degree of homophily between individuals in friendship interactions is

greater than the degree of homophily between individuals in information-seeking interactions. But on the basis of innovativeness, in more modern villages the degree of homophily between individuals with friendship interactions is significantly greater than the degree of homophily between individuals with information-seeking interactions. In a more traditional village the degree of homophily between individuals with information-seeking interactions is significantly greater than the homophily between individuals with friendship interactions. In the present thesis, the findings in the more traditional villages provided better support for General Hypothesis III.

Implication for Change

The different kinds of interaction patterns may suggest different strategies for a change agent planning the diffusion of an innovation. For example, if there is high homophily between individuals with information-seeking interactions, the change agent should put his efforts on the "soughts" at each level of the different characteristics, e.g., social status. Then, the innovation would spread rapidly. However, in the case of low homophily, the change agent can convert with his efforts on a few opinion leaders at the top of the social status.

Suggestions for Future Research

1. It is reasonable to assume that kinship and physical distance between individuals effect the probability of their friendship interaction and information-seeking interaction; these variables need to be investigated. This is especially true in developing countries, where transportation facilities are poor, and where physical distance and kinship are probably more important determinants of interaction.

2. Dyadic analysis could be used for gatekeeper studies, news diffusion studies, and formal organization studies. As mentioned previously, it is a powerful method for analyzing formal and informal communication patterns.

3. In the present thesis, there are only two kinds of interactions under investigation, information-seeking and friendship interactions. It would be worthwhile to investigate other types of interaction patterns, and compare them.

4. For continuous variables, zero-order Pearsonian correlation is a proper homophily index. For discrete variables, however, Coleman's (1958) index of homophily¹ may be more appropriate.

5. In order to investigate interpersonal communication by dyadic analysis an entire census of a community needs to be interviewed. It is often difficult to interview all of the people in the population. There are two ways of dealing with the problem. The first method is to interview those chosen in sociometric questions. This sampling scheme is called "snowball sampling." The second method is to obtain the sought's information from the seeker. Obviously, the

¹The formula is:

$$h_i = \frac{a_{ii} - c_{ii}}{M_i - c_{ii}}$$

where h_i = homophily index,

M_i = number of choice made by persons
in subgroup i

c_{ii} = expected number of choices from
persons in subgroup i to others
in subgroup i

a_{ii} = actual number of choices from
persons in subgroup i to others in subgroup i .

The index could be used for 2 x 2 or 3 x 3 tables.

information obtainable is limited to demographic information, for example, age, and race, which the seeker can perhaps accurately provide about his sought(s).

6. The construction of an index of individual's homophily is also needed for certain types of analysis. It could be obtained by subtracting seeker's score. Then, the relationship between the individual's homophily and other variables could be computed. The purpose of this type of analysis is to identify which individuals in a social system have a high versus a low degree of homophily.

APPENDIX

NATIONAL UNIVERSITY OF COLOMBIA

Interviewer: _____

Dept. of Sociology

(TRANSLATION FROM
SPANISH Jan. 30,
1964)

Bogotá, Colombia

STUDY ON ADOPTION OF NEW AGRICULTURAL PRACTICES

Date: _____

Checked by: _____

Name: _____

1;2;3 Number on the map: _____

Community: Cuatro Esquinas
 San Rafael
 Pueblo Viejo y Zapaguya

Note: The respondent should be a farmer or cattleman and also the head of the family.

Good morning, I'm a student from the Department of Sociology. We are doing a survey to learn about the reasons that cause farmers to adopt new practices.

1. How many years have you been a farmer? _____ (YEARS)
2. Do you have the following on your farm?: (Check those he
does not have)

Milk Herd

How many?

- 2 a) Cows - 2 years or over
2 b) Other

Meat Herd

- 2 c) Cows - 2 years or over
- 2 d) Others
- 2 e) Horses or oxen
- 2 f) Mules and donkeys
- 2 g) Pigs
- 2 h) Poultry
- 2 i) Rabbits
- 2 j) Sheep
- 2 k) Others

(ASK ONLY IF HE DOESN'T
ANSWER IN FANEGADAS)

3. How much did you plant last year? 4. Amount harvested last year?
- | | | | |
|-----------------------|------------|------------|-------|
| 3 a) Corn _____ | (FANEGADA) | (bultos) | _____ |
| 3 b) Wheat _____ | " | (cargas) | _____ |
| 3 c) Barley _____ | " | " | _____ |
| 3 d) Potato _____ | " | " | _____ |
| 3 e) Bean _____ | " | (pounds) | _____ |
| 3 f) Vegetables _____ | " | (packages) | _____ |
| 3 g) Others _____ | " | | _____ |

- 3 h) How many fanegadas of pasture do you have _____ (if he doesn't know, how many animals per fanegada?)

