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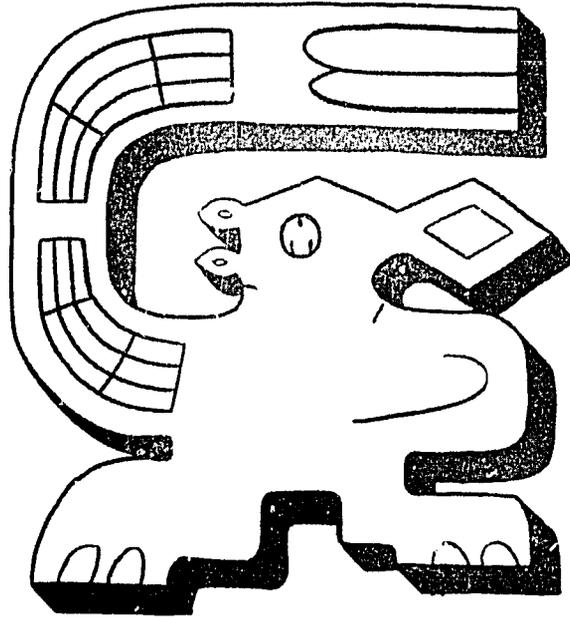
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Communication and
Agricultural Development:
A Field Experiment

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Communication and Agricultural Development: A Field Experiment

Salient findings indicate illiteracy and traditional attitudes as not impenetrable barriers; receiver personal characteristics may be less important than situational factors in diffusion of technical information.

► A communicator who seeks to speed the adoption of improved farming methods in an underdeveloped country soon finds that there are very narrow boundaries within which the mass media can perform any kind of modernizing magic. The effects of the media on farm technology can be felt only in the marginal area between the agricultural practices his "client" farmers already follow and the improved practices it would be feasible for them to follow given the situational restraints within which they must work. This notion can be pictured as in Figure 1.

The situational ceiling is set by existing physical, economic, institutional and technological factors including Mosher's five essentials of agricultural development: markets, technology, inputs, incentives and transportation.¹

The knowledge ceiling may be at or anywhere below the situational ceiling, and is set by the technology the farmer is already aware of and using.

The distance between the individual

¹ Arthur T. Mosher, *Getting Agriculture Moving* (New York: Frederick A. Praeger, 1966), p. 61.

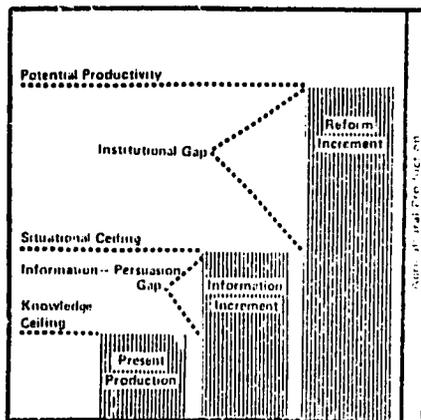
farmer's knowledge ceiling and his situational ceiling may be described as an "information-persuasion gap." It can be viewed as describing the farmer's ignorance of, or reluctance to experiment with technology accessible in his situation but beyond his experience. The size of the "information-persuasion gap" is, however, sometimes exaggerated. Farmers in underdeveloped areas are often characterized as irrationally traditional and fatalistic, refusing to accept new ideas that are "clearly" to their benefit. Instead, what may appear to be an attitude barrier will often prove, on closer inspection, to be a situational (i.e., an institutional or technological) one.

Mass media content, then, can have an immediate, direct effect on a farmer's behavior only within the range of practices situationally available to him, or in other words when media content can be defined as "locally or functionally relevant" to him.

There are two ways in which such technical information can be made locally or functionally relevant. Either it must be tailored to fit the farmer's existing situation (and the gap is some-

► Marion R. Brown is associate professor in the Department of Agricultural Journalism and the Land Tenure Center, University of Wisconsin, Madison. This report is based on research conducted in Chile last year for the Center. He returned to Chile in September. The views and interpretations expressed in this article are those of the author and not necessarily those of the supporting or cooperating organizations.

