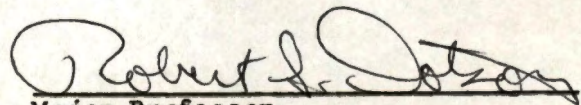


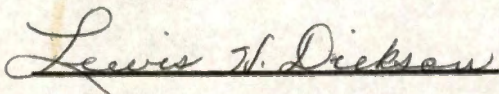
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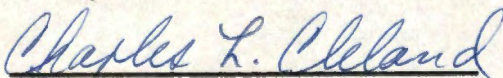
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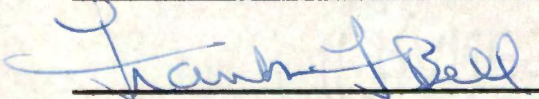
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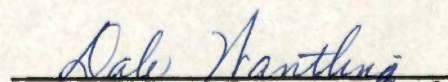
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Dean of the Graduate School

SOME IMPLICATIONS OF THE SOCIOLOGICAL RESEARCH ON DIFFUSION
AND ADOPTION OF FARM PRACTICES AND THEIR APPLICATION
TO EXTENSION EDUCATION

A Thesis
Presented to
the Graduate Council of
The University of Tennessee

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

by
Krishna A. Jalihal
August 1960

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CHAPTER I

INTRODUCTION

I. THE PROBLEM

Background Situation

The major function of the Cooperative Extension Service of the United States, as suggested in the Smith-Lever Act, is to aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same.

In order to perform this primary function, extension work has been organized around three main aspects:

1. The subject matter aspect or technical knowledge about farming or home making
2. The administrative aspect
3. The educational aspect, or reaching and teaching rural people.

It is therefore essential that an extension worker, to be successful in carrying out his function, must not only have the technical know-how and ability to run an office, but also must be able to present research-tested information to the people, and be able to motivate them to accept or use such information.

Suitable extension teaching methods are the tools needed in this educational work. The efficiency of the extension worker depends on his ability to know and correctly use these tools in proper combination.

In addition to the teaching methods which the extension worker uses to bring about desirable changes in farmers and home makers, there are other factors that may influence the extent and rate of the adoption of extension recommended practices. These factors are frequently completely outside the control of the extension worker. An awareness of their probable influence upon the use of extension information by farmers is helpful to the extension agent in selecting the teaching tools and in fitting them into a plan of work likely to yield the desired end product.¹

These factors are what are generally known as cultural or socio-cultural factors. Frequently in the history of extension work, a lack of understanding of such factors related to acceptance or non-acceptance of farm practices has been observed to be one of the largest obstacles extension workers need to overcome.

Wilson (1940) in his discussion on the cultural approach to extension work has identified this weakness by stating, "We agricultural extension workers need a great deal of the help which sociologists, social psychologists, and cultural anthropologists can give us."²

According to Kimball (1949), "Many serious conflicts have arisen because of the failure to appreciate the nature of the cultural differences while working with the nonliterate peoples in bringing about change."³

¹M. C. Wilson and Gladys Gallup, Extension Teaching Methods and Other Factors that Influence Adoption of Agriculture and Home Economic Practices: Extension Service Circular 495 (Washington, D. C.: Federal Extension Service U. S. D. A., 1955), p. 22.

²M. L. Wilson, The Cultural Approach to Extension Work, Extension Service Circular 332. (Washington, D. C.: Federal Extension Service U. S. D. A., 1940), p. 11.

³Solon T. Kimball, "Diversity and Change in the Culture of Non-literate Peoples," Farmers of the World, Ensminger, Sanders and Brunner (Eds.) (New York: Columbia University Press, 1945), p.8.

Horace Belshaw (1951) considered that "the present time appears to be one in which to reconsider and reemphasize the cultural approach."⁴

Spicer's case studies (1952) show that extension workers are in need of an understanding of the cultural factors for effective extension work.⁵

In the words of Ferguson (1953), "Studies that have been made of the successes and failures of professional people pretty conclusively show that most failures are due to a lack of competence in dealing with people and not to the lack of technical knowledge."⁶

Dube (1958), while discussing the role of cultural factors in extension work, has acknowledged that the extension workers in carrying out community development activities are often confronted with these factors at almost every step in their work.⁷

"These numerous social factors deter or promote a successful extension program depending on their nature and the way they may fit into the total community situation."⁸

⁴Horace Belshaw, "The Cultural Approach to Agricultural World Extension in Relation to Economic Development," Conference Report on Extension Experiences Around the World (Washington, D. C.: U. S. D. A. Extension Service and Office of Foreign Agri. Relations, 1951), p. 15.

⁵Edward H. Spicer, Human Problems in Technological Change (New York: Russel Sage Foundation, 1952).

⁶C. M. Ferguson, "Foreword," Knowledge and Skill in Working with Others (Chicago: The Farm Foundation, 1953), p. 3.

⁷S. C. Dube, India's Changing Villages: Human Factors in Community Development (Ithaca, New York: Cornell University Press, 1958), p. 132.

⁸C. R. Hoffer and D. L. Gibson, The Community Situation as it Affects Agricultural Extension Work, Agr. Expt. Station Special Bulletin 312 (E. Lansing: Michigan State College, 1941), p. 5.

In order to identify these related factors influencing rate of adoption of farm practices, research studies have been in progress since the early years of extension work. However, more intensive ones have taken place only in recent years. These research studies have uncovered valuable information holding possible implications for application to extension education situations. Nevertheless, very few of these studies have explicitly stated such implications. Partial explanation of this apparently rests on the fact that a majority of the research workers in this field were rural sociologists rather than experienced extension people.

Though some limited attempts have been made to summarize these results and point out possible implications for extension work, the need for more intensive effort is indicated.

In India, where the Community Development Program has been recently launched, information concerning factors influencing rate of adoption of farm practices is lacking as no research has been started, as yet, on large enough a scale to permit generalization.

Statement of the Problem

Extension is in immediate and increasing need of assistance based on the results of research conducted by workers in the fields of Sociology, Rural Sociology, Social Psychology, and Cultural Anthropology on diffusion and adoption of new farm practices. Results of these researches must be translated into a more usable, more understandable form if extension workers are to increase their efficiency as rural educators.

Purposes of the Study

The present study was made for the purpose of considering possible solutions to the above stated problem. The main purposes of this investigation, then, were:

1. To summarize and analyze the results of research work on diffusion and adoption of new farm practices according to a generally accepted classification scheme.
2. To identify and consider the implications of these results for extension education.
3. To make suggestions for application of such implications to the Community Development Program of India.

II. IMPORTANCE OF THE STUDY

Extension's Philosophy

The educational role has been of central importance in extension philosophy since the beginning.

The Smith-Lever Cooperative Extension Act of 1914 was a result of years of trial and study on the part of the Land Grant College Association and the United States Department of Agriculture. The Committee on Extension of the Land Grant College Association was greatly influenced by the report of the Country Life Commission of 1909. This report of the Country Life Commission gave the first working definition of extension work, though the word was in use several years earlier. The report explained:

This is extension work, by which is meant all kinds of educational effort directly with the people, both old and young, at their homes and on their farms; it comprises all educational work that is conducted away from the institution and for those who can not go to schools and colleges.⁹

Section two of the Smith-Lever Act of 1914 characterized extension work in the following way:

Co-operative agricultural extension work shall consist of the giving of instruction and practical demonstrations in agriculture and home economics and subjects relating to persons not attending or resident in said colleges in the several communities and imparting information on said subjects through demonstrations, publications, and otherwise. . .¹⁰

The extension philosophy acknowledges that people must be reached where they are; that is at their present stage of educational development and experience and at their present level of interest and understanding.¹¹

Some of the recognized principles involved in extension work may be stated as follows:

1. A successful extension program should be in harmony with the culture of the people with which it is concerned

⁹Excerpts from Report of Country Life Commission, 1909, The Spirit and Philosophy of Extension Work, R. K. Bliss (Ed.) (Washington, D. C.: Graduate School, U. S. D. A. and Epsilon Sigma Phi, National Honorary Extension Fraternity, 1952), p. 89.

¹⁰"Public Law 83 - 83rd Congress, Chapter 157, 1st Session S. 1679 (Amended Smith-Lever Act)," Cited by L. D. Kelsey and C. C. Hearne, Co-operative Extension Work (Cornell, New York: Comstock Publishing Associates, 1955), p. 407.

¹¹J. N. Raudabaugh, "Evaluation in Extension Education," Evaluation in Extension, Darcie Byrn (Ed.) (Topeka, Kansas: H. M. Ives and Sons, Inc., 1959), p. 6.

2. An extension program which goes against the cultural values of the people usually meets with resistance based on this very culture.
3. A successful extension teaching method needs to be selected after due consideration of the adaptability principle (i.e., varying the methods according to the needs and situations of the people)
4. A successful extension program should identify and consider the needs and interests of the people
5. An extension program will have succeeded if it results in optimum and lasting satisfaction to the people.
6. The effective extension worker can and must learn much from the local people whom he serves. His program, then, will be based on their needs.¹²

From the above stated principles, it would therefore appear that extension education involves much more than mere supply of factual information. In order to be effective in extension teaching, it is necessary that extension workers understand people and their problems and also that they know how to apply tested principles of education, psychology and sociology.

¹²Edmund deS Brunner and E. H. P. Yang, Rural America and the Extension Service (New York: Teachers College, Columbia University, 1949), pp. 176-182; M. L. Wilson and Edmund deS Brunner, "The Role of Extension in World Reconstruction," Farmers of the World, Brunner, Sanders and Ensminger (Eds.) (New York: Columbia University Press, 1945), pp. 194-199; Fred Frutchey, "Principles of Extension Teaching" (Washington, D. C.: U. S. D. A. Federal Extension Service, 1956), pp. 2-5. mimeo.

According to Lester Schlup, extension education ". . . recognizes the psychology and habits of the people in each community and utilizes those techniques that in terms of local interest and understanding have maximum effectiveness. . ."¹³

In a world wide conference, it was agreed that successful extension work depends to a large extent on understanding local culture and working in harmony with existing cultural patterns in local areas.¹⁴

Extension's Functional Responsibility

The functional responsibility of extension therefore includes:

1. the dissemination of information,
2. the development of an interest in and recognition of significant problems,
3. the encouragement of planning the best ways and means of solving the problems recognized whether by individual or group action, and
4. the stimulation of suitable action by the people themselves according to their own decisions.¹⁵

¹³Lester Schlup, "Fourteen Basic Features of Cooperative Extension Work," The Spirit and Philosophy of Extension Work, R. K. Bliss (Ed.), p. 343.

¹⁴M. L. Wilson, "Foreword," Experience with Human Factors in Agricultural Areas of the World (Washington, D. C.: Extension Service and Office of Foreign Agricultural Relations, U. S. D. A., 1949), mimeo.

¹⁵"Report of Committee of the Federal Extension Staff on the Scope of Extension's Educational Responsibility: U. S. D. A. Extension Service January 1946." Cited by Brunner and Yang, op. cit., p. 187.

The ultimate objective of this function is to develop people by bringing about desirable changes in their behavior. How can this change be brought about? Information about new knowledge has to be diffused in such a manner that people would accept it and adopt the new practice. This is a most important educational responsibility in itself and grows more important in the diverse social settings in which extension has to work. Extension then plays the important role of a dynamic medium of communication between people on the one hand and the scientific worker on the other to bring about desirable change in the people.

The Joint Committee on Extension Programs, policies and goals in describing the special feature of extension education has stated,

Extension education is not an academic exercise but is education for use now. It involves work with people, who differ in age, educational status, in interests, levels of living, culture, values, and other variables. It involves education on the farms, in the homes, the community meeting place, in the extension worker's office, at other points, and under varying circumstances.¹⁶

This peculiar nature of extension education work has been responsible for a need for the use of special methods and tools in carrying out educational activities with the people.

Extension Teaching Methods

Dr. Seaman A. Knapp, the founder of the county extension system was the first man to recognize the importance of objective methods in

¹⁶J. A. Hannah (chairman), Joint Committee Report on Extension Programs, Policies and Goals (Washington, D. C.: U. S. D. A. and Association of Land Grant Colleges and Universities, 1948), p. 33.

extension work. His demonstration method is the foundation stone of extension teaching. Along with the objective methods, both oral methods, and written and printed materials have been used in extension education.

The teaching methods used by the extension worker directly influence the success of his efforts. The effectiveness of extension education is expected to result in changed behavior on the part of the farmer, which in turn will possibly result in a change in practices; as such, the number of practices changed, has been used as a criterion for measuring the success of the extension teaching method.¹⁷

Wilson and associates of the U. S. D. A. have contributed substantially to the research work on the effectiveness of extension teaching methods.¹⁸ Their studies have furnished useful information which may be considered indicative of the relative influence of the various teaching methods. However, the research into educational methods as such does not provide the complete answer to the question of why a given method succeeds or fails nor does it necessarily explain why the new practice is or is not accepted. We are not justified in simply stating "people resist change," when we observe that the same methods which were successful in bringing about change in practices fail to produce such change when applied to a given new situation. The important point, thus, is the

¹⁷Wilson and Gallup, op. cit., p. 11.

¹⁸M. C. Wilson, Extension Methods and Their Relative Effectiveness. U. S. D. A. Technical Bulletin 106 (Washington, D. C., U. S. D. A., 1929); Wilson and Gallup, op. cit.

skill needed in selecting the appropriate method for the particular situation.

Cultural Approach in Extension

In extension teaching, we are trying to bring about changes in human beings, such changes being difficult to measure to say the least. In human relations it is difficult to foresee the effects of one change after another, hence, there is no way of planning or plotting the program by a common blueprint. In other words, we cannot have a uniform plan of teaching that will include all people. Our teaching plan has to be fitted by tailoring to the needs of people in local situations in order for it to be most effective. The situation in which the group finds itself conditions its response to a given practice and the teaching method which may prove most appropriate. This situation includes the established organizations, habits and attitudes of the people. They may facilitate or impede the processes of education. A specific and general understanding of these in each area is therefore a prime requisite to planning and carrying out any program necessitating changed behavior in people.¹⁹

"In simple terms, this is known as the cultural approach."²⁰ The cultural approach in extension is of vital importance, as changes in practices mean possible corresponding changes in culture. Once this im-

¹⁹Carl C. Taylor, "The Cultural Approach to Extension Work," Conference Report on the Contribution of Extension Methods and Techniques Toward the Rehabilitation of War Torn Countries (Washington, D. C.: U. S. D. A. Extension Service and Office of Foreign Agricultural Relations, 1945), p. 225.

²⁰Ibid.

portance is recognized, it also carries with it a recognition of the fact that extension work must include consideration of culture and cultural trends.

The core of any culture is its value system. This is not so liable to change as are the technological or economic aspects of life. Ideas giving meaning to the activities, the stresses and strains of everyday life are bound together in the value systems. Although they are difficult to find out, anything that challenges them is likely to meet with resistance or open hostility.²¹

The cultural approach to any problem not only seeks to understand the dominant value system but it looks on the ways of living in a society as a whole of inter-related parts. . . . You cannot introduce into any given culture some new items without expecting effects in many parts of it.²²

Numerous instances can be cited to show the importance of cultural factors in bringing about a technological change. Margaret Mead has quoted several of such instances.²³

Wilson has emphasized this aspect by stating,

A recognition of the importance of knowing the culture of the group carries with it a recognition of the fact that agricultural extension work like any other educational activity, cannot combat culture or cultural trends. Any educational program works best

²¹M. L. Wilson, The Cultural Approach to Extension Work. Extension Service Circular 332. (Washington, D. C.: Federal Extension Service, U. S. D. A., 1940), p. 6.

²²Ibid., p. 7.

²³Margaret Mead (Ed.), Cultural Patterns and Technical Change (Paris: UNESCO, 1954).

by sinking its roots deep into the culture and injecting its contributions in such a way that ultimately it permeates through the whole instead of imposing something from above or from outside.²⁴

Extension's Relations with Other Social Sciences

Carl Taylor, in discussing the importance of cultural approach to extension, has made a case for the need to understand those things that are idealized and operative in the people's culture, as such knowledge is vital to extension workers because practically all extension programs must reach the local people through some overhead machinery.²⁵ He further has stressed the need to:

. . . understand the channels by which the needs and aspirations of local people travel upward through the class structure of society and by which the contributions of those high up, travel upward and the services, to them, travel downward.²⁶

If extension work has to be effective in diagnosing and working with a culture as a whole, the extension workers need the assistance of the other social sciences, like Sociology, Rural Sociology, Social Psychology, and Cultural Anthropology. Extension is therefore in immediate need of the results of research conducted by these sciences on this aspect of culture and cultural change as related to diffusion and adoption of new farm practices. More evidence is needed as to why some people respond more readily than others in the adoption of new farm practices.