5. How many lots do you have?
(CIRCLE BELOW)

(Circle)

- 5 a) What is the size of each separate lot? 6. Percentage of land operated that is owned.
- | | | |
|--------------|-------------|-------|
| Lots 1 _____ | (FANEGADAS) | _____ |
| 2 _____ | " | _____ |
| 3 _____ | " | _____ |
| 4 _____ | " | _____ |
| 5 _____ | " | _____ |
| 6 _____ | | _____ |
| 7 _____ | | _____ |
| 8 _____ | | _____ |
| 9 _____ | | _____ |
| 10 _____ | | _____ |

- 5 b) Give total area of farm _____ (Fanegadas)

Specify area exploited by each of the following:

- P. Exploited by owner _____
 A. Leased by person who exploits it _____
 C. Tenant farmer _____
 E. Half-owner (shares) _____
 D. Leased to others _____
 S. In pay for services _____

(When more than one use corresponding letter, i.e., P.D.)

7. Have you employed farm hands in the last 12 months?
 No _____ Yes _____

- a) Total days worked by farm hands _____ (DAYS)

8. How many members of your family worked on your farm in the last 12 months? _____

9. Have you used (_____) in your farm?

NOT USED		When did you use the first time	Uses at present	
			YES	NO
_____	9 a) Insecticide (Aldrin)	_____	_____	_____
_____	9 b) Fungicide manzate (potato)	_____	_____	_____
_____	9 c) Chemical fertilizer	_____	_____	_____
_____	9 d) Weedkiller	_____	_____	_____
_____	9 e) Fumigator (or sprayer)	_____	_____	_____
_____	9 f) Concentrates (finca, purina)	_____	_____	_____
_____	9 g) Vaccine for Avian cholera	_____	_____	_____
_____	9 h) Selection of poultry (Rhode Island Red, New Hampshire, Hi-line	_____	_____	_____
_____	9 i) Vaccine for Anthrax (for cows)	_____	_____	_____
_____	9 j) Vaccine for foot & mouth disease	_____	_____	_____
_____	9 k) Desinfection of land	_____	_____	_____
_____	9 l) Uses tractor	_____	_____	_____
_____	9 m) Vegetables	_____	_____	_____
_____	9 n) Diaco Nariño (wheat)	_____	_____	_____
_____	9 o) Parda pastusa (potato)	_____	_____	_____
_____	9 p) Funza (barley)	_____	_____	_____
_____	10. Have you used(_____)in your house _____			
_____	10 r) A new stove _____			
_____	10 s) Toilet _____			
_____	10 t) Medicine chest for your house _____			
_____	10 u) Flashlight _____			
_____	10 v) Wrist watch _____			
_____	10 w) Sewing machine _____			
_____	10 x) Grain grinder _____			
	11. Where or from whom did you first hear about weedkiller? (SPECIFY) _____			
	12. In what year? _____ (YEARS)			
	13. Once you were interested, where or from whom did you receive additional information about weedkiller? _____			
	14. Who or what convinced you on using weedkiller in your farm _____			
	15. Who has tried to convince you <u>not</u> to use weedkiller in your farm? _____			
	16. Did you treat part or all of your farm the first time you tried a weedkiller? _____ Part _____ Total			
	17. Where or from whom did you receive information on how to use weedkiller in your farm? _____			
	18. Do you think agricultural credit is a good thing? 4			
	Yes: 5 _____ Very good or _____ little			
	3 _____ Don't know: _____			
	No: 2 _____ Little or _____ very good			

19. What is your marital status? (READ ALL THE ANSWERS)

3- _____ Single _____ Married
 3- _____ Widower _____ Free union
 3- _____ Separated

19a. Do you think it is important to talk with your wife about agriculture?

Yes: 5 _____ Very or 4 _____ Little
 3 _____ Don't know
 No: 2 _____ Little 1 _____ Very

20. Did you plant beans on your farm in the last five years?

_____ No _____ Yes

20a. When did you plant and harvest _____ (Mo.)