FIGURE 1
Effects of Media on Farm Technology



times so narrow that little if any information will fit), or it must be imbedded in a package of new programs and services that push up the situational ceiling. We refer to such programs as land reform, supervised credit or marketing improvement.

In either case, efforts to achieve high local relevance will usually require the development of geographically or occupationally specialized media, since the true mass media tend to limit themselves to interests held by very large numbers of people who are accessible as a concentrated mass audience and a large consumer market.

A Field Experiment

The present study was designed to test the effects of such a specialized communication program in the light of predictions and expectations derived from studies of the mass media. More specifically, it asks whether exposure patterns and effects are the same for a specialized "locally relevant" medium as for "Western Model" mass media.

The study consisted of: a) a survey to describe the existing situation, b) a "treatment" consisting of one-page mimeographed circulars mailed weekly from Santiago and c) a second survey

to describe changes produced by 27 weeks of treatment.

The primary dependent variable was technical knowledge, with some attention also to secondary diffusion of information. Independent variables included education, literacy, attitudes toward and use of modern technology, general media exposure and interpersonal communication patterns.

A control group was included as a precaution against extraneous influences, such as our own pre-treatment survey and the activities of other media and information services. This design does not control for possible sensitization-treatment interaction, and therefore does not provide a basis for generalization to an unpretested population. However, in practice a specialized information program of the type tested here would likely be preceded and accompanied by surveys, visits and other "sensitizing" activity on the part of the information agency.

Subjects were randomly selected from among all resident heads of households on two land reform colonies and two large traditional farms. In two additional communities, where lists of residents were not available, we made maps showing placement of houses, then selected every second house. If the selected house turned out not to be occupied by a farmer, we substituted successive houses until we reached one occupied by a property owner, then resumed the every-other pattern. The experimental group included 41 respondents and the control 42.

Knowledge gain was measured by three separate indicators: 1) a multiple choice test administered before and after the treatment (Before-After Test), 2) a similar test administered only after treatment (After-Only Test), and 3) an open-end item administered after treatment to measure unaided recall of main topics treated by the circular (Recall Test).

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TABLE 1
 Technical Knowledge Levels
 Before and After Experimental Direct-Mail Information Service
 Average Per Cent Correct on
 26-Item Test

Group	Before	After	Increase	N
Experimental group	58.46	70.38	11.92 ^a	41
Control group	67.03	70.23	3.20 ^b	42

^a F = 60.6 significant at beyond the .001 level
^b F = 3.7 not significant

TABLE 2
 Corrected Change Scores
 for Experimental and Control Groups

Average Change Score (Corrected)	Experimental Group	Control Group	Difference
	13.02	5.15	7.87 ^a

^a F = 11.70, significant at beyond the .01 level

The Before-After Test

This test consisted of 26 multiple choice items. It was an oral test, since many respondents could not read. Scalogram analysis yielded a reproducibility index of .87. Items analysis showed that high scorers (upper 50%) did significantly better than low scorers (lower 50%) on 23 of the 26 items; three items were answered equally well by both groups.

The results indicate significant knowledge gain. Average increase for the entire experimental group was 11.9% as shown in Table 1.

Note that the control group shows a higher average initial score. This is probably because five of the highest scorers in this group had attended high school level vocational agriculture classes. No one in the experimental group had this generally higher level of vocational education.

Note also that the control group shows a slightly higher average score the second time around. This increase is not significant when the scores are aggregated. However, if we were to

² As we pointed out earlier this initial difference between the two groups is probably due mostly to a higher level of vocational education in the control group.

omit respondents with high initial scores (above the post-test mean of 70%) as a rough control for ceiling effect, the average change score in the control group would go up to 5.15% which is significant at the .05 level. Thus part of the change in the experimental group may be attributable to something other than the treatment, possibly the effects of the initial interview. However, as can be seen in Table 2, an analysis of the change scores for both groups indicates that scores did increase significantly more in the experimental group than in the control.