²⁴M. L. Wilson, The Cultural Approach to Extension Work, op. cit., p. 8.

²⁵Carl C. Taylor, "The Cultural Approach to Extension," The Contribution of Extension Methods and Techniques Toward the Rehabilitation of War Torn Countries (Washington, D. C.: U. S. D. A. Extension Service and Office of Foreign Agricultural Relations, 1945), p. 195.

²⁶Ibid.

To be more specific, answers to the following questions have to be obtained by such studies in relation to the diffusion and adoption of farm practices:

1. What are the individual attitudes which are favorable or resistant to change, and how can they be most effectively modified?
2. What motivations can and should agricultural education use and how?
3. How fast can cultural change proceed without disrupting the stability of the culture itself?
4. What can educational processes in agriculture do to bridge the apparent gap between the changes in the technological and economic spheres and in the non-material spheres of life?
5. What are the value systems of the group with which we deal?
6. What are the values that would be affected by the attempt to turn farming more completely into a nationalized efficient enterprise?
7. What are the folkways of our economic and governmental process, and how do they operate in the life of the farmer?²⁷

The Joint Committee report has recognized the importance of research on diffusion and adoption of farm practices on the following words:

Reasons must be found why different strata within the rural population served react differently to the methods and procedures used by extension. It is not enough to measure total participation alone.

It is considerations such as these that lead to the recommendation that while service or action, evaluation studies should be continued, more emphasis and resources should be directed in the future to undertaking some pioneer, path-finding and fundamental research into the social, economic, and cultural factors which affect and even condition the extension program. It is believed that such studies would yield high dividends as the findings come to be applied, in increasing the coverage and lifting the efficiency of extension teaching to a high level.²⁸

²⁷M. L. Wilson, *The Cultural Approach to Extension Work*, op. cit., p. 11.

²⁸Hanah, op. cit., p. 4.

Spicer has edited a number of case studies in a book entitled, Human Problems in Technological Change.²⁹ Each of the case studies included is an actual example of an effort to bring about a change in technology. Both successful and unsuccessful attempts are included in these case studies. These studies clearly show how the understanding of the area of culture and cultural change has its implications for extension work. As an introductory statement to these studies, Spicer has stated,

During the past two centuries all over the world, we have seen similar sweeping re-organizations of people's lives as a result of the introduction of new means of subsistence, new tools, and also. . . ideas. . . Such transformations are not queer accidents. They are the result of the working of the basic principle that customs and beliefs are linked into a whole, and that changes in one aspect of life will have repercussions in other aspects. This interdependence is really the elementary fact from which the analysis of each case in this book proceeds and to which each returns.³⁰

Present Use Made of the Sociological Research

Research work on the diffusion and adoption of farm practices has been in progress since the early years of extension work in the U. S. A. In recent years, especially after the publication of the Joint Committee Report in 1948, efforts have been intensified and new knowledge has started accumulating rapidly. A stage has been reached where generalizations can be made from the findings of many of the studies, and their implications stated for application to extension education.

²⁹Spicer, op. cit.

³⁰Ibid., p. 17.

The Committee Report on the Social Sciences in Relation to Extension Work has made a strong plea for the immediate use of the results already available to facilitate the diffusion and adoption of farm practices. The concluding paragraph of this report has stated,

The knowledge of sociologists, anthropologists and social psychologists will never be as exact as that used by the engineer or biologist, but this committee of sociological scientists agrees with President Conant of Harvard who has said it is his belief that methods have already been developed to a point where studies of society by competing scholars can provide basic information to assist all those Practical men who struggle with the group of problems listed under the head of human relations. Powerful tools are in the process of being forged by the scientists who study man as a social animal. These tools can be used to further or destroy certain types of behavior and certain social patterns. With him we believe that policy makers in government, business, and education must be increasingly aware of the assistance they can receive from those who study man and society. In no field of human behavior can they receive, or do they need greater assistance, than in programs designed drastically to change the economy and culture of the underdeveloped areas of the world.³¹

The above discussion raises the following important question:

Are we sure that we are making effective use of that body of organized study which we have already been able to develop with respect to Extension's way of doing things, the problems they have met, and overcome, and, not the least significant, those things which we have found to be not so successful as others?³²

Kepner's question quoted above appears challenging, particularly to the research work on the diffusion and adoption of farm practices.

³¹"Committee Report on the Social Sciences in Relation to Extension Work," Conference Report on Extension Experiences Around the World (Washington, D. C.: U. S. D. A. Extension Service and Office of Foreign Agri. Relations, 1951), p. 191.

³²p. V. Kepner, "Need for Increased Emphasis on Extension Research," Research in Extension, Report of a National Workshop, May 9-13, 1955 (Washington, D. C.: Federal Extension Service, U. S. D. A., 1955), p. 5.

On a careful study of the situation, very few students of extension-research will answer the above question positively, especially as it relates to the research on the diffusion and adoption of farm practices. One of the main reasons for not utilizing the results may be the lack of availability of literature summarizing the research findings with their explicit implications for extension teaching.

B. T. Shaw, while addressing a workshop of research workers, has emphasized the need for making available the results of extension-research in a form that could be easily used by extension workers.³³ His statements are reproduced in part to support the above viewpoint:

One of our problems is better communication between scientific people. I think we are doing a fair job, between scientists, but we are falling down beyond that point - scientists communicating information to the extension leaders, who are engaged in the job of translating that information to users.

.....
We are now in that stage where we have to develop new devices of better communications between scientists. . . It would require a different kind of summary than we have been putting in our current publications. It will have to get down to the meat of things. . . I think that the scientists will have to do a better job in trying to translate their information to the other specialists who in turn will be able to make a second translation to the county agents and they in turn to the farmers. . . We have been too content in the past to publish findings and feel that our part of the job was finished. We haven't made it easy for the folks in extension to carry this story of the scientists to the farmers.³⁴

³³B. T. Shaw, "Shortening the Lag Time Between Research Findings and Their General Use," Research in Extension: Report of a National Workshop, May 9-13, 1955 (Washington, D. C.: U. S. D. A. Federal Extension Service, 1955), pp. 7-9.

³⁴Ibid., p. 8.

In 1957, two years after Shaw's above statement, Administrator Ferguson has re-emphasized the above viewpoint by considering the work of making use of the research knowledge as "extension's challenge."³⁵

Ferguson mentioned that a great backlog of know-how is available to apply in extension. This knowledge has been accumulated due to research work in the behavioral sciences and if utilized properly could improve the educational results two to four times.³⁶

Summarizing the Research Work - A Brief Review

Now coming back to the research studies on the diffusion and adoption of farm practices, it may be said that there is a great need for translating the research findings into a more usable form. Many of the scientists in this field happen to be rural sociologists, who have had limited experience in the field of extension. Probably on account of this, very few attempts have been made by the rural sociologists to state the explicit implications of such studies for extension teaching. A brief historical review, of the attempts made so far in summarizing and generalizing the findings of research studies in this area of diffusion and adoption of farm practices, might be helpful in clarifying this point still further.

³⁵C. M. Ferguson, "Extension's Challenge, Research in Extension: Summary of an Extension Research Workshop, May 6-10, 1957 (Washington, D. C.: Federal Extension Service, U. S. D. A., 1957), p. i.

³⁶Ibid.

Smith and Wilson (1930)³⁷ have summarized the results of the "farm practice adoption studies" conducted by the Extension Service during the period 1920-1930. This was the pioneering work to summarize such research findings. Some generalizations of the results concerning the influence of certain family and farm characteristics on the adoption of farm and home practices have been stated in this work. Explicit implications of these findings for day to day extension teaching were not included. Moreover, the research in the area of farm practice adoption was not yet developed at that time and as such, these summaries have limited value for extension.

Federal Extension Service of the U. S. D. A. has been publishing the summaries of findings of all research work in extension in various forms. Since 1946, these are made available through the publication - Review of Extension Studies (now, Review of Extension Research). These reviews are currently the best available sources of annotated bibliographies. However, explicit presentation of the implications of the findings of the research summarized is not always made.

Further efforts to present the results of diffusion research in an understandable form were not made until 1952. In that year Lionberger³⁸ reviewed the research studies on the diffusion and adoption of farm

³⁷C. B. Smith and M. C. Wilson, The Agricultural Extension System of the United States (New York: John Wiley and Sons, 1930), pp. 337-348.

³⁸H. F. Lionberger, "The Diffusion of Farm and Home Information as an Area of Sociological Research," Rural Sociology, XVII (June 1952), pp. 132-143.

practices. His main objective was to classify the research work and point out the deficiencies, so as to improve future research.

In the same year, the Sub-Committee on the Diffusion and Adoption of Farm Practices of the Rural Sociological Society published a report entitled "Sociological Research on the Diffusion and Adoption of New Farm Practices."³⁹ A review of previous research and a statement of hypotheses and needed research was made by the sub-committee. The main concern of this report was to isolate major problem areas. Four such areas were identified and the major research problems in each of the problem areas were also mentioned. A very short summary of the individual studies is mentioned in this report. This report too, has not included the explicit implications of the research findings for application to extension. This may be attributed to two reasons:

1. The Sub-Committee was mainly concerned with an appraisal of research completed and of research needed.
2. The Sub-Committee mainly composed of rural sociologists may not have given enough thought on the need for stating the implications of research in a form so as to be useful for day to day extension work.

Credit for putting the research results into a more usable form for the first time must go to the Agricultural Extension Services of the North Central Regions and the Sub-Committee for the Study on Diffusion

³⁹Sub-Committee on the Diffusion and Adoption of Farm Practices, the Rural Sociological Society, Sociological Research on the Diffusion and Adoption of New Farm Practices, Kentucky Agricultural Experiment Station Report, RS 2, Lexington, June 1952, mimeo.

of Farm Practices, an adjunct of the North Central Rural Sociology Committee.⁴⁰ Their first publication was brought out in 1955. This was also an attempt to have a concentrated co-operative effort by the rural sociologists and the extension staff. Although the report has stated a few explicit implications of the research results for extension work, it is worthy of commendation for the right lead given in this direction. Five different stages in the diffusion process, namely, awareness, interest, evaluation, trial, and adoption, have been identified.⁴¹ Farm people are classified into four categories according to the sequence in which they adopt new practices. These will be dealt with in Chapter IV.

Characteristics of the farmers related to the adoption of farm practices were also discussed in the Iowa publication with brief generalizations concerning applicability of research findings. A few implications for extension teaching, especially in connection with the sources of information to be used in various stages of the diffusion process, have been explicitly stated and will be discussed in Chapter IV.

Wilson and Gallup (1955)⁴² have summarized the results of extension studies on the adoption of farm practices. These summaries are

⁴⁰North Central Regional Publication No. 1 of the Agricultural Extension Services, How Farm People Accept New Ideas, Special Report No. 15 (Ames, Iowa: Agricultural Extension Service, Iowa State College, 1955).

⁴¹Ibid., pp. 3-4.

⁴²Wilson and Gallup, op. cit., pp. 22-25.

more or less similar to those published by Smith and Wilson in 1930; but the summary interpretations have been based on the findings of a larger number of more recent studies than earlier ones. In addition to the findings on the influences of farm and family characteristics reported earlier, Wilson and Gallup have also included the results of studies on the effect of socio-economic status of the farmer on his practice adoption. Not even this study has clearly stated the implications of such results in a more explicit way. Moreover, large number of studies, conducted by Rural Sociologists and Extension-research staff members, were not reviewed.

More recent efforts to make available the research results in a simplified way are the following publications:

1. "Research Summaries" of the Federal Extension Service, published since 1956.
2. "Search," a periodic paper published by the National Project in Agricultural Communication at the Michigan State University, which has recently stopped the publication.
3. The "Evaluator," a paper published periodically by the Department of Agri. Economics and Rural Sociology of the Pennsylvania State University.

These above mentioned publications summarize the individual studies in all fields of Extension Research, except in the case of the "Search," which was primarily concerned with the research in various areas of agricultural communication. Explicit implications of the research findings for extension work have been stated in most of these publications. They

may provide a reasonably valued source of resource material for drawing generalizations applicable to extension education. However, surprisingly few studies relating to specific research in the area of the adoption of farm practices have been summarized in these later publications.

Lionberger's paper (1958)⁴³ is more or less concerned with the academic interest. This report is primarily a criticism of the methodology and techniques used in conducting research on the diffusion and adoption of farm practices. Suggestions are made for further research.

Wilkening (1958)⁴⁴ has summarized the findings of research on the diffusion and adoption of farm practices under two categories:

1. The Process of Acceptance of Technological Innovations in Rural Society
2. Communication and Technological Change in Rural Society

In his first article, the findings of research have been discussed under the following headings:

1. Acceptance of innovations as a process
2. Technological change as a function of group identification
3. The informal leader and the innovator in farm technology
4. The family and technological change
5. Age and education in acceptance of technological change

⁴³H. F. Lionberger, "Present Status and Prospects of Research Relating to the Diffusion and Use of New Farm Practices." (Paper read at the seminars for Co-operators in the T. V. A. Agri. Economic Research Activities, Knoxville, Tennessee, March 26, 1958.)

⁴⁴Eugene A. Wilkening, "The Process of Acceptance of Technological Innovations in Rural Society," Rural Sociology, A. L. Bertrand (Ed.) (New York: McGraw Hill Book Company, 1958), pp. 386-399; Idem, "Communication and Technological Change in Rural Society," Rural Sociology, A. L. Bertrand (Ed.), pp. 370-385.

6. Culture and community differences in the acceptance of innovations.

Concerning the second article, Wilkening has categorized the following topics for his analysis:

1. Communication and culture
2. The channels of communication and their uses
3. Neighbors and friends
4. Informed leaders
5. Community contacts
6. Mass communications
7. Educational and public agencies
8. Channels of communication in the process of change.

Neither of the above mentioned Wilkening publications has explicitly stated the implications of the research findings for application to extension educators.

Concluding Statement

The above review discussion is provided in support of the view already stated - that there is need for the explicit statement of implications, of the results of research on the diffusion and adoption of farm practices, for extension education.

Thus, succinctly stated, the importance of the present study lies in its attempt to present some of the implications of the research findings on the diffusion and adoption of farm practices in a more usable form for use by extension workers.

III. METHOD OF STUDY

The title of the study itself is suggestive of the method to be followed. A library way of research was conducted. Information was obtained from both the primary sources and the secondary sources. Primary sources included the research publications themselves, while the secondary sources consisted of bibliographies, research summaries and also articles and reports summarizing the results of research work reported earlier. Attempts were also made to collect and utilize the unpublished material. Some of the research workers in the area of diffusion and adoption of farm practices were approached to send their recent research reports presented at several conferences and these were profitably utilized for the purposes of this study.

The investigation consisted of:

1. Collecting the relevant research data
2. Stating the research findings by classifying them according to a generally accepted system
3. Analyzing them, wherever needed or possible
4. Stating the implications of the research findings in a more explicit way
5. Summarizing the implications.

IV. ORGANIZATION OF THE STUDY

The study has been organized into six chapters. Chapter II is devoted to a discussion of some fundamental concepts regarding culture

and cultural change as related to the diffusion and adoption of farm practices. A short historical review of the relevant research studies has been reported in Chapter III to serve as a basis for the investigation. This chapter ends with a list of major problem areas, with a further breakdown into research problems categorized in the generally accepted scheme of classification. This system has been recommended by the Sub-Committee on the Diffusion and Adoption of Farm Practices. The core of the investigation consisting of the research findings and their implications has been presented in Chapter IV. Some of the possible applications of this study for the extension program in India are suggested in Chapter V. Extension workers involved in the Community Development Program of India may be benefitted by some of the findings of this study. As usual, the last chapter summarizes the contents of all the earlier parts and is followed by the Bibliography.