20b. How much did you harvest? _____

20c. To whom did you sell? _____

20d. Where? _____

21. Do you know of a bean appropriate to this region other than the climbing variety?

_____ No _____ Yes

21a. Have you heard about "col andino" bean?

_____ No _____ Yes

21b. From whom?

22. What is your opinion on planting beans in this region?

Good: 5 _____ Very good or 4 _____ Little
 3 _____ No opinion
 Bad: 2 _____ Little or 1 _____ Very bad

31. The following are some phrases taken from other farmers.

Please complete them with your own opinions.

31 a) To have 15 heads of cattle is-----

31 b) If I lost an arm in an accident (or on the farm)

I could-----

31 c) What I need most is-----

31 d) Not having enough land is-----

31 e) In order to live better on my farm I should-----

31 f) I hope my eldest son-----

31 g) In the next ten years, I'm going to-----

31 h) My major aspiration in life is-----

31 i) What my farm needs most is-----

31 j) To be successful in agriculture today, one-----

31 k) Farmers in our country need-----

31 l) A good farmer has to-----

31 m) A real man is one that-----

31 n) To make a farm produce, one must-----

31 o) To make good profits in farming, the farmer must have-----

31 p) To have 6 fanegadas of land is-----

- 30;31 31 q) In our country agriculture should be-----
 31 r) What I hope to do in my farm in the future is-----
 31 s) If I didn't progress in my work, I-----

32. What do farmers here think of the person who is the first to
 adopt new agricultural practices?

_____ Good 5 _____ Very good 4 _____ Little

3- _____ Neutral, don't know, no opinion

_____ Bad 2 _____ Little 1 _____ Very bad

33

34. Do you listen to the radio?

_____ No _____ Yes

34 a) How many times a day

34 b) Where do you listen? (MOST IMPORTANT)

1 _____ At his house

2 _____ At a friend's house

3 _____ At the store

4 _____ Other: _____

34 c) Have you heard any farm news over the radio?

_____ No _____ Yes

35. Do you read the newspaper?

No

Yes

35 a) Which ones

35 b) How many times a
 week? _____

_____ El Tiempo

_____ El espectador

_____ El Siglo

_____ La República

_____ La Nueva Prensa

_____ El Figaro

_____ El Campesino

What others _____

34

_____ No 35 c) Is the newspaper read to you by others?

_____ No _____ Yes

35 c a) How many times a week? _____

36. Have you read any farm news in the newspapers?

0- _____ No 1- _____ Yes

37. Do you read magazines?
 No _____ Yes _____

37 a) Which ones?

_____ Cromos
 _____ Visión
 _____ Familia
 _____ Life
 _____ Others: _____

37 b) How frequently during the month?

(TOTAL NUMBER OF MAGAZINES PER MONTH) _____

35 37 c) Are the magazines read to you by others?
 _____ No _____ Yes

37 d) How many times a month? _____

38. Did you read any farm news in magazines?

0- _____ No 1- _____ Yes

39. Have you seen any movies?
 _____ No _____ Yes

39 a) Where?

_____ Vereda
 _____ Facatativá
 _____ Zipacón
 _____ Bogotá

36 39 b) How many in the last 12 months? _____

39 c) Did you see any farm news at the movies?

0- _____ No 1- _____ Yes

40. Have you watched television?

_____ No _____ Yes

40 a) How many times in the last 12 months? _____

40 b) Where?

_____ In his house
 _____ At his friend's house
 _____ At the store
 _____ Other _____

40 c) Have you seen any farm news on television?

0- _____ No 1- _____ Yes

41. Have you talked to local businessmen about agriculture?

0- _____ No 1- _____ Yes

40 42. Have you talked with another farmer about agriculture in the last 2 months?

_____ No _____ Yes

42 a) With whom? (ONE OR MORE FROM THE COMMUNITY)

42 b) Did you give them any news or did they?

NUMBER

Received Gave

(1) _____

(2) _____

(3) _____

(4) _____

43. Have you talked to people from the Extension Service in the last 12 months?

_____ No _____ Yes

43 a) How often? _____ (PER YEAR)

43 b) When you talked with this person were you specially invited by him?

_____ INVITED

_____ NOT INVITED

44. Have you talked with the school teacher about agriculture in the last 12 months?

43 _____ No _____ Yes

44 a) How often? _____ (PER YEAR)

44 b) Who started this conversation about agriculture?