The After-Only Test

This test was developed after all the circulars had been prepared and thus reflects their contents more closely than does the before-after test. The experimental group scored an average of 5.34% more than the control group. This difference is statistically significant and can be taken as further evidence that the circulars had some effect. This evidence seems stronger if we consider that the difference ran the other way on the initial pre-treatment test: note in Table 3 that the control group out-scored the experimental group by an average of 8.57% on the first half of the before-after knowledge test.²

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TABLE 3

Comparison of Knowledge Scores on Separate Tests Before and After Treatment

Group	Average Per Cent Correct Before (Before-After-Test)	Average Per Cent Correct After (After-Only Test)	N
Experimental	58.46	64.45	41
Control	67.03	59.11	42
Difference	-8.57	5.34	
Total "Change"		13.91	

NOTE: It must be remembered that the tests compared here are not identical. They are, however, related in that both concern the same domain of technical knowledge.

If we take the initial test as an indication of the *general* level of technical knowledge, then we would expect a second test on related topics to show a similar difference between the two groups (*i.e.*, control outscoring experimental by approximately 8%). This would be true if there were no effect from the circulars.

The Recall Test

A third indication of knowledge gain was an open-end item asking the subject to name as many topics as he could recall from the circulars. The average was 5.3. This was unaided recall—not mere recognition. Having no standards of comparison we cannot qualify this number as indicating high, medium or low learning. We can, however, conclude that it indicates some increase in knowledge.

Recall as Related to Content

Earlier we suggested that the local and functional relevance of any piece of technical information would be an important determinant of the amount of attention it received and consequently of the degree to which it would be remembered and used. As would be expected the relevance of the treatment circulars varies according to 1) crops and animals grown; 2) existing technology; and 3) accessibility of new technology, credit and markets. They also varied somewhat in such message characteristics as: 1) simplicity of language; 2) familiarity of concepts (*i.e.*, "translation" of rates and dosages

into familiar and simple forms of measurement); and 3) proximity of research or experience on which advice is based.

On the basis of these differences we categorized the circulars roughly as high, medium or low in relevance. Comparison of recall data on circulars in these categories showed that respondents were likely to remember most those circulars that 1) were closely related to their own enterprises, 2) dealt with techniques they do not now use, but that they can feasibly use and 3) were written in specific, simple and familiar terms. Also circulars seemed to be more readily recalled when they treated a single, very specific topic and when they made a specific recommendation.

Knowledge, Education, and Literacy

One objective of the study was to determine whether or not printed messages have utility for poorly educated, semi-literate and illiterate people.

Our working hypothesis was the illiterate and poorly educated respondents would learn *some* of the contents of the circulars through literate friends or relatives.

Education was measured by asking each respondent how many grades of school he had completed. As a test of literacy, respondents were asked to read aloud the sentence, "El hombre movio la mano rapidamente en ademan de respeto."³ This test, which was suggested by Frederick B. Waisanen of

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TABLE 4

Literacy and Before-After Knowledge Scores

Literacy Category	% Correct Before ^a	% Correct After	% Change ^b	N
Literate	70.11	79.18	9.07	17
Semi-literate	57.73	73.57	15.84	8
Illiterate	46.42	57.95	11.53	15

^a F = 19.40, significant at beyond the .01 level

^b F = 2.03, not significant (p greater than .05)

Michigan State University, yielded a three-way classification: literates who read all the words; semi-literates who read some words; and illiterates who read none of the words.

The correlation coefficient between *initial test score* and *grades completed* for all respondents was .53, significantly different from zero at beyond the .01 level. However, there was no significant correlation between *knowledge gained* and *grades completed* ($r = .039$). Eliminating high initial scores had little effect ($r = .17$). Respondents who had never attended school showed a mean gain of 12.4%, which is statistically significant ($F = 9.38$, p less than .01).

As can be seen in Table 4, literacy was also positively associated with initial scores. Again, however, the percentage increase in test scores was, contrary to expectation, smaller among literates than among semi-literates and illiterates. The differences are not statistically significant.