V. DEFINITIONS OF TERMS USED

For the purpose of this study, the following terms have been used throughout the text of the thesis having the meaning defined in this chapter.

Acceptance

This term is used to include both the approval of a new practice or idea as well as its usage and the subsequent consequences.

Acceptor

A person who accepts a new practice or idea is termed an acceptor.

Adoption

Adoption carries the same meaning as acceptance or diffusion.

Adopter

The word adopter is used as synonymous with "acceptor."

Culture

The term culture refers to the man made part of his environment. Culture consists of:

- 1) Habitual and systematized ways by which people make a living
- 2) Social organizations used by the people as agencies to achieve their purposes and wishes.
- 3) Attitudes, beliefs, and the sanctioned ways of life.

Cultural

Anything pertaining to culture as defined in this study is known as cultural.

Community

For the purposes of this study, the word community refers to a group of people inhabiting a limited area who through their organized relationships share and carry on activities in pursuit of their common interest.

Diffusion

Diffusion is the borrowing and accepting of cultural traits or patterns from other social units or individuals. It is therefore used as synonymous with acceptance and adoption. Diffusion may be intersocietal or intra-societal.

Education

Education is the sum total of learning experiences. This word is used in the text of the thesis to mean both formal education and extension education depending on the context. In most of the cases, it means extension education, as indicated, when occurring under such headings as "Implications for extension teaching."

Family Factors

These are the factors which involve joint endeavors or roles by family members which influence the acceptance of farm practices. These include the decision making roles of family members and the values they place on other family needs.

Farm Practices

The phrase refers to research tested new farm practices recommended to farmers through extension service and other sources.

Human Factors

The term "human" is used synonymous with the word "cultural." Hence human factors connote the same meaning as cultural factors or socio-cultural factors.

Innovation

A new idea, practice or thing is referred to as an "innovation."

New Farm Practices

This phrase is used in the same meaning as the term farm practices.

Novelty

The word novelty is synonymous with the term "innovation."

Neighborhoods

These are informal groupings within a community, the geographical boundaries of which are generally not mapped. This does not necessarily mean that every community has neighborhoods. Mutual interest and proximity of living are the deciding factors involved.

Implications

The term is used to mean inferences obtained by the research studies which serve as guidelines for extension teaching.

Socio-economic

This word refers to the relationship which may be found to exist in a particular community between the economic status of the farmers and the attitudes and values associated with it.

Socio-cultural

The term socio-cultural has been used as synonymous with cultural.

Sociological Research

As defined in this study, sociological research refers to the research studies conducted by sociologists, rural sociologists and extension staff members on the cultural factors.

Value

The word refers to an affectively (emotionally) charged tendency to action which involves preferences and often conscious choices among possible alternatives.

Value Systems

These are the ways people look at life in general which act like binding forces of ideas and make meaningful the life's activities, the stresses and the strains.

Traits

The individual units of which culture is made up. These may be the attitudes, values, beliefs, ways of living, institutions and the like.

CRANESHOT REST

CHAPTER II

SOME FUNDAMENTAL CONCEPTS REGARDING CULTURE AND CULTURAL CHANGES AS RELATED TO THE DIFFUSION AND ADOPTION OF FARM PRACTICES

I. CULTURE AND CULTURAL CHANGE AS RELATED TO DIFFUSION OF FARM PRACTICES

Culture and Extension Work

One of the guiding philosophies is that any extension program to be successful must be in harmony with the culture of the people.¹ It is therefore desirable to understand the concept of culture and cultural change so as to see how diffusion and adoption of farm practices are related to this concept.

Meaning of Culture

Social scientists often use the term culture as synonymous with the word society.² Culture is also recognized to be a systematic and integrated whole. "What culture is, can be better understood from knowledge of what forms it takes and how it works than by a definition."³ All the same, it will be worthwhile to study some definitions. More than one hundred and sixty definitions have been uncovered by Kroeber and Kluckhohn.⁴

¹M. L. Wilson and Edmund deS Brunner, "The Role of Extension in World Reconstruction," Farmers of the World, Brunner, Sanders, and Ensminger (Eds.) (New York: Columbia University Press, 1945), p. 195.

²Lowry Nelson, Rural Sociology (New York: American Book Company, 1955), p. 7.

³A. L. Kroeber, Anthropology (New York: Harcourt, Brace and Company, 1948), p. 252.

⁴A. L. Kroeber and C. Kluckhohn, "Culture: A Critical Review of Concepts and Definitions," Peabody Museum Papers, LXVII (1) 1952, Cambridge, Massachusetts.

Tylor defined culture as ". . . that complex whole which includes knowledge, belief, art, morale, laws, custom, and any other capabilities and habits acquired by man as a member of society."⁵

In the above definition of Tylor, the use of material objects is not mentioned, and it appears as if material objects do not form part of the culture.

Elwoods has given a more detailed definition as follows which includes the material objects.

Culture is transmitted socially, that is by communication, and gradually embodies in a group tradition of which the vehicle is language. Thus, culture in a group is a matter of habits of thought and action acquired or learned by interaction with other members of his group. Culture includes all of man's acquired power of control over nature and himself. It includes, therefore, on the one hand, the whole of man's material civilization, tools, weapons, clothing, shelter, machines, and even systems of industry; and on the other hand, all of non-material or spiritual civilization, such as language, literature, art, religion, ritual, morality, law, and government.⁶

According to Wallis, culture includes ". . . the artificial objects, institutions and modes of life or of thought which are not peculiarly individual, but which characterize a group."⁷

One of the latest definitions of culture as given by Linton includes, ". . . the sum total of the knowledge, attitudes and habitual

⁵E. B. Tylor, Primitive Culture: V. I (London: John Murray, 1871), p. 1.

⁶Elwoods, Cultural Evolution, 1927, p. 9.

⁷Wilson D. Wallis, Culture and Progress (New York: McGraw Hill Book Company, 1930), p. 9.

behavior patterns shared and transmitted by the members of a particular society."⁸

Kroeber objects to the use of the word social transmission as it connotes the meaning social heredity, which in turn excludes what is acquired socially or culturally.⁹

One of the shortest definitions of culture as stated by Herskovits describes it as ". . . the man made part of the environment."¹⁰

The concept of culture as used by social scientists is not as broad as generally viewed by anthropologists. However ". . . the concept of culture as viewed by the former includes also the creations of man. These may belong to material and immaterial, constructive and destructive."¹¹

Margaret Mead, while discussing the cultural patterns and technical change, has explained:

Culture covers not only the arts and sciences, religions and philosophies to which the word has historically applied, but also the system of technology, the political practices, the small intimate habits of daily life, such as the way of preparing or eating food, or of hushing a child to sleep, as well as the method of electing a prime minister or changing the constitution.¹²

In a discourse on the role of culture in extension work, Edmund deS Brunner describes his concept of culture as consisting of the following:

⁸R. Linton, "Acculturation," Acculturation in Seven American Indian Tribes, R. Linton (Ed.) (New York: D. Appleton Century Company, 1940), p. 466.

⁹Kroeber, op. cit., p. 253.

¹⁰Melville F. Herskovits, Cultural Anthropology (New York: Alfred A. Knopf, 1958), p. 305.

¹¹Marshall A. Jones, Basic Sociological Principles (New York: Ginn Company, 1949), p. 111.

¹²Margaret Mead (Ed.), Cultural Patterns and Technical Change (Paris: UNESCO, 1954), p. 9.

1. Habitual and systematized ways by which people make a living
2. Social organizations used by the people as agencies to achieve their purposes and wishes
3. Attitudes, beliefs and the sanctioned ways of life.¹³

Other extension rural sociologists like Carl Taylor,¹⁴ and extension philosophers like M. L. Wilson¹⁵ also view culture according to Brunner's concept. Carl Taylor designates the attitudes and beliefs of the people as the cement of their society.¹⁶ The word 'culture,' as used in this study carries the meaning as discussed in this last concept.

Culture in its totality is very valuable to the people. In any society, it is common to observe some systematic ways of preserving the people's culture. In fact, it is the basis for all life decisions. The influence of culture is so great that even when people are losing everything else, they would like to retain their culture. No people are so primitive as to lack culture.

Culture and Value Systems

"People see the world through cultural lenses compounded of particular combinations of values; they respond in different ways in accord-

¹³Edmund deS Brunner, "Summary of the Conference," The Contribution of Extension Methods and Techniques Toward the Rehabilitation of War Torn Countries, p. 233.

¹⁴Carl C. Taylor, "The Cultural Approach to Extension," The Contribution of Extension Methods and Techniques Toward the Rehabilitation of War Torn Countries, pp. 194-195.

¹⁵M. L. Wilson, Cultural Approach to Extension, Extension Service Circular 332 (Washington, D. C.: Federal Extension Service, U. S. D. A., 1940), p. 5.

¹⁶Taylor, op. cit., p. 194.

ance with their differing values."¹⁷ The values in turn are closely related to the pattern of each culture. The value system is the core of any culture. According to Wilson, "The value systems are the binding forces of ideas which make meaningful the life's activities, the stresses and the strains."¹⁸ He characterizes them as the key to the variations in modes of living between different types of communities and culture groups.¹⁹

A notable example of how these value systems reflect on the totality of culture is reported by Vogt and Roberts in their study of five communities - Zuni and Navaho Indians, Mormons, Catholic Spanish Americans, and Protestant Americans (homesteaders from Texas) - all subjected to the same environmental conditions.²⁰ These five cultures are characterized by the following systems:

1. Zuni Indians - The Zunis neither feel that they are masters of nature nor that they are the victims. They have developed techniques of cooperating with nature. They live in the present, but look back to the past.
2. Navaho Indians - For Navahos, precaution is the best guide and fear is the dominant emotional theme.
3. Mormons - Mormons view that mastery over nature is desirable. They emphasize the future not so much for the economic de-

¹⁷Evon Z. Vogt and John M. Roberts, "A Study of Values," Scientific American, Vol. 195, No. 1 (July, 1956), p. 25.

¹⁸Wilson, op. cit., p. 6.

¹⁹Ibid., p. 6.

²⁰Vogt and Roberts, op. cit., pp. 25-31.

velopment as for participation in the external progress of the universe in which man himself progresses toward God-hood.

4. Spanish Americans - They have a "normal curve view" of the workings of nature. According to them, one can do little but accept what comes.
5. Texas homesteaders - They manifest a drive for ascendancy over the workings of nature. Nature can be controlled and exploited by man for his own ends and material comfort.²¹

For all five cultures mentioned above, drought was a common problem. But each reacted differently:

Zunis prayed to God, which is in harmony with their culture. They were opposed to artificial rain making.

Navahos also performed ceremonials. However, they were not so certain concerning the result.

Mormons and Texans actively supported the artificial rain making projects. They reduced their livestock and crop acreages.

Spanish Americans did nothing. Their's was a fatalistic response.²²

The above illustration shows that the systems of values may promote and justify radically different modes of behavior.

²¹Ibid., pp. 29-30.

²²Ibid.

Another illustration may be cited from Spicer's²³ case book. In 1946, a new type of hybrid maize was introduced into a Spanish American community in New Mexico. In spite of its successful demonstration based on its subsequent high yield and later adoption as a practice, the practice was abandoned after three years' trial. This seemingly paradoxical event was explained on the basis of the value system of the Spanish American farmers. The cake prepared from this new type of maize produced a flavor which was not liked by the farmers. "Corn quality was more important than corn quantity" in the value system of the Spanish American farmers studied.²⁴

Hence, the value systems of the people cannot be by-passed by the agents of change. This aspect of culture, therefore, plays an important part in the diffusion and adoption of farm practices.

With this basic understanding of the meaning of culture, it might be profitable to see the relation of culture and farm practice adoption.

Culture and Farm Practice Adoption

The process of diffusion and adoption of farm practices is concerned with developing the new out of the old. This may be viewed as the problem of socio-cultural change.²⁵

²³Edward Spicer (Ed.), Human Problems in Technological Change, 1952 (New York: Russel Sage Foundation, 1952).

²⁴Anacleto Apodaca, "Corn and Custom," Human Problems in Technological Change, Edward Spicer (Ed.), pp. 35-39.

²⁵H. F. Lionberger, Sources and Use of Farm and Home Information by Low Income Farmers in Missouri: Agricultural Experiment Station Research Bulletin 472 (Columbia, Missouri: University of Missouri, 1951), p. 32.

Extension workers as agents of change have, therefore, to recognize the very great significance of a people's culture. To be specific, the extension worker needs to understand the following three things:

1. How and by what ways and methods ideas travel from the top to the bottom of the class structure and how the needs and aspirations of the people at the bottom travel to the top and get recognition.
2. The ways of acting and thinking of the local people, who are concerned in the adoption of new farm practices.
3. His subject matter.²⁶

Compatibility of new farming practices with the existing culture also needs careful consideration. "If, for example, farmers receive favorable recognition for planting straight rows of corn, they are less likely to accept contour farming which requires planned crooked rows."²⁷

With this background, a discussion of cultural change itself might be appropriate.

Cultural Change

In simple terms, any change in the ways of people by which they make a living, changes in their social organizations and also modifications in their attitudes, beliefs and their life's sanctioned ways may be called cultural change.

According to Malinowsky,

²⁶Taylor, op. cit., p. 227.

²⁷Lionberger, loc. cit.

Culture change is the process by which the existing order of a society, that is its social, spiritual, and material civilization, is transformed from one type into another. Culture change thus covers the more or less rapid process of modification in the political constitution of a society; in its domestic institutions and its modes of territorial settlement; in its beliefs and systems of knowledge; in its education and law; as well as in its material tools and their use, and the consumption of goods on which its social economy is based. In the widest sense of the term, culture change is a permanent factor of human civilization; it goes on everywhere and at all times. It may be included by factors and forces spontaneously arising within the community, or it may take place through the contact of different cultures.²⁸

Cultural changes may be classified according to origin into two categories:

1. Due to internal factors, which appear to be spontaneous such as industrial revolution, fashion fluctuations and changes which can be attributed to the biological play impulse in its cultural expression.
2. Due to external factors, which are therefore induced in it such as the spread of larger pattern systems or complexes - the alphabet of Islam.²⁹

In simple terms as applied to farming in a community, it may be stated that improvement in the cultivation practices brought about due to local experience belong to the changes of the first type; the improved practices like the introduction of hybrid seed, fertilizers and others may be termed as due to external factors.

²⁸B. Malinowski, The Dynamics of Culture Change (New Haven: Yale University Press, 1945), p. 9.

²⁹Kroeber, op. cit., p. 387.

On account of cultural change, an environment may change with climate; or a people may abandon an old habitat or be driven from it; if their new home is situationally different enough to enforce a change in methods of living, the rest of their old culture may be altered profoundly.³⁰

Culture, in spite of its conservative nature does change over time. "The notion that people tend to resist rather than accept change may be a special idea of our era, formulated by those who are especially conscious of cultural differences or by those who are engaged in trying to bring about change."³¹ The changing attitudes the members of the younger generation show toward the accepted values of their society is another indication for the universality of cultural change.³²

"The rate of change varies enormously from culture to culture and also within the same culture at different periods in its history, but it is improbable that there has ever been a culture which was completely static at any time."³³

Chapin's study of cultural change has formulated the following hypotheses: (1) cultural change is accumulative; (2) cultural change is selectively accumulative, (3) cultural change is wavelike, oscillating,

³⁰Ibid., p. 388.

³¹Spicer, op. cit., p. 18.

³²Herskovits, op. cit., p. 444.

³³Ralph Linton, The Study of Man (New York: D. Appleton Century Crofts, 1937), p. 296.

rythmical or cyclical.³⁴ //

The above understanding of cultural change then should give us a point of departure from which to view conscious efforts to alter culture. If resistance does occur in the process of cultural change, it is to be seen as a symptom of special conditions and not as a common feature; it is only then possible to assess the causes of success and failure through the study of cases in which resistance is observed.³⁵

In other words, extension workers while they are conducting educational programs in order to further the diffusion and adoption of farm practices, are working across certain obstacles, which may be called cultural barriers. Such situations faced by these workers is what may be called "cross cultural." This term refers to the varying backgrounds of the two peoples - the extension workers and their clientele and the fact that ideas and techniques are transferred across from one to the other of these different cultures.