_____ The teacher

_____ You

45. What kind of farm news in general do you believe are useful? (READ ALL OF THEM AND CHECK)

6- _____ Yes _____ No Radio

7- _____ Newspapers

8- _____ Magazines

9- _____ Movies

4- _____ Extension Service

2- _____ School teacher

3- _____ Businessmen

Other farmers 0- _____ Neighbors

1- _____ Relatives

_____ Others

5- Yes No Others: (Specify) _____

44

46. What kind of farm news do you think are more useful?
(CIRCLE ONE ABOVE)

47. What is the name of the representative of this region to the legislature?

Right

Wrong

49. Of what country is Romulo Betancourt a citizen?

Venezuela

 Wrong

50. What's the name of the national colombian aviation company?

Right (Avianca)

Wrong

51. What's erosion?

Right (Lose of land caused by currents of water, wind, or type of soil)

Wrong

52. What purpose does the radiator serve in cars and tractors?

Right (To cool the motor)

Wrong

53. On this card are a number of words. We are interested in knowing what words are frequently used by people and what words are used less often. Will you now read what's written on the card?

Whole phrase correct.

"The man's hand moved sharply in a gesture of respect."

A

B

C

D

E

$$\frac{1}{F}$$

53 a) Are there any words on the card which you can read?

(CIRCLE THE CORRECT LETTERS)

0- None

46

HAND RESPONDENT CARD SHOWING LADDER. POINT TO TOP OF LADDER EACH TIME YOU MENTION IT. (TOP OF LADDER IS STEP NUMBER 10) POINT TO BOTTOM OF LADDER EACH TIME YOU MENTION IT. WHILE YOU ASK A QUESTION, MOVE YOUR FINGER UP AND DOWN RAPIDLY.

54. At the top of the ladder is the farmer who adopted new agricultural practices first. At the bottom is the farmer who was last in adopting new practices.

47

On what step would you stand now?

55. Now, at the top of the ladder are people whose opinion is consulted by the people of the village. An important person whose opinion is valued by others; at the bottom stands a person who is never consulted by others.

On what step do you think you stand now? _____

- 48 156. At the top of the ladder is someone who has all the opportunities and chances to do anything he wants. At the bottom stands someone who can't do the things he wants to do.

On what step of the ladder do you stand now? _____

157. At the top of the ladder stands a person who has personal capacity to make his life happier. At the bottom stands a person who has very little capacity to make his life happy.

On what step of the ladder do you stand now? _____

158. Suppose that at the top stands a person who lives in the best possible conditions of life and at the bottom stands a person who lives in the worst conditions of life.

158a. On what step of the ladder would you say you stand now? _____

158b. On what step of the ladder would you say you stood five years ago? _____

158c. On what step of the ladder do you think you will stand five years from now? _____

159. Some persons are more conservative in their way of doing things than others. How would you classify yourself?

_____ I find it very easy to change my ways.
 _____ I find it easy to change my ways.
 _____ I find it difficult to change.
 _____ I find it very difficult to change.
 _____ Don't know.

Do you agree or disagree with this statement?

160. Sometimes I feel all alone in the world.

_____ Agree 4 _____ Slightly or 5 _____ Strongly
 3- _____ Don't know
 _____ Disagree 2 _____ Slightly or 1 _____ Strongly

161. People's ideas change so much that I wonder if we'll ever have anything to depend on.
- Agree 4 Slightly or 5 Strongly
- 3- Don't know
- Disagree 2 Slightly or 1 Strongly
162. There is little chance to get ahead in this life unless one can count with the help of an influential person.
- Agree 4 Slightly or 5 Strongly
- 3- Don't know
- Disagree 2 Slightly or 1 Strongly
164. A good son tries his best to find a job where he can be near his parents even though he might have to loose a good job somewhere else?
- Agree 4 Slightly or 5 Strongly
- 3- Don't know
- Disagree 2 Slightly or 1 Strongly
165. The government's most important job after running the country, is making educational facilities available to all.
- Agree 4 Slightly or 5 Strongly
- 3- Don't know
- Disagree 2 Slightly or 1 Strongly
166. To make plans for the future is to make yourself unhappy because these plans never work out anyway.
- Agree 4 Slightly or 5 Strongly
- 3- Don't know
- Disagree 2 Slightly or 1 Strongly
167. Health experts say adding certain chemicals to drinking water results in less decay in people's teeth. If you could add these chemicals to your water, with little cost to you, would you be willing to have the chemicals added?
- Yes
- Maybe
- Probably not
- No
- Others: _____
56. Are you a member of the Cooperative? No _____ Yes _____
- Directive _____
- 56 a) Do you buy from the Cooperative? No _____ Yes _____
57. Are you associated with: No _____ Yes _____ Directive _____
- a) Community board _____
- b) Catholic Action _____
- c) Night Worship _____
- d) Christ Brotherhood _____
- e) Chicken farmers committee _____
- f) Is your wife a member of the housewives club _____