The increase for illiterates alone (11.53%) is statistically significant at beyond the .01 level. Thus, it is clear that illiterates can make some use of printed educational materials. This suggests that it may be a good idea to use more printed matter in agricultural extension and other educational programs for adults in underdeveloped countries. Scarcity of such materials probably contributes to loss of rudimentary reading skills developed in a year or two of school. Several respond-

ents said they learned to read as children but forgot how as they grew older. Seven of the 15 illiterates in the experimental group had completed one or more years of schooling. The same was true of seven of the eight semi-literates.

Knowledge and Media Exposure

Previous studies have shown media exposure to be significantly correlated with readiness to adopt modern practices.¹ Accordingly, respondents with high media exposure were expected to 1) know more initially and 2) learn more from the circulars.

As would be expected, there is a close relationship between literacy and exposure to the print media. Only 20% of the illiterates, as opposed to 84% of the literates and semi-literates, see a newspaper as often as once per month. Radio and literacy are also positively related. Sixty-four per cent of the illiterates, compared to 91% of the literates and semi-literates listen at least once a week. This suggests that radio may not be as widely accessible to illiterates as is sometimes imagined.

The relationship between radio exposure and test scores is shown in Table 5.

Contrary to our expectations the two groups do not appear to differ significantly with regard to initial knowledge levels or knowledge gain. Even those respondents who have virtually no radio exposure increased their scores by 10.3%, which is statistically significant.

The respondents were split into two newspaper exposure groups—those who see a paper more often than once per

¹ "The man moved his hand rapidly in a gesture of respect."

⁴ Everett M. Rogers, "Mass Media Exposure and Modernization Among Colombian Peasants," *Public Opinion Quarterly*, 29:614-25 (Winter 1965-66).

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TABLE 5

Technical Knowledge as Related to Radio Listening
(Per Cent Correct on Before-After Test)

Radio Exposure	Before	After	Increase ^a	N
High (3 or more times per week)	60.0	71.0	11.0	25
Low (2 or fewer times per week)	56.5	68.9	12.4	15
Difference	3.5	2.1	-1.4 ^b	

^a F = 34.56, significant at beyond the .01 level
^b F = 0.192, not significant

TABLE 6

Technical Knowledge as Related to Newspaper Exposure
(Per Cent Correct on Before-After Test)

Newspaper Exposure	Before	After	Increase ^a	N
High	62.23	76.00	12.77	25
Low	50.69	61.27	10.58	16
Difference	12.54 ^b	14.73	2.19 ^c	

^a F = 16.05, significant at beyond the .01 level
^b F = 14.92, significant at the .01 level
^c F = 0.50, not significant

month (high) and those who do not (low), as seen in Table 6.

As we hypothesized, the high exposure group had significantly higher initial scores. The fact that this was true for newspapers and not for radio suggests that printed media may carry more technical information than radio.

The difference in knowledge gain is in the predicted direction but is not significant. Eliminating high scores strengthens the predicted tendency, but the difference still does not approach significance. Thus, there is little evidence that previous exposure to the media, especially radio, had a predisposing effect on learning from the circulars.

Knowledge as Related to Attitudes

Hypotheses about the role of attitudes and personality traits in development cover a broad range. Some writers tend to ignore them or minimize their importance. Take, for example, the following statement by Theodore Schultz concerning the adoption of modern farming practices: ". . . since differences in profitability are a strong

explanatory variable, it is not necessary to appeal to differences in personality, education and social environment."⁵

Hirschman, on the other hand, argues that ". . . economic backwardness cannot be explained in terms of any outright absence or scarcity of this or that human type or factor of production . . ." and that attention has accordingly turned "to the attitudes and value systems that may favor or inhibit the emergence of the required activities and personalities."⁶

In much the same vein, Pool suggests that transforming traditional agriculture will require ". . . the development of a scientific attitude toward the adoption of new practices. It is only that kind of internal change in the latent structure of his [the peasant's] attitudes that would produce self-sustained movement toward modernization."⁷ Such a statement clearly implies

⁵ Theodore W. Schultz, *Transforming Traditional Agriculture* (New Haven, Conn. Yale University Press, 1964), p. 164.