The job faced by extension workers is mainly concerned with bringing about as rapid a spread of improved farm practices as possible. Hence, an understanding of how the cultural traits are transmitted from one setting to the other is therefore essential.

It has been made clear that cultural change is a universal phenomenon. The processes of change over a period of time constitute the

³⁴F. Stuart Chapin, Cultural Change (New York: The Century Company, 1928), pp. 203-204.

³⁵Spicer, op. cit., p. 18.

dynamics of culture. Cultural change cannot be studied as a separate event, for change, by and of itself, is meaningless unless it is projected against a baseline of human behavior as of a given time and nature.³⁶

So before discussing how cultural change takes place, and why some people accept new ideas when others do not, it might be worthwhile to consider the relation of culture with psychology.

Psychological Aspects of Culture and Cultural Change

"Culture is essentially a socio-psychological phenomenon."³⁷ Culture has to exist only through the activities of human beings and hence every cultural form or manifestation of behavior has its psychological aspect.³⁸

Accordingly, in many cases, special knowledge of the psychology of behavior, both individual and group, makes our understanding of social forms and social behavior more complete than would be the case if the cultural factor alone were considered.

According to Kluckhohn, "Study of the psychological factors behind culture is clearly essential to a satisfactory theory of the cultural phenomenon."³⁹

³⁶Herskovits, op. cit., p. 446.

³⁷Ralph Linton, The Study of Man, op. cit., p. 288.

³⁸W. F. Ogburn, Social Change (New York: B. W. Huebsch, Inc., 1922), p. 174.

³⁹Clyde Kluckhohn, "Culture and Behavior," Handbook of Social Psychology, Vol. II, Gardner Lindsay (Ed.) (Cambridge, Massachusetts: Addison-Wesley Publishing Company, Inc., 1954), p. 961.

Kroeber explains the relation between culture and psychology by saying:

It is equally impossible to explain culture in terms of individual psychology and to understand it without some preference to psychology. After all, culture exists only through persons, in or by their behavior.⁴⁰

Though detailed study of the role of psychology in cultural change may not be appropriate here, it might be helpful to discuss the interrelationships of the biological and the cultural fields on the one hand, and the cultural and the psychological fields on the other. Some of the psychological factors to be considered during technological changes will be discussed later. . .

But, first of all, a basic concept of the above relationships is necessary if one is to understand the importance of the psychological factors.

In this connection, it would be worthwhile to know that "psychological facts and process overlap the two natural fields - biological and cultural."⁴¹ Clyde Kluckhohn has summarized the anthropological viewpoints of culture and behavior.⁴² The concept of culture based on the interrelationships of biological, cultural, and psychological fields has been described by Kroeber and Kluckhohn as follows:

⁴⁰Kroeber, op. cit., p. 577.

⁴¹Chapin, op. cit., p. 8.

⁴²Kluckhohn, op. cit., pp. 921-976.

Culture consists of patterns, explicit and implicit, of and for behavior, acquired and transmitted by symbols, constituting the distinctive achievement of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e., historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, on the other as conditioning elements of further action.⁴³

Murdock points out the difference between the actual social behavior as observed in practical life situations and in the regular culture.⁴⁴ The social behavior, though an outcome of the particular culture, is further influenced by the following:

1. The physical and emotional state of the individual
2. The intensity of his drives
3. The particular external circumstances.

Murdock is also of the opinion that ". . . actual or observable behavior is of primary importance from the point of view of cultural change."⁴⁵

Some of the psychological principles to be considered in bringing about technological change may be stated as follows:

1. The advocates of change should recognize that their own behavior, beliefs and attitudes are not universal and axiomatic

⁴³Kroeber and Kluckhohn, op. cit., p. 81.

⁴⁴George Peter Murdock, "How Culture Changes," Man, Culture, and Society, Shapiro (Ed.) (New York: Oxford University Press, 1954), p. 249.

⁴⁵Ibid.

2. The potential acceptors' beliefs and attitudes can not be ignored.
3. Consideration of the change must be looked into from the point of view of those who are exposed to the change
4. No one carpet plan can succeed in bringing about changes in all different aspects of living
5. Acceptance of a change may necessarily result in some degree of instability or disharmony in the individual's life activities, beliefs and/or attitudes.
6. Elimination of frustration belonging to physical environment and biological limitation is not an end in itself as several other sources of frustration, mainly psychological, may still persist.
7. Undesirable consequences result when frustration from those sources still persist and is intensified, such as:
 - a. A return to old forms of behavior, which are now less satisfactory
 - b. A set-back in the changes of behavior toward less mature, more childish reactions and poorer control of emotions and the like.
 - c. The performance of aggressive acts not necessarily connected with the frustrating situation or agent
 - d. A withdrawal psychologically or physically from the frustrating situation.

- e. A reduction of tensions by the prevention of the occurrence of a tension-provoking reaction.⁴⁶

The discussion so far has been concerned with the understanding of the concept of culture and the broad nature of cultural change. Some of the psychological aspects of culture and cultural change were also considered. This, then, would be the proper context for a detailed discussion of how cultural change takes place and why some practices are accepted and some others are rejected.

Determinants of Cultural Change

Cultural change is known to be influenced by any of the following determinants:

1. Increases or decreases in population
2. Changes in the geographical environments
3. Contacts with peoples of differing culture
4. Natural and social catastrophes
5. Accidental discoveries
6. Migrations into new environments
7. Biographical events such as death, or rise to power and others.⁴⁷

For the purposes of this study, the third determinant, namely, "contacts with peoples of differing culture," is of importance.

Before moving further to see how cultural change takes place and why some people accept an idea or practice while some others do not, it is necessary to understand the meaning of a few terms.

⁴⁶ Margaret Mead, op. cit., pp. 286-291.

⁴⁷ Ibid.

Diffusion Defined

Diffusion is a term which is used to connote "the spread of culture from individual to individual or from one society to another."⁴⁸

In the Encyclopedia of Social Sciences, Kroeber defines diffusion

. . . as the process usually but not necessarily gradual, by which elements or systems of culture are spread; by which an invention or a new institution adopted in one place is adopted in neighboring areas and in some cases continues to be adopted in adjacent ones until it may spread over the whole earth.⁴⁹

According to Young,

. . . diffusion refers to the borrowing and accepting of cultural traits or patterns from other social units or individuals.

Young further explains,

Diffusion is usually thought of as a circulation of traits through space. In this sense, it is not to be confused with transmission, which has to do with passing traits and patterns through time from generation to generation. Thus, formal education is not identified with diffusion, but is an important part of transmission.⁵¹

Though diffusion is both of intra-society and inter-society, the latter is the most important as it is believed that ninety per cent of the elements in our culture originated somewhere else.

⁴⁸John L. Gillin and John P. Gillin, Cultural Sociology (New York: Macmillan Company, 1948), p. 179.

⁴⁹A. L. Kroeber, "Diffusionism," Encyclopedia of the Social Sciences, Vol. V, Seligman (Ed.) (New York: The Macmillan Company, 1951), p. 139.

⁵⁰Kimball Young, Sociology (New York: American Book Company, 1949), p. 565.

⁵¹Ibid., p. 565.

The terms "adoption or acceptance" and "diffusion or borrowing" have been used more or less synonymously by Barnett. He defines adoption or acceptance as "the growth in popularity of a new idea within a society of its origin," diffusion or borrowing as "the passage of an idea across certain ethnic boundaries."⁵² However, at the end he makes no distinction between the terms diffusion and acceptance, when he classically states,

Diffusion is acceptance, and acceptance is diffusion, the one term being conventionally appropriate to the description of a collective response to a new idea, the other to an individual reaction. Psychologically, there is no difference.⁵³

At this stage it may be worthwhile to focus our attention on the term "diffusion and adoption of farm practices" to see what the above concept of diffusion means to it. By common usage overtime, the term diffusion of farm information has meant the conduction of educational activities by extension workers and others in order to bring about ameliorative desired changes in the behavior of farm people. The term, "adoption of farm practices," has been viewed to represent the change in functional behavior of the farmers due to the educational activities conducted for disseminating information. In fact, as already pointed out, adoption of practices is always considered as the best available criterion for measuring the success of extension work. Now the anthropological meaning of diffusion refers to the borrowing of cultural traits

⁵²H. G. Barnett, Innovation (New York: McGraw Hill Book Company, 1953), p. 291.

⁵³Ibid.

from one culture by the other. Borrowing is considered as completed when a new cultural trait, idea or practice is accepted by a cultural group as one of its own. In light of the foregoing, it is seen that the anthropological term "diffusion" encompasses both the diffusion of farm information and the adoption of farm practices. So mere dissemination of farm information about a practice is not really complete diffusion at all. Under the above connotation, that practice must also be adopted by the farm people. Accepting this meaning would be to equate the term diffusion with education. However, though education must result in production of changes in the behavior of people, it may not always end in the adoption of a practice. It is, therefore, difficult to have a clear concept of diffusion unless we follow a via media interpretation. The confusion can best be eliminated by considering the whole process of diffusion as consisting of various stages, each such stage possibly requiring an educational endeavor complete in itself. This would then also explain the dissemination of information as a part of the whole process of diffusion, the adoption of practices being considered as the last phase in that process.

A clear understanding of these terms prepares the way for further discussion of the stages involved in the total process of cultural change.

Stages in the Process of Cultural Change

The process of cultural change, as described by various cultural anthropologists, involves four stages: (1) innovation stage, (2) social

acceptance, (3) selective elimination, and (4) integration.⁵⁴

Innovation stage. Cultural change involves the introduction of an innovation - a new trait, idea or a practice. This introduction results in the formation of a new habit, by a single individual or group, which is subsequently accepted or learned by other members of society.

Innovations have been classified into four categories or kinds:

1. Variation - slight modification of pre-existing habitual behavior.
2. Invention - transfer of elements of habitual behavior or their combination into new syntheses
3. Tentation or serendipity - accidental discoveries
4. Cultural borrowing or diffusion - in this case, the innovator is not the originator of a new habit, but its introducer.⁵⁵

Of the four forms of innovation discussed above, cultural (culture here interpreted to include individual acceptance) borrowing or diffusion is by far the most important.

The first individuals in a society to adopt new practices are known as innovators.

Social acceptance. If a new idea or innovation is only practiced by innovators, it is an individual habit and not an element of culture.

⁵⁴Ralph Linton, The Tree of Culture (New York: Alfred A. Knopf, 1955), p. 42; Murdock, op. cit., pp. 250-260.

⁵⁵Murdock, op. cit., p. 250.

In order to become a part of the culture, the innovation must be adopted by other members of the society. The following are important in social acceptance.

1. The adoption of a new habit by a small number of individuals sets the pace for social acceptance
2. The different stages in sound acceptance are characterized by degrees of cultural saturation
3. Social acceptance may be thought of as internal or vertical diffusion to differentiate it from cultural borrowing which is termed external horizontal diffusion
4. The prestige of the innovator and his relations with the group considerably influence the rate of social acceptance.

Selective elimination. Every innovation after its social acceptance has to compete for survival. The new practice will continue as long as it continues to be more rewarding than any alternative. When it ceases to give comparable satisfaction, it loses its importance and eventually may be discarded or modified.

Integration. This is the final step in the process of cultural change. The accepted innovations not only compete for survival, but they need to become progressively adapted to one another in order to become a part of an integrated whole.⁵⁶

Ogburn has defined cultural lag as the period of time which must elapse between the acceptance of a new idea and the completion of the integrative readjustments which follow in its train.

⁵⁶Ibid.

The consideration of the above stages involved in the process of cultural change is a type of social process. All individuals who make up the group do not react in the same way to the process of cultural change. Likewise, some innovations are accepted more readily than others; a few may not be accepted. An understanding of this phenomenon of acceptance or rejection may be necessary.

Acceptance or Rejection

Successful introduction of new practices in a particular cultural area and their subsequent adoption by the people are recognized as the criteria for effective extension work. However, this process is rather complex and is subjected to the operation of various factors involved. As a result, there are differences observed in the number of practices adopted and their rates of adoption from one area to the other. Even in the same area people differ in their rates of adoption of practices. Similarly, some practices are adopted more rapidly than others. In some other cases, new practices are not accepted. Likewise, all extension workers are not equally efficient in encouraging the people to adopt new practices.

This phenomenon of acceptance or rejection, then, is a matter of concern for extension workers.

There are certain generally accepted principles which influence the acceptance or rejection of a new practice or an idea. Time and again, these are being explained by cultural anthropologists.

A rather comprehensive discussion of these principles might benefit
40 { for an understanding of the research findings summarized in the next 410

no (chapter more clearly.)

no The main question to be answered in this discussion is, "Why do certain cultural systems and values multiply, move and spread successfully while the others do not spread at all or spread little?"⁵⁷

no This subject has received the attention of cultural anthropologists since the beginning of that science.

no Wallis wrote as early as 1926 that culture context as well as the nature of the new trait determine the ease with which diffusion takes place.⁵⁸ He also noted that "The culture to which a trait is taken must be ready to accept it. . ."⁵⁹

! Some of the recognized principles of diffusion as stated by Linton (1937) are:

1. Innovations will be accepted first by the people who are close to their points of origin and then by those who are more remote provided all other conditions are equal
2. Contact and time are essential for the diffusion of an innovation
3. Diffusion of a modification of an innovation will be slow as compared to the acceptance of the innovation itself
4. Diffusion requires both a donor and a receiver.

⁵⁷P. A. Sorokin, Social and Cultural Mobility (Glencoe, Illinois; The Free Press, 1959), p. 620.

⁵⁸Wilson D. Wallis, An Introduction to Anthropology (New York; Harper and Brothers, 1926), p. 459.

⁵⁹Ibid.

5. Inherent communicability of the cultural element itself exercises a strong influence on diffusion.
6. Generally speaking, a society exercises free will in accepting or rejecting an innovation.
7. Utility and compatibility of the new cultural element are important determinants of its acceptance or rejection.
8. Particular interest which dominates the life of the receiving group also plays a vital role in diffusion.
9. The prestige of the individuals under whose auspices the innovation is presented to the society also counts in the diffusion of that innovation.
10. Sometimes, faddism may be a factor for the success of diffusion.⁶⁰

In recent years, many of the cultural anthropologists like Barnett, Gillin, Herskovits, Keesing, and Sorokin have contributed substantially to the development of a clear concept of the phenomenon of acceptance or rejection of innovations.⁶¹ Of these, Barnett's discussion has been an exhaustive one and is recognized by many of the cultural anthropologists as an authoritative one.⁶²

⁶⁰Ralph Linton, The Study of Man, pp. 328-345.

⁶¹Barnett, op. cit., pp. 293-410; John Gillin, The Ways of Men (New York: Appleton Century Crofts, 1948), pp. 543-544; Herskovits, op. cit., p. 447; Felix M. Keesing, Cultural Anthropology (New York: Rinehart and Company, 1958), p. 417; Sorokin, op. cit., pp. 579-580.

⁶²Herskovits, loc. cit.; Keesing, loc. cit.

A brief discussion of the characteristics of situations, persons, and things related to the phenomenon of acceptance or rejection has been presented below. This discussion is mostly based on the writings of Barnett.⁶³

The phenomenon of acceptance or rejection depends primarily on the following four determinants:

- A. Advocates of change
- B. Advocate assets
- C. Novelty characteristics
- D. Acceptors or rejectors

A. Advocates of change. Innovations require an advocate of some description if they are to make any social impression. The relation existing between the innovations and advocates can be discussed under the following headings:

- (1) Innovations without advocates
- (2) Professional advocates
- (3) Outgroup advocates
- (4) Conservative advocates

(1) Innovations without advocates. There are many innovations which have no advocates. Innovations which are held to be mistakes or misguided ventures lack advocates. Sometimes a novelty, though a good one, will not have an advocate. This may be due to the lack of motivation on the part of the learner due to many reasons. The circumstances of

⁶³Barnett, loc. cit.

origin of certain innovations make them individualized prerogatives. In this case they are not intended to be popularized because of their marks of distinction.

(2) Professional advocates. In the past, the advocates who were both inventors as well as advocates of change were common. However, nowadays most professional inventors relinquish their advocacy to professional surrogates or representatives. This is mainly because advocating change does require special creative efforts, and hence, is best suited to specialists in this field. Professional advocates need to be experts in persuasion. They should try to stimulate an atmosphere of acceptance; needs have to be created or identified if the innovation is to be sold.