59 a) How many days in the next 12 months?

	a) KINSHIP OR RELATIONSHIP TO HEAD OF HOUSEHOLD	b) SEX (M or F)	c) AGE	d) YEARS OF SCHOOL	e) *CAN READ NEWSPAPER (Yes-No)	f) *CAN WRITE A LETTER (Yes - No)
51	1. Head of household	_____	_____	_____	_____	_____
—	2. _____	_____	_____	_____	_____	_____
—	3. _____	_____	_____	_____	_____	_____
—	4. _____	_____	_____	_____	_____	_____
—	5. _____	_____	_____	_____	_____	_____
—	6. _____	_____	_____	_____	_____	_____
—	7. _____	_____	_____	_____	_____	_____
—	8. _____	_____	_____	_____	_____	_____
—	9. _____	_____	_____	_____	_____	_____
—	10. _____	_____	_____	_____	_____	_____

61. How many years of school would you like your oldest son to complete? (or in case you had children of school age)

61.a. Do you consider this possible? Yes No

62. What occupation would you like for your oldest son?

63. During your life have you ever lived outside the community?
 No Yes

64. Have you ever thought of moving from here?
No Yes

- 64 a) Where would you like to go? _____
65. How many times a year do you go to Bogotá? _____
66. If you found an unknown disease in potatoes with what other farmer would you discuss it? _____
(NUMBER FROM ATTACHED LIST)
- a) With whom else would you discuss it? _____ (NUMBER)
67. If you needed credit to buy a plot, to what farmer would you go for information on how to acquire it? _____ (NUMBER)
- 64 a) Who else? _____ (NUMBER)
68. If your son (or other relative) were sick with what farmer would you discuss their illness? _____ (NUMBER)
- a) Who else? _____ (NUMBER)
69. If the Municipal Council of Facatativá or Zipacón wished to nominate a person from the Vereda, which of the farmers do you think it could be? _____ (NUMBER)
- a) Who else? _____ (NUMBER)
70. If you were to decide someday to sell your products in Bogotá instead of Facatativá, which farmer do you believe would be the most appropriate person to accompany you there? _____ (NUMBER)
- a) Who else? _____ (NUMBER)
71. Do people ask you for advice or counsel?
_____ No _____ Yes
72. What are some of the things they ask you?
- 1) _____
- 2) _____
- 3) _____
73. In general, do you think people turn to you for advise and counsel more than to others in the vereda?
- 1- _____ You
- 2- _____ Others
74. Have you talked to your neighbors about new agricultural practices during the last six months?
- 1- _____ Yes
- 0- _____ No

75. Have you requested advise on agricultural problems during the past six months?

1- ☐ Yes

0- ☐ No

76. Do your neighbors believe that you are the first to have adopted new agricultural practices?

1- ☐ Yes

0- ☐ No

69

77. If you were president of the Community Board, what would you do next year?

2- ☐ High

1- ☐ Medium

0- ☐ Low

78. If you were Head of the Agricultural Agency of Facatativá, what would you do to improve the price of potatoes in this community?

2- ☐ High

1- ☐ Medium

0- ☐ Low

79. If you were Mayor of Facatativá (or Zipacón), what would you do to obtain a better highway for the community?

2- ☐ High

1- ☐ Medium

0- ☐ Low

80. If you were Minister of Education what would you do for Rural Schools in Colombia?

2- ☐ High

1- ☐ Medium

0- ☐ Low

81. If you were President of the Republic what would you do to fight against violence?

2- ☐ High

1- ☐ Medium

0- ☐ Low

70

82. Do you think that the respectable persons in this community have changed in the last ten years?

☐ No ☐ Yes

- - - - -END INTERVIEW HERE- - - - -

83. Status of farmers of this community:

4- ☐ Very high

3- ☐ High

2- ☐ Medium

1- ☐ Low

0- ☐ Very low

71

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