⁶ Albert O. Hirschman, *The Strategy of Development* (New Haven, Conn.: Yale University Press, 1958), p. 4.

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TABLE 7

Technical Knowledge as Related to Belief in Luck
(Per Cent Correct on Before-After Test)

<i>Palley in Luck</i>	<i>Before^a</i>	<i>After</i>	<i>Increase^b</i>	<i>N</i>
Low (Work More Important)	61.5	72.5	11.0 ^c	21
Medium or High (Luck at Least as Important)	54.6	68.4	13.8 ^d	19

^a Before F = 3.13, p = approximately .08
^b Relative increase F = 1.18, not significant
^c F = 25.91, significant at beyond the .001 level
^d F = 31.11, significant at beyond the .001 level

that development is importantly, if not largely, a matter of attitude change.⁸

It is not our intent here to choose sides on this issue. Attitudes have demonstrably posed barriers to technological change in some situations, but they have also on occasion been blamed for stagnation that was demonstrably the result of concrete situational and institutional deficiencies.

In the present study we have attempted to measure two generalized attitude types that have been hypothesized to affect receptivity to information about new technology. These were:

1) "Fatalism," the belief that each man's destiny is determined by forces beyond his control; 2) "Traditionalism," the belief that the old ways of doing things are better than the new.

Fatalism

Latin American peasants are often characterized as passive and resigned to the acceptance of their lot. The impli-

⁷ Ithiel De Sola Pool, "Mass Media and Politics," in Lucian W. Pye, ed. *Communications, and Political Development* (Princeton, N. J.: Princeton University Press, 1963), p. 249.

⁸ Discussions of this and related views on the role of attitudes in development can be found in Daniel Lerner, *The Passing of Traditional Society* (New York: The Free Press, 1958); Lerner, "Toward a Communication Theory of Modernization," in Pye, *op. cit.*, pp. 327-50; David C. McClelland, *The Achieving Society* (Princeton, N. J.: Van Nostrum Press, 1958); McClelland, "The Achievement Motive in Economic Growth," in Bert F. Hoselitz and Wilbert E. Moore, eds., *Industrialization and Society* (Mouton, Netherlands: UNESCO, 1963); Everett E. Hagen, *On the Theory of Social Change* (Homewood, Ill.: Dorsey Press, 1962).

⁹ Arthur Niehoff, "Discussion: Fatalism in Asia," *Anthropological Quarterly*, 39:3:253 (July 1966).

cation is that they pass up genuinely viable opportunities to secure the use and enjoyment of material goods. We would expect such an attitude to have considerable effect on receptivity to technical information.

Niehoff⁹ describes three major types of fatalism: supernatural (the belief that events are controlled by deliberate supernatural forces); realistic (recognition that given available resources, "meaningful manipulation of the future is not very feasible"); and unspecified (luck).

The present study dealt with the last type, which was operationalized by having respondents assess the relative importance of luck and work in determining crop yields. Three responses were possible: luck and work are equally important; luck is more important than work; or work is more important than luck.

We hypothesized that the relatively more fatalistic respondents would 1) exhibit less technical knowledge initially, and 2) gain relatively less from the experimental treatment.

Table 7 summarizes the relevant before-after data.