(3) Outgroup advocates. These are the people who have accepted an innovation but represent group other than the one, where an innovation is to be diffused. Alien acceptors, or the people in a group who have accepted some innovations coming from outside, are also referred to as outgroup advocates. By adopting innovations, these people become advocates of the same and their influence may be strong. The outgroup advocates by accepting outside innovations, participate in the credit or discredit that is assigned to the particular innovation involved. This is often the incentive or the deterrent for accepting or rejecting those innovations by the group. Outgroup advocates are selective; they choose what they believe to be the best innovations.

(4) Conservative advocates. These are the people who advocate the continuance of the existing practices. Conservative advocates are

uncomfortable with novelties and are intent, not only on the preservation of their existing culture and values, but also upon its extension to and its acceptance by others. An awareness of the existence of such conservative advocates is essential in the implementation of change.⁶⁴

B. Advocate Assets. There are definable controls influencing the acceptance of innovations. The personal and social characteristics of an advocate of change form an important set of such controls. A listing of such assets would include:

- (1) Prestige
- (2) Personality
- (3) Personal relations
- (4) Majority affiliation

(1) Prestige. Though the prestige of an advocate of a new idea is supposed to be a decisive factor in its acceptance or not, this should be accepted with reservations as prestige is, after all, a matter of interpersonal relations. Close friends, relations, and others are more effective in advocating change than are those who have been held in high esteem by reason of birth, selection, or accident.

(2) Personality. An appealing personality of an advocate of change is a major asset in achieving the acceptance of a new practice. If the advocate's manner, bearing, or attitude creates antagonism, people are not likely to be influenced by a new idea, regardless of its merits. A good half of salesmanship, therefore, lies simply in being an engaging person.

⁶⁴Ibid., pp. 291-312.

(3) Personal relations. The personal relations an advocate of change has with potential acceptors is important in making his mission an effective one. People usually accept a new practice if it is advocated by a friend and are likely to discard it if it is proposed by a stranger.

If personal relations between relatives are more intimate, kinsmen are effective advocates of change.

At times, a trusted, idolized, or feared leader may sell ideas in an effective way.

(4) Majority affiliation. An advocate can benefit by the support of a majority. This characteristic is a great asset to an advocate of change, as many people accept a new idea because a majority has accepted it.⁶⁵

What to look for in the introduction of new ideas or practices may be old to an advocate but not so to potential acceptors. This, then, leads us to a discussion of the characteristics of new practices and ideas.

C. Characteristics of new practices and ideas.* An advocate of change is responsible for the introduction of new practices and ideas to a group. The exact nature of the change is of major importance from the point of view of a potential acceptor or acceptors in the group. Features of the new practice or idea which describe the exact nature of the change

⁶⁵Ibid., pp. 313-328.

*The term "new practices and ideas" has been used here as synonymous with the word "novelty," as used by Barnett to make the discussion more meaningful in the context of this thesis.

taking place are referred to as characteristics of new practices or ideas. They, however, never function in isolation, although they may be critical factors which interact with and exert influence on others.

Two categories of characteristics of new practices or ideas may be identified - Intrinsic and Extrinsic.

(1) Intrinsic characteristics. Intrinsic characteristics are those features which are inherent in a given new practice or idea. They need to be understood by a potential acceptor since they point out the importance of the new practice or idea in relation to this background; that is, they help him identify the new practice or idea as something related to an already existing practice or idea. The intrinsic characteristics are discussed under the following heads:

- (a) Innovation in acceptance
- (b) Meaning
- (c) Incongruence
- (d) Independence
- (e) Structuralization.

(a) Innovation in acceptance. This characteristic is related to the concept of compatibility of a new practice or idea. A new practice or idea is adaptable or acceptable when it can be related with something known by a potential acceptor. Unknown or unrelated abstractions will not help in making a novelty easily acceptable. The following illustration might help in making this point more clear.

Suppose in a community no improved variety had been recommended so far on any crop. A county agent, new to that community, now intends

to introduce a recommended variety of Tobacco A. As both the idea of an improved variety and the county agent are new to the community, it will take more for the potential acceptors to identify the recommended variety as something familiar. Hence more time is needed for the adoption of the recommended variety.

If in the above case, the extension agent were familiar to the community, and also if the people of the community had previously adopted another recommended variety of tobacco, the introduction of the variety A would have been more easily accepted.

(b) Meaning. The new practice or idea, if it is to be meaningful to a potential acceptor, must be related to his past experiences. It is a kind of orientation, with reference to the background of the individual, that is more or less satisfying.

To illustrate, a labor saving machine may not be meaningful to a farmer who has no labor problem.

(c) Incongruence. Incongruence may be defined as the feature of a new practice or idea not fitting into the present value system of the culture of a potential acceptor. So, the new practice or idea should not only be acceptable and meaningful, but should also be in harmony with the value system of the potential acceptor.

A simple example of incongruence might be the opposition of a Hindu farmer to raising beef cattle.

(d) Independence. Sometimes, the objections arising out of incongruities are overcome by treating the innovation as an independent entity. Ordinarily, a Hindu farmer may not like to take up poultry

farming in view of incongruities arising out of his religious background. However, he might start the same enterprise by employing a Muslim laborer. In the latter case, as the Muslim laborer can take care of the enterprise, the innovation is treated independently and hence could be accepted.

(e) Structuralization. Structuralization is the process of finding how a new idea or practice fits into the pattern of pre-existing practices or ideas. The relationship or structure among the pre-existing practices or ideas may be more rigid in some cases and more flexible in others. Structure type not only influences how a new practice will be integrated into the receiving culture, but also tells whether it will be accepted or not. The following illustrations might help in further clarification.

A farmer plants his corn with a planter which is designed for only one spacing. The extension service recommends a greater number of plants per acre to get more yield. This can only be done by reducing corn spacing. So, unless the farmer purchases a new corn planter, he will not be able to reduce the spacing. Thus, the recommended practice may not be adopted on account of its more rigid structuralization.

An adjustable type of corn planter would have made the system more flexible.

(2) Extrinsic characteristics of new practices or ideas. Extrinsic characteristics or values, are features which deal with the feasibility of adopting a new practice or idea provided that the practice or idea itself is acceptable. Such characteristics are discussed under eight categories:

- (a) Incompatibility
- (b) Efficiency
- (c) Cost
- (d) Advantage
- (e) Pleasure
- (f) Mastery
- (g) Penalty
- (h) Repercussion.

(a) Incompatibility. This characteristic refers to the newness of a recommended practice or idea. Although a recommended practice or idea needs to be compatible or acceptable based on its intrinsic characteristics, it is equally essential that there must be something by which to judge its desirability.

A new model of a tractor on account of its attractive shape may be more easily acceptable, though it has no other specialties.

(b) Efficiency. Effectiveness of a new practice is one of the main considerations as potential acceptors will not take any chances with apparently ineffective new practices, especially when personal security or welfare is involved.

(c) Cost. Many times, though a new practice is acceptable to an individual, its cost may be prohibitive. This has been an important factor hindering the acceptance of a number of new practices. Introduction of some of the herbicides is difficult at the present time due to their prohibitive cost.

(d) Advantage. The new practices are easy to introduce if they are rated superior to existing practices in saving time, labor, money, space, or any other valued resources.

(e) Pleasure. It is needless to state that a novelty which is enjoyable is more appealing than one which is not. An egg plant variety with thornless fruits is a greater pleasure to harvest than the one with thorns on the fruit. Riding implements are more enjoyable when compared to walking types.

(f) Mastery. Simple ideas or practices which do not require concentrated and continuous efforts to master them are more readily acceptable than complex ones.

(g) Penalty. Penalty attachments hinder the acceptance of new ideas or practices. Likewise, unfavorable public opinion in the form of ridicule and blame has the same penalizing effect on the adoption of a novelty.

(h) Repercussions. If the adoption of a new practice or idea results in any undesirable impact on other linked features of the culture system, it is not likely to be favored, though it can be accepted otherwise.⁶⁶

D. Acceptors and rejectors. The discussion so far was concerned with knowing why a new practice or its advocate has an appeal. The last part of the discussion on the phenomenon of acceptance or rejection is to find out why a new idea or practice appeals more to one person than

⁶⁶Ibid., pp. 329-377.

to another. In other words, the purpose is to see why people react differently to a particular novelty advocated by the same person. Three basic hypotheses put forth in this connection need careful consideration to understand the generalizations made.

1. A new practice or idea will not be accepted unless it satisfies the acceptor's want better than a means which is already available.
2. Lack of satisfaction is a relative term, varying with individuals and is dependent on their past experience, tastes, and preferences.
3. Some individuals may show a diffuse attitude of apathy or dissatisfaction and may be termed as marginal individuals.

From the above discussion, it should be clear that except for a few marginal individuals, no one is wholly or persistently an acceptor or a rejector. He is simply more or less so than some one else might be, and that too with reference to a specific idea. All the same, four broad categories of acceptors may be recognized:

- (1) The Dissident
- (2) The Indifferent
- (3) The Disaffected
- (4) The Resentful.

A short description of the people belonging to these categories might be helpful.

(1) The Dissident. Acceptors belonging to this group consistently refuse to identify themselves with some of the cultural traits

of their group. The more courageous and independent of these may openly revolt and refuse to participate in the customs. Such dissenters when they have no alternatives are pre-eminently suited to be acceptors of change.

(2) The Indifferent. Unlike dissidents, these people do not dislike old ideas; however, they are not enthusiasts. They do not get complete satisfaction from the old ideas and on account of this, are liable to accept new ones easily. Young people as compared to the old, are more likely to fall in this group. The one reason is that they have had less time to grow in understanding and to be conditioned by the old culture. The age levels would differ with the kind of novelty, but the reality of an age differential in acceptance would remain.

(3) The Disaffected. These people have acquired distaste for certain aspects of the culture after being active participants some time before. This change-over may be due to some personalized event; and as such, if something new to satisfy them is offered, they are ready to accept them.

(4) The Resentful. These are the have-nots and not the care-nots. The resentful are denied an opportunity to enjoy certain things which are esteemed the most, while some others are enjoying the same. The resentful envy those people and are always seeking opportunity to accept something new so as to equalize opportunities.

Though the characterization of acceptors places emphasis on discontent, this may not always suggest that only those people with a background of enstrangement or unrest will accept innovations. Although

they are pre-eminently and predominately inclined for the change, this condition should not be taken as a pre-requisite for acceptance. Even the satisfied people may become dissatisfied and this dissatisfaction may have nothing to do with personal background, but be due rather to novelty or advocate characteristics.⁶⁷

The phenomenon of acceptance or rejection is thus influenced by all the three components of the acceptance situation, namely the characteristics of situations, persons and things involved in the acceptance of new ideas or practices. All these three have to be considered at the same time for determining whether a new practice or idea could be accepted or not, because no one of them functions independently. These, however, have different potentials depending on the particular case under question. This has been aptly summarized by Barnett in the following terms:

A persuasive advocate can sell a man a new gadget even though the latter has been quite happy with the one he has; or a novelty, by its superior performance may sell itself to a man, who until then has found no reason to complain about the thing that it might displace. Oppositely, the unsatisfied individual is seldom if ever an absolutely indiscriminate acceptor. He may be more or less, but rarely can it be said that malcontent will accept anything from any one under any circumstances. He too is influenced by the auspices and values as he sees them.⁶⁸

⁶⁷Ibid., pp. 378-409.

⁶⁸Ibid., p. 410.

II. SUMMARY

Extension workers as agents of change need to recognize that any change of ideas or practices on the part of the people cannot be viewed apart from changes in their culture itself. Hence, it may be said that understanding the culture of the people and adjusting the extension program in line with their culture are prerequisites to the success of extension work.

Culture includes all the artificial creations of man - material and non-material, constructive and destructive. Culture encompasses the following three aspects of life:

1. The habitual and systematized ways by which men make their living.
2. The social institutions which serve as channels to achieve and perpetuate their purposes and wishes.
3. The attitudes, beliefs and norms of the people.

The value systems of each culture influence its pattern and are also responsible for the people's reaction to any new or revised value systems.

The term cultural change, then, refers to those changes in the ways by which people make a living, changes in their social institutions, and also modifications made in their attitudes, beliefs and norms. Extension's responsibility is that of aiding in the dissemination of new research-tested information and to encourage its application. This is an educational responsibility aimed at bringing about desired cultural changes.

There is no known culture which was ever completely static at a given time. So cultural changes are natural in the sense that culture does change over time. The important facet of the problem, however, is the rate at which the culture changes.

Extension workers are interested in bringing about as rapid an ameliorative change as possible in the culture by educating the people.

To be effective in bringing about such changes, extension workers must possess an understanding of cultural change and have a knowledge of the psychology of behavior of people, both as individuals and groups. There is a close interrelationship between the biological and cultural fields and also between the cultural and psychological ones. The actual or overt behavior of people is of primary importance from the point of view of measuring cultural change. Hence there is a need for considering the psychological principles which may bring about cultural change.

Of the various determinants of cultural change, contacts with people of differing culture is perhaps the most important, especially as it relates to the diffusion and adoption of farm practices.

"Diffusion" is a term used to connote the spread of culture from individual to individual or from one society to another. Diffusion occurs both intrasociety and intersociety. Diffusion, when applied to farm practice adoption, refers to the process by which cultural traits are spread within or between social systems. Though diffusion is synonymous with adoption as far as the individual is concerned, it may not be quite logical to also equate it with the term education. The whole process of diffusion, consisting of certain generally accepted stages, may involve

various educational endeavors in each stage. Such endeavors may be complete within themselves.

The over-all process of cultural change may be said to involve four stages:

1. Innovation
2. Social acceptance
3. Selective elimination
4. Integration

Of all forms of innovation, it is generally recognized that diffusion is the most common and important. Cultural lag refers to the period of time which must elapse between the acceptance of an innovation and the complete adoption of the same by the entire group with suitable modifications and/or adjustments. Some people accept innovations more readily than others. This phenomenon of acceptance or rejection needs to be understood properly by all concerned with the cultural change.

The characteristics of situations, persons and things related to the acceptance of new ideas are important items one necessarily should consider in the process of acceptance or rejection.

Innovations generally need an advocate or advocates if they are to make any social impression which may lead to cultural change. The capabilities of the particular advocate of change strongly influence the degree to which specific innovations make such social impressions in a given period of time. Acceptance rate of an idea or a practice is, then, affected by the various personal and social attributes of the advocates themselves. Some of these attributes are (1) prestige, (2) personality, (3) personal relations and (4) majority affiliations.

There are also intrinsic and extrinsic characteristics of the new ideas or practices which influence the acceptance or rejection of a practice or idea by individual and groups. The intrinsic values include (1) Compatibility; (2) Meaning; (3) Incongruence; (4) Independence and (5) Structuralization. The extrinsic values include (1) Incompatibility; (2) Efficiency; (3) Cost; (4) Advantage; (5) Pleasure; (6) Mastery; (7) Penalty and (8) Repercussion.

A new idea or practice has also to satisfy the acceptor's want better than the old one. Individuals vary in the satisfaction they receive as it is dependent on personal factors such as tastes and preferences. Four categories of acceptors and rejectors can be made in relation to this characteristic:

1. The "dissidents" or the revolvers who have not identified themselves with certain of the cultural traits of their group
2. The "indifferent" or those who are not very enthusiastic about some of the existing cultural values
3. The "disaffected," or those who have acquired distastes for certain values after identifying themselves with the same earlier
4. The "resentful," or those who are deprived of the opportunities to enjoy certain things and hence are eager to find new ways of equalizing their opportunities with those who already have them.

The characteristics of situations, persons and things involved in the acceptance of new ideas are thus important considerations. However,

these do not function independently and hence need to be considered at the same time to find out the probability of acceptance or rejection of a new practice or idea.

The understanding of the concept discussed in the present chapter provides a basis or vantage point for all who are concerned with changing the culture of people. Extension workers would benefit by keeping the principles discussed in mind. With the presentation of the foregoing fundamental concept, the stage has been set to review the results of research previously conducted in the diffusion and adoption of farm practices. As a prelude to the same, a discussion of the history of such research work should serve as a useful starting point.