The trend of initial scores is in the hypothesized direction, and the F ratio approaches significant (f = 3.13, p about .08). However, where knowledge gain is concerned the trend is in the opposite direction. Splitting the medium-high category, we find that even the most fatalistic group (seven respondents) improved its average score

TABLE 8

Knowledge as Related to Traditionalism
(Per Cent Correct on Before-After Test)

	<i>Before</i>	<i>After</i>	<i>Increase</i>	<i>N</i>
Father-Son Index				
Modern	61.52	71.90	10.38	26
Traditional	53.00	66.73	13.73 ^b	14
Difference	8.52 ^a	5.17	-3.35 ^c	
Ideational Index				
Modern	61.98	71.57	9.59	26
Traditional	52.19	67.57	15.38 ^e	14
Difference	9.79 ^d	4.00	-5.77 ^f	

^a F = 2.80, approaches significance (p approximately .09)

^b F = 16.80, significant at beyond the .01 level

^c F = .90, not significant

^d F = 4.15, significant at the .05 level

^e F = 33.33, significant at beyond the .01 level

^f F = 3.38, approaches significance (p approximately .07)

by 13.1%. This increase is significant, despite the very low N.

This suggests that even if it could be demonstrated that fatalistic attitudes influence the accumulation of technical knowledge by ordinary means, they do not appear to have prejudiced responses to the kind of specialized communication represented by the experimental circulars.

This finding is in harmony with Plath's analysis of fatalism among rural people in Japan. He concludes that fatalistic beliefs have little effect on actions and that instead they function as a kind of safety valve "allowing for a manageable allocation of blame and forgiveness in the social process."¹⁰

Nichoff, in a study of directed change in the Middle East and Asia, concludes that "peasant fatalism is one of the most insignificant problems that exists in inducing change and it becomes relevant only when innovation techniques are generally inefficient."¹¹

Traditionalism

Relative traditionalism was measured by two separate indices, one behavioral and one ideational. The behavioral index comes from a comparison of the respondent's technology with that of his father or guardian. It consists of the number of practices, from a list of five (vaccines, fertilizers, seed disinfectants,

2,4-D weedkiller and insecticides) which the respondent uses, but which his father does not (or did not) use. The average for the entire sample was about three changes. Respondents with one or zero changes were categorized as "traditional," those with two or more as "modern."

For the ideational index we asked respondents to describe, in considerable detail, the steps entailed in growing the best possible crop of wheat. The score consists of the number of modern practices mentioned from a list of six concerning soil preparation, seed selection, seed treatment, fertilization, weed control and insect control. We call this an ideational index because it presumably includes not as much what the respondent does, as what he thinks a "good farmer" should do. Again the average for the entire sample is three.

Low scoring (less than two) respondents were classified as traditional, others as modern, as shown in Table 8.

Traditionalism, as measured by either index, appears to be related to initial scores, with moderns consistently outscoring traditionalists. Relative increase, however, goes the other direction, and in the case of the ideational index, differences in relative gain come very near the .05 level of significance.

¹⁰ *Ibid.*, p. 252.

¹¹ *Ibid.*, p. 253.

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TABLE 9

Knowledge as Related to Mode of Reading Circulars
(Per Cent Correct on Before-After Test)

<i>Read Aloud</i>	<i>Before</i>	<i>After</i>	<i>Increase</i>
Yes	68.69	79.94	11.15
No	61.53	73.44	11.91
Difference	7.16*	6.50	-.76

* $F = 2.66$, not significant

The possibility that "traditional" respondents learned more than "modern" respondents is intriguing. More significant, however, is the evidence that traditionalism is not necessarily a barrier to the diffusion of technical information.

Interpersonal Communication

A good deal has been written about the importance of interpersonal channels in the diffusion of information and influence. Most of this writing relates to what is most often called the "Two Step Flow Hypothesis" originally postulated by Katz and Lazarsfeld.¹² Basically, this hypothesis says ". . . communications flow consists of two steps: from radio and print to opinion leaders, and from these to the less active section of the population."¹³

While the two-step idea was developed in the United States, it is perhaps even more applicable to developing nations, where mass media are relatively scarce and where illiteracy, immobility, personalism and traditional status relationships are thought to enhance the importance of interpersonal channels. As Pool puts it, "A statement is valid in a traditional society if it comes from the right oracle. It is not necessarily everyone's right to judge its validity."¹⁴ He cites a study in Cambodia which concludes that "information itself is considered sterile by the

individual villager until someone of status has interpreted it."¹⁵

The "dependent literacy" phenomenon discussed earlier could be regarded as a special case of two-step flow with literates acting as "gatekeepers." We hypothesized that this interpretation step may include not only reading and listening, but discussion and comment which could reinforce learning for both people involved. To test this idea we compared knowledge scores for respondents who read circulars to others and those who did not.

As can be seen on Table 9, the data do not support the hypothesis. Scores for the two groups are not significantly different initially, and the relative change is virtually the same.

There is no evidence, then, that participating as a "gatekeeper" in this special two-step flow had any effect on knowledge gain.

There was apparently some two-step flow aside from direct interpreting for illiterates. Eighty-three per cent of the respondents said they had participated in "several" conversations about them. All but two of those who did not were illiterate. This finding surprised us. We had hypothesized that the interpretation step would "start the ball rolling" by injecting messages into established interpersonal channels. If this were the case, however, we would expect the illiterates—all of whom reported exposure via literates—to exhibit a fairly high level of interpersonal communication activity regarding the circulars. In fact we expected to find that they were more active than those literates who did not read the circulars to others. We found the opposite: nearly half the illiterates were relatively inactive in

¹² Elihu Katz and P. F. Lazarsfeld, *Personal Influence* (Glencoe, Ill.: Free Press of Glencoe, 1955).

¹³ P. F. Lazarsfeld, *Mass Media and Personal Influence* (The Voice of America Forum Lectures, Mass Communications Series, No. 8, United States Information Agency, not dated), p. 2.

¹⁴ Pool, *op. cit.*, p. 243.

¹⁵ *Ibid.*, p. 244.

discussing the circulars outside their own households; only one of the communicatively inactive respondents was fully literate.

Opinion leadership apparently played a part in secondary diffusion. Self-identified opinion leaders were consistently named most often as "the person in the community who talks most about the circulars."

In short, the data suggest that secondary diffusion did occur, that it involved literates more than illiterates, that it occurred most often between close friends and relatives, and that self-identified opinion leaders were somewhat communicatively active than others.

Findings

The salient findings on the field experiment discussed in this paper are as follows:

1) Factual circulars on agricultural techniques, mailed directly to experimental groups of Chilean low-income farmers, workers and land reform colonists, produced measurable increases in technical knowledge.

2) Absolute knowledge gain was statistically significant at all measured levels of literacy, education, previous media exposure, attitudinal modernity, use of technology and interpersonal communication.

3) Relative knowledge gain was less clear, partly because of initial contrasts and the accompanying possibility of ceiling effect. On the whole, the data suggest that there was very little difference in relative gain that could be explained by literacy, education, media exposure, attitudes or previous use of technology.

4) Literacy and newspaper exposure (which are themselves correlated), opinion leadership and use of tech-

nology all appear to be positively related to initial levels of technical knowledge.

5) Illiterate subjects had access to the content of the circulars through literate friends or members of the household (usually the latter).

6) Secondary diffusion occurred via reading aloud, via lending of circulars, and via conversations. Literates, and especially literate opinion leaders, were more active than illiterates in discussing the circulars outside their own households. Kinship and friendship—especially established visiting patterns—also played a role in secondary diffusion.

7) Perhaps the most significant finding was that illiteracy, lack of education and so-called traditional attitudes did not constitute impenetrable barriers to the flow of technical information. In practical terms, this finding suggests that efforts to diffuse technical information via printed media need not await full literacy. In calculating literacy rates for this purpose, the household is probably a more appropriate unit than the individual. In more theoretical terms, this finding suggests that personal characteristics of receivers may be less important than institutional and situational factors in determining the spread of technology and the rate of agricultural development. It also suggests that specialized "locally relevant" media behave differently than the "true" mass media. When the audience can be identified, and its informational needs specified with some precision and then directly satisfied in the medium, the "effects" are not like those of the mass media. That is, exposure and information gain are not closely related to individual attitudinal modernity, education, literacy, economic status or previous mass media exposure experience.