CHAPTER III

A SHORT HISTORY OF RESEARCH ON DIFFUSION AND ADOPTION OF NEW FARM PRACTICES

I. A BRIEF HISTORICAL REVIEW

Introductory Statement

As already pointed out in Chapter II, the concept of diffusion as viewed for the purpose of this study would relate to the intra-societal and intra-community spread and acceptance of cultural traits. The research work reported in this chapter is all concerned with this type of diffusion and mostly carried out by rural sociologists and extension workers.

Some features of the historical aspect of the sociological research on the diffusion and adoption of new farm practices have been previously discussed by (1) Sub-Committee on the Diffusion and Adoption of Farm Practices, the Rural Sociological Society,¹ (2) H. F. Lionberger,² and

¹Sub-Committee on the Diffusion and Adoption of Farm Practices, the Rural Sociological Society, Sociological Research on the Diffusion and Adoption of New Farm Practices, Kentucky Agricultural Experiment Station Report RS-2, Lexington, June 1952, mimeo.

²H. F. Lionberger, "The Diffusion of Farm and Home Information as an Area of Sociological Research," Rural Sociology, XVII (June 1952), pp. 132-143; Idem, "Present Status and Prospects of Research Relating to the Diffusion and Use of New Farm Practices" (Paper read at the Seminar for Co-operators in the TVA Agricultural Economics Research Activities, Knoxville, Tennessee, March 26, 1958, mimeo).

(3) R. M. Dimit.³ These references have provided useful guide line for the organization of this chapter and also as sources of much of the information.

Wilson's Studies, 1920-1930

The history of the sociological research on diffusion and adoption of new farm practices dates back to the 1920's. M. C. Wilson of the Extension Service, U. S. D. A. pioneered this type of research work. The early investigators conducted by Wilson and Associates are popularly known as "Farm Practice Adoption Studies." Nearly fifty such studies were conducted in cooperation with the state and county extension personnel during the period 1920 through 1930. Smith and Wilson⁴ summarized a large number of these studies in 1930. Wilson and Gallup⁵ have recently summarized the findings of these investigations under the heading, "Factors Influencing Adoption of Practices." In all such adoption investigations, the farm operators and their wives were questioned concerning the practices they had adopted during a specified period of time. This

³R. M. Dimit, "Diffusion and Adoption of Approved Farm Practices in 11 Counties in Southwest Virginia" (Unpublished Ph.D. thesis, Iowa State College, Ames, Iowa, 1954), pp. 4-28.

⁴C. B. Smith and M. C. Wilson, The Agricultural Extension System of the United States (New York: John Wiley and Sons, Inc., 1938), pp. 337-348.

⁵M. C. Wilson and Gladys Gallup, Extension Teaching Methods and Other Factors that Influence Adoption of Agricultural and Home Economic Practices, Extension Service Circular 495 (Washington, D. C.: Federal Extension Service, U. S. D. A., 1955), pp. 22-25.

adoption was found to be correlated with the socio-economic characteristics of the families studied, which included (1) farm ownership, (2) distance of the farm from the extension office, (3) farmers' educational level, (4) age, (5) participation in extension activities, and (6) contact with the extension worker. These studies did provide useful information to the extension workers who are concerned with the problem of facilitating the diffusion and adoption of improved farm practices.

In 1927, and later, another series of investigations conducted by M. C. Wilson and Associates were reported, which attempted to relate the adoption of practices to communication of information.⁶ The results of these studies are limited since the influences, other than Extension Service, were not considered and also since the sources of information used by farmers were not compared with their socio-economic characteristics.⁷

These results showed that the method of distribution of bulletins had little bearing on the use subsequently made of them. Whether or not the farmer had received more than a common school education was an important factor in the use of bulletins.

⁶M. C. Wilson, Influence of Bulletins, News Stories and Circular Letters Upon Farm Practices with Particular Reference to Methods of Bulletin Distribution, Extension Service Circular 57 (Washington, D. C.: U. S. D. A. Federal Extension Service, 1927), p. 22; Idem, Distribution of Bulletins and Their Use by Farmers, Extension Service Circular 78 (Washington, D. C.: U. S. D. A., Federal Extension Service, 1928), pp. 15-16.

⁷Sub-Committee on the Diffusion and Adoption of Farm Practices, op. cit., p. 10.

Period of Research Lag, 1930-1940

Sinn's study, published by the U. S. D. A. in 1931, was concerned with the effectiveness of circular letters in extension work; this study indicated that the circular letter may be an efficient means of disseminating information to large numbers of people as to influencing them to adopt improved practices recommended.⁸

Another investigation was conducted by Wilson and Trotter in 1933, concerning the effectiveness of a program in legume extension teaching.⁹ This study demonstrated the cumulative influence of extension effort and also hinted at the need for the study of the diffusion process.

The attention of rural sociologists did not become specifically focused on diffusion research until the late 1930's.

The effect of cultural considerations on the diffusion of new farm practices was studied by Kollmorgen and was published in 1940.¹⁰ This investigation compared the cultural characteristics of a group of German-Swiss farmers with those of a group of non-German Swiss farmers in relation to the diffusion and adoption of farm practices.

⁸Ivan M. Sinn, Circular Letters, An Analysis of Their Use by Extension Workers, Extension Service Circular 151 (Washington, D. C.: U. S. D. A. Federal Extension Service, 1931), p. 17.

⁹M. C. Wilson and Ide P. Trotter, Results of Legume Extension in Three South East Missouri Counties Representing Three Stages of Development of a State Wide Legume Program, Extension Service Circular 188 (Washington, D. C.: U. S. D. A. Federal Extension Service, 1933), pp. 40-41.

¹⁰Walter M. Kollmorgen, The German Swiss in Franklin County, Tennessee, U. S. D. A., L. E. 7, 1940 (Processed).

Work Done by Hoffer and Associates, 1940-1946

Hoffer and Gibson of Michigan carried out investigations to study the influence of selected social and cultural factors on the adoption of farm practices.¹¹ This study was reported in 1941. A number of social and economic conditions related to diffusion and adoption of farm practices were isolated by means of this work. Each factor influenced the responsiveness to agricultural extension either positively or negatively depending upon its nature and the extent to which it was present. The factors studied were (1) community organizations and morale, (2) organization and morale among farmers, (3) socio-economic conditions, (4) leadership, (5) civil boundaries within the community area and (6) community conflicts.

An attempt to study diffusion of farm information in relation to low income farmers was made by Wilson in 1941.¹² By analyzing the results of some previous studies relating to this area, he tried to determine the extent to which the low income farmers were being benefitted by extension teaching.

Factors such as farm tenancy rates, farm income, prevalence of hired labor, and differential relief rates were used in mapping areas, where low income farms were concentrated.

¹¹C. R. Hoffer and D. L. Gibson, The Community Situation as it Affects Agricultural Extension Work, Agricultural Experiment Station Special Bulletin 312 (E. Lansing: Michigan State College, 1941), p. 34.

¹²M. C. Wilson, How and to What Extent is the Extension Service Reaching Low Income Farm Families, Extension Service Circular 375 (Washington, D. C.: U. S. D. A. Federal Extension Service, 1941), pp. 3-6.

Witt's analysis of the economic problems of low income farmers in Iowa in 1942 indicated some particular aspects of the diffusion of farm practices.¹³ This study revealed that low income farmers did not follow as many desirable practices as high income farmers. County agents had virtually no contact with these low income farmers. His findings simply verified the results of others in this area.

Hoffer's first study on the diffusion of single practices was published in 1942, which reported the adoption of new farm practices by farmers of Dutch descent in Michigan.¹⁴ This indicated that the rate and extent of acceptance of approved practices constituted an indication of cultural change regarding agriculture among celery growers. Increased number of contacts favorable to scientific agriculture brought a more rapid and general adoption of approved practices because such contacts had produced the necessary changes or adjustments in their culture.

By reporting their study in 1943 on the diffusion of hybrid seed corn in two Iowa communities, Ryan and Gross¹⁵ published the first research dealing with the diffusion process in the adoption of farm practices. They investigated the time pattern of dissemination of information and adoption

¹³Lawrence W. Witt, Economic Problems of Low Income Farmers in Iowa, Research Bulletin 307, Agricultural Experiment Station (Ames, Iowa: Iowa State College of Agriculture and Mechanical Arts, 1942), pp. 243-246.

¹⁴C. R. Hoffer, Acceptance of Approved Farming Practices Among Farmers of Dutch Descent, Agricultural Experiment Station Special Bulletin 316 (East Lansing: Michigan State College, 1942), p. 34.

¹⁵Bryce Ryan and Neal Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," Rural Sociology, VIII (March 1943), pp. 15-24.

of practice and the different agencies involved in the initial stages of the spread of knowledge and the sources of influence toward adoption. It was evident that the acceptance sequence of hybrid seed in the communities studied followed a bell shaped curve. Commercial channels were most important as original sources of knowledge.

In another study published in 1944, Hoffer investigated the relationship between extension participation and extension effort.¹⁶ Underlying this purpose was the assumption that participation in extension work is an indicator of acceptance of farm practices. A positive association was observed between the participation on an individual basis and that in groups. The effort, an agent put forth to obtain participation, though important, was not the determining factor.

Socio-economic factors, like nativity of the farm population, percentage of farm ownership, and percentage of farmers doing business with or through co-op organizations were positively related to participation.

As a low correlation was found between effort and participation, Hoffer attributed the low correlation to a multiplicity of factors operating to condition and limit participation. Even among socio-economic factors, a few mentioned above were positively correlated with participation while some others like the percentage of first class land and ownership of an automobile did not show positive correlation.

¹⁶C. R. Hoffer, Selected Social Factors Affecting Participation of Farmers in Agricultural Extension Work, Agricultural Experiment Station Special Bulletin 331 (East Lansing: Michigan State College, 1944), pp. 36-37.

The final Hoffer study in this series was reported in 1946.¹⁷

This investigation attempted to find out (1) where farmers get information about farming, (2) whether they could identify potential community leaders, (3) what opinions they have toward the Extension Service, and other programs designed to aid farmers, and (4) which social groups assist in promoting the objectives of the Extension Service. The results indicated that the farmers used many sources for getting information about new practices besides the Extension Service, especially the neighborhood groups and other special interest groups. There was an indication that the effectiveness of the Extension Service could be increased if its programs were associated with the activities of groups and organizations already present.

In the same year (1946), an unpublished report about the role of human factors in relation to soil conservation practice adoption was written by Coleman.¹⁸ This report was based on case studies of 110 farmers who had adopted some conservation practices. The high practice adoption was traced to income motivation manifested as a desire to increase production, income and/or level of living. The final decision to try a new practice was made after the farmers had seen it on the farm of a respected neighbor or relative and had talked to him about it. In practically all

¹⁷Idem, Social Organization in Relation to Extension Service in Eaton County, Michigan, Agricultural Experiment Station Special Bulletin 338 (East Lansing: Michigan State College, 1946), pp. 30-31.

¹⁸Lee Coleman, "Some Aspects of Human Relations in Soil Conservation" (Washington, D. C.: Division of Farm Population and Rural Life, U. S. D. A. November 1946), mimeo, as cited by Dimit, op. cit., p. 9.

cases, reasons for failing to adopt practices were based on economic considerations, particularly resource limitations.

More scientific and comprehensive studies conducted by the Federal Extension Service, U. S. D. A. in cooperation with the Bureau of Agricultural Economics were reported in 1947-48.¹⁹ These studies have resulted in better understanding of the conditions of use and acceptance of farm practices and also of many cultural and psychological factors influencing the diffusion process.²⁰

The period since 1948 has seen the rapid development of research in this general area of diffusion and adoption of new farm practices, and also has brought a large number of new workers into the field.

Studies of Diffusion Process, 1948-1950

Investigations reported by Ryan and Gross between 1948-1950, contributed substantially to the definition of an adoption-time sequence pattern and a description of the role of various reference groups and

¹⁹The Extension Service in Vermont, Part I, Farmers and the Extension Service (Washington, D. C.: U. S. D. A., Extension Service in Co-operation with Bureau of Agricultural Economics, July, 1947), pp. 2-3; Niederfrank, Collings and Hill, The Lubbock County Study: An Evaluation of the Effectiveness of Extension Work in Lubbock County, Texas, 1947 (College Station, Texas: Agricultural and Mechanical College of Texas and U. S. D. A. and the Extension Service, 1948).

²⁰H. F. Lionberger, The Diffusion of Farm and Home Information, op. cit., pp. 133-134.

their influence in different phases of the diffusion process.²¹

Investigations by Lionberger and Wilkening, 1949-1952

Lionberger started research in a new area, which was earlier suggested by Wilson, and reported the results between 1949-1951.²² These studies were directed to specifically investigate the sources of farm and home information used by low income farmers, residing in the neighborhood of more prosperous farmers, who (the latter) had adopted a number of new farm practices.

These studies have brought out differences in the effectiveness of personal sources of information as compared to the impersonal sources and have supported the hypothesis that socio-economic status is related to differential utilization of diffusion media.

²¹Bryce Ryan, "A Study of Technological Diffusion," Rural Sociology, XIII (September 1948), pp. 273-285; Neal Gross, "The Differential Characteristics of Acceptors and Non-acceptors of an Approved Technological Practice," Rural Sociology, XIV (June 1949), pp. 148-156; Bryce Ryan and Neal Gross, Acceptance and Diffusion of Hybrid Seed Corn in Two Iowa Communities, Agricultural Experiment Station Research Bulletin 372 (Ames, Iowa: Iowa State College of Agriculture and Mechanical Arts, 1950), pp. 663-664.

²²H. F. Lionberger, Low Income Farmers in Missouri: Their Contacts with Potential Sources of Farm and Home Information, Agricultural Experiment Station Bulletin 441 (Columbia: University of Missouri, 1949), pp. 31-32; Idem, Sources and Uses of Farm and Home Information by Low Income Farmers in Missouri, Agricultural Experiment Station Bulletin 472 (Columbia: University of Missouri, 1951), pp. 23-42.

Wilkening, a contemporary of Lionberger in the area of diffusion research, reported results of his studies during 1949-1952.²³ For the first time, a distinctly socio-psychological approach was noticed in these investigations. Some of the findings of these studies are:

1. A positive correlation was found to exist between most indices of socio-economic status and the adoption of farm practices.
2. A composite index of socio-economic status proved to be more predictive of the extent of the adoption of improved farm practices than either of the separate socio-economic indices.
3. The attitudes of farmers toward high school and college education and toward vocational training were related to the practice adoption.
4. The degree of dependence upon neighborhood and kinship ties was more predictive of the adoption of improved farm practices.

The influence of cultural characteristics of the community on the diffusion and adoption of practices was investigated by Pederson and the

²³Eugene A. Wilkening, "The Acceptance of Certain Agricultural Programs and Practices in a Piedmont Community of North Carolina." (Unpublished Ph.D. dissertation, Department of Sociology, University of Chicago, 1949), pp. 201-203; Idem, "Sources of Information for Improved Farm Practices," Rural Sociology, XV (December 1950), pp. 20-30; Idem, "A Socio-psychological Approach to the Study of the Acceptance of Innovations in Farming," Rural Sociology, XV (December 1950), pp. 352-364; Idem, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, Agricultural Experiment Station Technical Bulletin 98 (Raleigh, North Carolina: University of North Carolina, 1952), pp. 60-62.

results of his investigations were also published during the period 1949-1951.²⁴ Differences between two ethnic groups - Polish and Danish - were studied in relation to their practice adoption rates. He concluded that the culture of the Danish group facilitated the adoption of practices, whereas the culture of the Polish group tended to perpetuate the existing practices.

Burleson's investigations reported between 1950-1952 attempted to determine:

1. The extent to which farmers adopted recommended practices
2. The amount of contact they had with the Extension Service
3. The knowledge they had of extension
4. The effectiveness of extension methods.²⁵

These studies have revealed the importance of direct influence in the adoption of farm practices. Little or no correlation was noticed

²⁴H. A. Pederson, "Acculturation among Danish and Polish Ethnic Groups in Wisconsin," (Unpublished Ph.D. thesis, University of Wisconsin, 1949); Idem, "The Emerging Culture Concept: An Approach to the Study of Cultural Change," Social Forces, XXIX (December 1950), pp. 131-134; Idem, "Cultural Differences in the Acceptance of Recommended Practices," Rural Sociology, XVI (March 1951), pp. 37-49.

²⁵G. L. Burleson, Studying Extension Work with Farmers and Farm Home Makers in Washington Parish, Louisiana (University Station, Baton Rouge: Louisiana University Agricultural Extension, 1950); Idem, Studying Extension Work with Farmers and Farm Home Makers in Red River Parish, Louisiana (University Station, Baton Rouge: Louisiana University Agricultural Extension, 1950); G. L. Burleson, Extension Work in Lafourche, Extension Publication 1054 (University Station, Baton Rouge: Louisiana University Agricultural Extension, 1950), p. 13; G. L. Burleson, Studying Extension Work with Farm and Farm Home Makers in Madison Parish, Louisiana (University Station, Baton Rouge: Louisiana University Agricultural Extension, 1952).

between the percentage of farmers adopting practices and the number of years the practices had been emphasized in the extension program.

Period of Rapid Expansion, 1952-1955

Research on diffusion and adoption of farm practices expanded after 1952. The neighborhood influence on the adoption of practices attracted the attention of a number of investigators. Similarly, the role of family factors in the diffusion process was also being studied. Another feature observed in the research work reported after 1952 was the attention being paid to the adoption of practices in more specific areas of farming such as fertilizer adoption, acceptance of dairy practices, and the adoption of practices among cattlemen and others.

In 1953, Duncan reported the relationships of selected cultural characteristics to the acceptance of educational programs and practices among certain rural neighborhoods in Wisconsin.²⁶ A comparison of the adoption of practices was made between two kinds of neighborhoods - homogeneous and heterogeneous for cultural characteristics. The study disclosed that there are factors of culture and tradition operating in homogeneous neighborhoods that limit the acceptance of improved farming practices and the presence of fewer cultural controls in heterogeneous neighborhoods increases the rate of practice adoption by setting fewer barriers.

²⁶J. A. Duncan, The Relationships of Selected Cultural Characteristics to the Acceptance of Educational Programs and Practices Among Certain Rural Neighborhoods in Wisconsin (Unpublished Ph.D. thesis, University of Wisconsin, 1953).

Wilkening brought out the results of his study on the adoption of improved farm practices as related to family factors, which were published in 1953.²⁷ The study indicated that acceptance is a process with certain uniformities, the rate of adoption proceeding slowly at first and then increasing at more rapid rate. The findings also supported the idea that family and farm mutually influence each other. A positive relationship between the desire for improvements in the home and the practice adoption rate was observed. The extent of familism was not consistently associated in either direction with the adoption of improved farm practices.

In 1954, several investigations were reported by research workers on the influence of neighborhoods on the diffusion and acceptance of new farm practices.²⁸ Marsh Coleman in Kentucky entered into this new field

²⁷Eugene A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors, Agricultural Experiment Station Research Bulletin 183 (Madison, Wisconsin: University of Wisconsin, 1953), pp. 3-5.

²⁸J. A. Duncan and Burton W. Kreitlow, "Selected Cultural Characteristics and the Acceptance of Educational Programs and Practices," Rural Sociology, XIX (December 1954), pp. 349-357; H. F. Lionberger and Edward Hassinger, "Neighborhoods as a Factor in the Diffusion of Farm Information in a North East Missouri Farming Community," Rural Sociology, XIX (December 1954), pp. 377-384; C. Paul Marsh and A. Lee Coleman, "The Relationship of Kinship, Exchanging Work and Visiting to the Adoption of Recommended Farm Practices," Rural Sociology (September 1954), pp. 291-293; H. F. Lionberger, "The Relation of Informal Social Groups to the Diffusion of Farm Information in a North East Missouri Farm Community," Rural Sociology, XIX (September 1956), pp. 233-243; C. Paul Marsh and A. Lee Coleman, "The Relation of Neighborhood of Residence to Adoption of Recommended Farm Practices," Rural Sociology, XIX (December 1956), pp. 385-389.

of research and contributed substantially to it along with Duncan and Lionberger. The results of these investigations indicated the importance of the recognition of interpersonal relationships and group norms among farmers involved in the process of diffusion together with a higher degree of adoption of practices in the case of heterogeneous neighborhoods.

Dimit's doctoral dissertation of 1954, compared the operators of test demonstration farms with operators not in the demonstration program on the basis of socio-economic characteristics and their influence on practice adoption.²⁹ His findings indicated that:

1. The demonstrators were predominately owner operators, were younger in age than non-demonstrators and were better educated
2. The lag in years between the initial contact with the practices and the first trial of the practices was longer than the time lag between the initial trial of the practices and the adoption of the practices.
3. Different sources of contacts were observed for original contacts with the practices and for those influencing trial and adoption of the practices.
4. The age of the farm operator was negatively associated with the adoption of approved practices.

²⁹Dimit, op. cit., pp. 78-84.

Recent Studies, 1955 to the Present

Lionberger continued to explore further the research on sources of farm information and published two more research reports in 1954 and 1955.³⁰ The studies reported were designed to identify the characteristics of farm operators and to identify their information seeking habits. The results indicated many communication lines leading to prominent farmers. The most universally used source of information was friends and neighbors.

The publication in 1955 of the special report from the Iowa State College titled, "How Farm People Accept New Ideas," was an attempt to pool the results of research on the diffusion and acceptance of farm practices, with particular reference to the diffusion process.³¹ Several stages in the diffusion process and adopter categories were identified. Other adopter categories have been added to the list in more recent years.

³⁰H. F. Lionberger and E. Hassinger, "Roads to Knowledge, the Story of Communication Between Farm and College," Agricultural Experiment Station Bulletin 633 (Columbia: University of Missouri, 1954), pp. 8-9; Idem, "Information Seeking Habits and Characteristics of Farm Operators Based on a Study Conducted in North East, Missouri," Agricultural Experiment Station Research Bulletin 581 (Columbia: University of Missouri, 1955), pp. 42-51.

³¹North Central Regional Publication No. 1 of the Agricultural Extension Services, "How Farm People Accept New Ideas," Special Report No. 15, Agricultural Extension Service (Ames, Iowa: Iowa State College, 1955), pp. 10-11.

Publications reported by Hess and Miller (1954),³² England (1955),³³ Naquin (1957),³⁴ Button (1957),³⁵ and Sill (1958),³⁶ were efforts directed to study the diffusion and adoption of farm practices in a more specific field. All of these investigations were centered on practice adoption by dairy farmers. Most of the studies showed an inverse relationship between adoption stage and age, and direct relationship between adoption stage and educational attainment, dairy professionalism score and dairy production aspiration score.

The Iowa study on the fertilizer adoption, published in 1956, was also a research in a more specific area.³⁷ This study was more comprehensive and of special interest since a number of different de-

³²C. V. Hess and L. F. Miller, Some Personal, Economic and Sociological Factors Influencing Dairymen's Actions and Success, Agricultural Experiment Station Bulletin 577 (University Park, Pennsylvania: Pennsylvania State University, 1954), pp. 27-30.

³³G. M. England, Dairy Bench Mark Survey in Vermont, Vermont Agricultural Experiment Station Misc. Publication 5 (Burlington, Vermont: Vermont Agricultural Experiment Station, 1955).

³⁴C. J. Naquin, "Factors Associated with the Adoption of Selected Dairy Farming Practices, Avoyelles Parish 1956," (Unpublished Master's thesis, Louisiana State University, Baton Rouge, Louisiana, 1957).

³⁵D. J. Button, "An Audience Inventory of Illinois Farmers: A Guide to Improve Communication of Dairy Information," (Unpublished Master's thesis, University of Illinois, 1957).

³⁶M. L. Sill, "Personal, Situational and Communicational Factors Associated with the Farm Practice Adoption Process," (Unpublished Ph.D. thesis, The Pennsylvania State University, University Park, Pennsylvania, 1958).

³⁷M. A. Anderson, et al., An Appraisal of Factors Affecting the Acceptance and Use of Fertilizers in Iowa, Iowa Agricultural Experiment Station Special Report 16 (Ames, Iowa: Iowa State College, 1956), pp. 3-4.

partments of the college joined together co-operatively to carry out the investigation. The findings of this investigation characterized the fertilizer adopters as having (1) relatively larger amounts of capital invested in their farms, (2) larger farms, (3) more years of formal education, (4) relatively younger ages, and (5) few years of farming experience.

Rogers initiated a new kind of research, when he reported in 1957 on a conceptual variable analysis of technological change.³⁸ The major objectives of this study were:

1. To find out how well practice adoption can be predicted by conceptual variable analysis of sociological factors; and
2. To determine which variables were best predictors. Six conceptual variables used in the study were:
 - a. Change orientation,
 - b. Communication competence,
 - c. Status achievement,
 - d. Cohesion with the local group,
 - e. Family integration,
 - f. Cohesion with the kinship group.

Data regarding the adoption of farm practices were used to construct indexes to measure the relationship of these variables to technological change. The findings indicated that concepts (a) change orientation,

³⁸E. M. Rogers, "A Conceptual Variable Analysis of Technological Change," (Unpublished Ph.D. dissertation, Iowa State College, 1957).

(b) communication competence, and (c) status achievement were the most successful predictors.

Lionberger and Coughenour made another substantial contribution to diffusion research in 1957.³⁹ Their publication concerned the role of informal structural elements in the diffusion and use of farm information. This study was well timed since some rural sociologists were demanding greater attention to research in this particular area in view of the apparently rapid disappearance of the neighborhood functions in rural society.⁴⁰

Raudabaugh's study published in 1957 on the cotton production improvement program has indicated the need for research on the relation of knowledge to adoption of practices.⁴¹ The examination of adoption rates for certain recommended practices associated with each phase showed that there was an urgent need for more education work on the inter-relatedness of all phases. Sizer and Porter by presenting their paper in 1957 have advanced an argument for research needed in this comparatively new facet.⁴²

³⁹H. F. Lionberger and C. M. Coughenour, Social Structure and Diffusion of Farm Information, Agricultural Experiment Research Bulletin 631 (Columbia, Missouri: University of Missouri, 1957), pp. 91-99.

⁴⁰C. P. Loomis and Allan Beegle, Rural Society Systems (New York: Prentice Hall, 1950), pp. 334-344.

⁴¹J. N. Raudabaugh, A Study of the Cotton Production Improvement Program in Nine Southern States, Extension Service Circular 515 (Washington, D. C.: U. S. D. A., Federal Extension Service, 1957).

⁴²L. M. Sizer and W. F. Porter, "The Relation of Knowledge to Adoption of Practices Recommended by Agricultural Extension," (Paper read at the Joint Meeting of the American Sociological Society and the Rural Sociological Society, Washington, D. C., August 29, 1957).

A study reported by Rogers and Beal in 1958, which dealt with reference group influence in the farm practice adoption, was considered another landmark.⁴³ For the first time, projective techniques were used in tape recorded field interviews as a means of studying reference group behavior. The major findings of the study indicated that (1) the neighborhood reference group was generally more important for later adopters than for earlier adopters, and (2) farmers who were more dependent upon family ties were slightly later adopters.

Young and Coleman have recently reported (1959) on their study of neighborhood influence on the adoption of farm practices.⁴⁴ The study indicated that neighborhood norms may be important factors in the adoption of recommended farm practices. Farmers in some neighborhoods ascribed scientific farming attitudes to their neighbors to a much greater extent than is true in other neighborhoods.

This short history is not an attempt to discuss all research completed in the areas of diffusion and practice adoption as that would hardly be practical. However an attempt has been made to narrate in brief the development of farm practice adoption research since the start of the Cooperative Extension Service in the U. S. The purpose was to develop a guideline for further discussions presented in this study.

⁴³E. M. Rogers and G. M. Beal, Reference Group Influence in the Adoption of Agricultural Technology, Iowa Agricultural Experiment Station Journal Paper 3373 (Ames, Iowa: Iowa State College, 1958), p. 77.

⁴⁴J. N. Young and A. Lee Coleman, "Neighborhood Norms and the Adoption of Farm Practices," Rural Sociology, XXIV (December 1959), pp. 372-380.

Summary of the Historical Review

The research work on the diffusion and adoption of farm practices has been conducted now for nearly four decades. This period may be classified into seven phases.

1. Wilson's studies, 1920-1930. Nearly fifty studies were conducted by M. C. Wilson of the Federal Extension Service and his associates. These are popularly known as "Farm Practice Adoption Studies." Socio-economic characteristics of the families studied were found to be correlated with the adoption of practices.

2. Period of research lag, 1930-1940. During this period, there was not much progress in the research work. Only a few studies were reported by Wilson and others on the sources of farm information. The research work on the diffusion and adoption of farm practices did not attract the attention of the sociologists during these two phases.

3. Work done by Hoffer and associates. Hoffer from Michigan contributed substantially to the research during this phase. The effects of various social factors and social organizations on farm practice adoption were studied by these workers.

4. Studies of diffusion process, 1948-1950. These studies were led by Ryan and Gross. The time sequence pattern of the diffusion process in relation to farm practice adoption was investigated and different stages in the diffusion process were identified; the adopters were classified into various categories depending on their rates of adoption of practices.

5. Investigations by Lionberger and Wilkening, 1949-1952. Lionberger's investigations were centered around the sources of farm information while Wilkening introduced a distinctly socio-psychological approach to the study of diffusion and adoption of farm practices.

6. Period of rapid expansion, 1952-1955. The research on diffusion and adoption of farm practices rapidly expanded during this period. A notable feature of the research was the attention paid to the study of the relationships between neighborhoods and practice adoption. The field of research was narrowed down as more specific areas of farm practice adoption were taken up for study. This period also brought a larger number of research workers into the field. The Sub-Committee on the Diffusion and Adoption of Farm Practices, of the Rural Sociological Society reviewed the research work and developed a system of classification still in general use by research workers at this time.

7. Recent studies, 1955 to the present. This period has seen new ideas developing in the field of research on the diffusion and adoption of farm practices. The study on the role of informal structural elements in the diffusion and use of farm information reported by Lionberger and Coughenour, Roger's conceptual variable analysis and the projective technique in practice adoption, and the recognition of the need for research on the relation of knowledge of practices to their adoption are some of the newer areas receiving attention. Attempts to make the results of research available for practical application are being made. The Iowa publication entitled How Farm People Accept New Ideas, Research Summaries by the Federal Extension Service, Communication Research publications by the National Project in Agricultural Communications at the Michigan State University, and the "Evaluator," published by the Agricultural Extension and Research Service Department of the

Pennsylvania State University are a few examples of efforts to make the findings of research available, where appropriate, to the people.

II. SCHEME FOR CLASSIFICATION OF RESEARCH ON DIFFUSION AND ADOPTION OF FARM PRACTICES

After completing the historical survey, it would appear that the studies to date have been concerned with various aspects and conditions relating to diffusion and adoption of farm practices. It would be profitable to classify the research on the basis of major emphasis in order to facilitate drawing summary of the results and to specifically state their implications for extension teaching.

The four-fold classification adopted by the Sub-Committee on the Diffusion and Adoption of Farm Practices of the Rural Sociological Society, furnishes a workable outline for the purposes of this study.⁴⁵ The major problem areas as suggested by this Committee together with various research problems under each are:

A. The differential acceptance of farm practices as a function of status, role and motivation

Research problems

1. How is the acceptance of farm practices influenced by the status (social, economic, age, race and sex) of the farm operator?

⁴⁵Sub-committee on the Diffusion and Adoption of Farm Practices, the Rural Sociological Society, op. cit.

2. How is the acceptance of farm practices influenced by the role (leadership roles, family roles, and roles in introducing innovations) of the farm operator in the family and in the community?
3. How are farmers motivated to accept or to reject farm practices?
 - a. To what extent is acceptance rationalized on the basis of purely economic rather than non-economic considerations?
 - b. To what extent does the desire for higher social status or social recognition provide incentive for the adoption of improved practices?
 - c. To what extent is acceptance influenced by primary group loyalties (neighborhood, kinship)?
 - d. How is acceptance influenced by the relationship of acceptance to family values of security, health, comfort, and recreation?
 - e. How is acceptance influenced by personality tendencies toward dependence upon others as opposed to self sufficiency or independence?

B. The differential acceptance of farm practices as a function of socio-cultural systems

Research problems

1. The relative importance of agriculture as compared with other occupations and sources of income among the members of the systems.

2. The type and amount of leadership in the systems.
3. The type and degree of social stratification and the amount of social mobility or of opportunity for it in the systems.
4. The dominant value orientation or the basic themes of the systems.
5. The degree of cultural isolation or the position of the systems on the folk secular continuum.

C. Diffusion as the study of cultural change

Research problems

1. What is the rate and process of diffusion of different types of farm practices?
2. What is the rate and process of diffusion of farm practices in different socio-cultural systems?
3. What is the process of acceptance of farm practices with respect to the status of those who accept and by what media are they influenced at different stages in the process?
4. What is the impact of the introduction of new farm practices on the existing cultural pattern?
5. What factors serve to increase or to lessen the time interval between first knowledge about farm practices and their adoption?

D. Diffusion as a problem of communication of information

Research problems

1. What differences are there in the extent to which sources of information are utilized by farmers to obtain information

on farm matters in different localities and regions?

2. What are the differences in content and characteristics of various types of communications about farm practices?
3. What is the relationship of characteristics of the recipients of information to the sources utilized?
4. What is the relative importance of different media of information:
 - a. In bringing new practices to the attention of the farmer as compared to influencing adoption of the practices?
 - b. In providing the most information as compared to providing limited or special information about specific practices?
 - c. In regard to the type of practice?
5. What is the relationship of techniques of communication to their effectiveness in obtaining acceptance of farm practices?

It is hardly practicable to discuss at length the summaries of the findings of diffusion research in a short thesis like this. Hence, only a few major findings under the above stated major research problems will be summarized, and an attempt made to state their implications explicitly for application to extension education in the next chapter.

CHAPTER IV

MAJOR FINDINGS OF THE RESEARCH STUDIES ON FARM PRACTICE ADOPTION AND THEIR IMPLICATIONS FOR EXTENSION EDUCATION

As indicated in the last chapter, the classification scheme developed by the Sub-Committee will be used as a basis for summarizing the results of research in this chapter, as far as possible. Some major research findings have been summarized and an attempt has been made to explicitly state their implications for extension education.

I. THE DIFFERENTIAL ACCEPTANCE OF FARM PRACTICES AS A FUNCTION OF STATUS, ROLE AND MOTIVATION

How the Acceptance of Farm Practices is Influenced by the Status of the Farmer

We will limit our concern here to five components of the status factor which are as follows:

1. Age of the farm operator
2. Education
3. Farm ownership
4. Size of farm
5. Socio-economic status

A brief discussion pertaining to the above components will now be dealt with.

Age of the farm operator. Early studies by Wilson and Associates of the United States Department of Agriculture disclosed that higher farm practice adoption occurs with farmers of age group 30 to 45 than with those of other age groups.¹

A number of studies conducted more recently also revealed a higher farm practice adoption with younger farmers than with older.² Although the age ranges have not been specifically stated in many of the studies, it would appear to be safe to generalize that the farmers within the age range 30-45 are higher adopters of farm practices than those of other age groups either younger or older. This may partly be explained on the basis of the generally accepted principle of diffusion which states that young people have had less time to understand and to be conditioned by the old culture. Another reason might be the relationship of age to education. It is commonly observed that young people of the present day

¹C. B. Smith and M. C. Wilson, The Agricultural Extension System of the United States (New York: John Wiley and Sons, 1930), p. 344.

²The Extension Service in Vermont, Part I, Farmers and the Extension Service (Washington, D. C.: U. S. D. A. and Bureau of Agricultural Economics, July 1947), p. 3; E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, Agricultural Experiment Station Technical Bulletin 98 (Raleigh, N. C.: North Carolina State University, 1952), p. 61; M. A. Anderson, et al., An Appraisal of Factors Affecting Acceptance and Use of Fertilizers in Iowa, Special Report No. 16 (Ames, Iowa: Agricultural Experiment Station, Iowa State College, 1956), p. 3; R. M. Dimit, "Diffusion and Adoption of Approved Farm Practices in Eleven Counties in Southwest Virginia," (unpublished Ph.D. thesis, Iowa State College, Ames, 1954), p. 83.

usually have more formal education than the older ones. Lower practice adoption in the case of farmers below 30 years of age may also be due to a lack of necessary land or capital resources. In other cases, it may be attributed to their being restrained by their fathers or fathers-in-law.³

The interpretation made by Wilson and Gallup⁴ that age is not an important factor influencing the number of farm practices adopted, needs careful reconsideration. It would appear that their explanation is based more on the psychological principle that adults too can learn like the youth. However, they have not considered the principles involved in the diffusion of cultural traits. Accepting the psychological principle that adults have the same capacity to learn, the other cultural factors favor the relatively younger farmers as being more receptive to greater farm practice adoption. In view of such principles accepted by many, it would appear to be difficult to completely agree with the stand that age is not an important factor influencing practice adoption. The opposite case is borne out, particularly in the case of the adoption of fertilizer practices. A nationwide study of fertilizer practices has revealed that high level fertilizer users are relatively younger in age.⁵

³E. A. Wilkening, "The Process of Acceptance of Technological Innovations," Rural Sociology, Bertrand (Ed.) (New York: McGraw-Hill Book Company, 1958), p. 397.

⁴M. C. Wilson and Gladys Gallup, Extension Teaching Methods and Other Factors that Influence Adoption of Agricultural and Home Economic Practices: Extension Service Circular 495 (Washington, D. C.: Federal Extension Service, U. S. D. A., 1955), p. 22.

⁵National Plant Food Institute, "A Study of Farmer's Attitudes Toward the Use of Fertilizer," Research Summary 47, March 1958, E. R. and T. 98 (4-58) Federal Extension Research and Training, U. S. D. A., Washington, D. C.

Age, then, ceteris paribus, may well be considered a factor affecting adoption of farm practices.

Implications for extension teaching. (1) Farmers in the age group 30-45 are likely to be the best choice for selection as demonstrators in most cases and particularly when all the other factors remain the same. (2) Educational efforts especially planned for and directed to the older groups and, separately, to younger groups who are dependent on their fathers and fathers-in-law, ought to increase the adoption of new farming practices. (3) Efforts to help young farmers in solving their problems connected with securing adequate capital, land and/or other limiting resources are necessary for increasing their adoption of farm practices.

Education of the farmer. Findings from the research reviewed for this study show that better educated farmers are the higher adopters of farm practices when compared with those who are less educated.⁶ These studies also indicate that a large number of farmers discontinue their schooling before they reach high school. The influence of education on practice adoption may be due to the possibility of greater use made of different sources of information by the better educated farmers. Wilkening

⁶Smith and Wilson, op. cit., p. 341; "The Extension Service in Vermont," op. cit., p. 3; Bryce Ryan and Neal Gross, Acceptance and Diffusion of Hybrid Corn Seed in Two Iowa Communities, Agricultural Experiment Station Bulletin 372 (Ames, Iowa: Iowa State College, 1950), p. 689; E. A. Wilkening, "The Acceptance of Certain Agricultural Programs and Practices in a Piedmont Community of North Carolina" (unpublished Ph.D. thesis, University of Chicago, 1940), p. 201; Wilson and Gallup, op. cit., p. 22; M. A. Anderson, et al., op. cit., p. 7.

supports this viewpoint by stating, "Formal education allows for the introduction of ideas and standards from outside the family and the locality group."⁷ Education also increases the value of science as it applies to farming.

Implications for extension teaching. (1) The reading material to be used in extension teaching needs to be written at the sixth to seventh grade level of education. (2) A large number of farm people who are low in educational level have to be reached through direct contacts with the county agents (such as farm visits, meetings and demonstrations), farm papers and magazines, and also through the indirect spread of information. (3) Separate programs suitable to the needs of better educated farmers are equally essential if their interest in the program is to be maintained.

Farm ownership. Research studies indicate that there is not much difference between the owners and tenants in the use of improved farm practices in general.⁸

However, where an improved farm practice involves continuous efforts for a number of years and/or when an immediate return from a practice is not expected, a greater number of owners have adopted such practices than have the tenants.⁹

⁷E. A. Wilkening, "The Process of Acceptance of Technological Innovation," op. cit., p. 397.

⁸Smith and Wilson, op. cit., pp. 337-338; Ryan and Gross, op. cit., p. 692; Extension at Work in Lafourche, Extension Publication 1054 (Baton Rouge, Louisiana: Louisiana State University, 1950), p. 13; Wilson and Gallup, op. cit., p. 24; Anderson et al., op. cit., p. 6.

⁹E. A. Wilkening, "The Acceptance of Certain Agricultural Programs and Practices in a Piedmont Community of North Carolina," op. cit., 1949, p. 201; Dimit, loc. cit.

Reasons for the above findings are not difficult to understand. The relative advantage of a practice determines its adoption when all other conditions remain the same. In case of practices which promise immediate returns, both the tenant and the owner are equally profited. Many times the tenant is more likely to adopt such practice early in order to receive the maximum benefit during his tenure period, especially if he is not certain of recontracting at the end of the present tenure period. On the other hand, the effect would be quite the reverse when a practice does not promise an immediate advantage. The same uncertainty of the tenure period now prevents the tenant from taking risks and he will not adopt the practice. This partially explains the low adoption, by tenants, of practices like establishing permanent pastures and other soil conservation practices which pay off only over a period of time. By the same token, those selected as test demonstrators are most often found to be owners.¹⁰

Implications for extension teaching. (1) While selecting unit test demonstrators for the program jointly sponsored by the Tennessee Valley Authority and the extension division of the Land Grant Colleges in the Tennessee valley and adjacent territory, or other demonstrators with a view to testing practices requiring continuous efforts over time, attempts to persuade tenant farmers to co-operate in the endeavor may not be as likely to succeed as similar efforts with owners. (2) If a tenant farmer is slow in adopting a new practice which promises an

¹⁰Dimit, loc. cit.

immediate advantage, the failure to adopt the practice is likely to be due to factors other than tenure status. Under such circumstances, the extension worker needs to help the farmer to solve the latter's difficulties arising out of such problems as lack of capital, land, labor, livestock, cropping system and supplies, buildings, machinery and equipment and managerial ability.

Size of farm. It is generally hypothesized that the adoption of farm practices is directly related to the size of the farm. This hypothesis has been supported by a large number of studies.¹¹

Reasons for this advantage in favor of large farms may be explained as below: (1) Large farms tend to employ more outside labor when compared to small farms. This will often make it possible for larger farmers to find enough spare time to participate more fully in extension activities. (2) Large farms have increased volume of business and, thus, greater capital is available to farm operators than in the case of small farms. This will enhance their risk bearing capacity and permit trial of new ideas and practices and even limited failure without inconvenience to normal operation and practices.

¹¹Smith and Wilson, op. cit., 1930, p. 339; E. A. Wilkening, "The Acceptance of Certain Agricultural Programs and Practices in a Piedmont Community of North Carolina," op. cit., 1949, p. 201; Neal Gross, "The Differential Characteristics of Acceptors and Non-acceptors of an Approved Technological Practice," Rural Sociology, XIV (June 1949), p. 149; Ryan and Gross, op. cit., p. 663; Lee Coleman, "Differential Contact with Extension Work in a New York Rural Community," Rural Sociology, XVI (September 1951), p. 207; E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, 1952, p. 61; J. H. Copp, Personal Social Factors Associated with the Adoption of Recommended Farm Practices Among Cattlemen; Agricultural Experiment Station Technical Bulletin 83 (Manhattan, Kansas: Kansas State College of Agriculture, 1956), p. 17.

Implications for extension teaching. (1) Small farmers may seldom find time to participate in extension activities like method demonstrations, discussion meetings and tours. Two reasons may be attributed to this: (a) They employ less hired labor and hence, are busy in farm operations. (b) Part-time farmers go to the neighboring cities for off farm work and so have little or no spare time. This necessitates increasing the number of farm visits in order to reach them. (2) Personal letters may be more profitably utilized to contact the small sized farms. (3) Lectures, leader training camps, and other educational activities which require the farmers to go to places away from their farms, must be necessarily arranged so as to suit the convenience of small farmers if they are to be reached. (4) In recommending improved practices to small farm operators, a long range program should be drawn up in such a way that these farmers will not be required to invest large amounts of capital in short periods. (5) More educational programs are needed for small farmers that are designed to increase their understanding and wise use of various sources and kinds of credit for purchasing the necessary equipment to encourage their practice adoption.

Socio-economic status of the farmer. Farmers who are high on the socio-economic scale adopt greater numbers of farm practices than those who are low on the scale.¹²

¹²Coleman, op. cit., 1951, p. 214; E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., 1952, p. 61; C. Paul Marsh and A. Lee Coleman, The Relation of Farmer Characteristics to the Adoption of Recommended Farm Practices, Rural Sociology, XX (September, December, 1955), p. 296.

Education is one of the items which influences the socio-economic scale and hence, is closely related to it. Different indexes of socio-economic scales have been used in studies in this area including the Sewell scale.*

Education is a determinant of status and the latter in turn may decide a person's opportunities for education or his interest in it. This may, therefore, explain the same kind of relation between socio-economic level and the number of farm practices adopted as between education and the adoption of farm practices.

Implications for extension teaching. (1) Extension workers need to improve and give more emphasis to their educational programs aimed at reaching farmers who are relatively low on the socio-economic scale. (2) Farmers who are low on the socio-economic scale have to be sought out, informed about the various available services and encouraged to use them. (3) Extension workers must recognize that the difference in the adoption of farm practices between the farmers high and low on the socio-economic scale is a difference which may not exist if limiting factors blocking the latter are dealt with successfully. If the clientele is identified according to its socio-economic status, and educational programs suitable to the respective needs of people are taken up, even the farmers who are low on the scale will also adopt a relatively greater number of farm practices.

*For detailed information on Sewell scale, see Rural Sociology, VIII, June 1953, pp. 161-170.

How Acceptance of Farm Practices is Influenced by the Role of the Clientele

The role of participants in extension activities and farm organizations. Farm people participating in extension activities and farm organizations usually adopt more farm practices than non-participants.¹³

The above relation may be attributed to one or many of the following factors:

1. The development of favorable attitudes among the participating farmers
2. An earlier, more direct contact with new ideas
3. A clarification of doubts, if any, by discussion in a group
4. A healthy form of competition
5. An affiliation with majority opinion
6. A more personal relation between the farmer and the extension worker.

¹³Smith and Wilson, op. cit., p. 346; C. R. Hoffer, Acceptance of Approved Farming Practices Among Farmers of Dutch Descent, Agricultural Experiment Station Special Bulletin 316 (E. Lansing, Michigan: Michigan State College, 1942), p. 33; Idem, Social Organization in Relation to Extension Service in Eaton County, Michigan: Agricultural Experiment Station Special Bulletin 338 (E. Lansing, Michigan: Michigan State College, 1946), p. 31; Gross, loc. cit.; E. A. Wilkening, "The Acceptance of Certain Agricultural Programs and Practices in a Piedmont Community of North Carolina," op. cit., p. 202; Idem, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., 1952, p. 46; Idem, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., 1953, p. 4; Copp, op. cit., 1956, pp. 14-15; Kenneth Sanford Olson, "The Relation of Selected Farmers' 4-H Experience to Their Adoption of Improved Farm Practices," (unpublished Ph.D. dissertation, National Agricultural Extension Center for Advanced Study, University of Wisconsin, Madison, 1959), as cited in the Newsletter 1959 of the National Agricultural Extension Center.

Implications for extension teaching. Research evidence then implies that extension workers should:

1. Work more closely with the existing farm organizations
2. Increase their educational efforts for encouraging participation of a maximum number of farmers in organizations and associations
3. Emphasize activities in 4-H, young farmers' and adult farmers' and community programs.
4. Encourage more farmers to participate in program planning activities

The role of leaders. Before entering into a discussion of the role of leadership in practice adoption, it is necessary to consider the following three types of leaders: (1) Community leaders (2) Informal leaders or local adoption leaders (3) Community adoption leaders.

Community leaders. They are those to whom the people in a community look for advice and leadership in community activities. They generally have a high socio-economic status in the community.

Informal leaders or local adoption leaders. They are those to whom other farmers go for advice on or discussion of farm problems. They are not usually different from the majority in their personal and social characteristics as compared to the community leaders. "Their leadership position is maintained on the basis of being 'sound' and showing ability to use good judgment. One remains an informal leader only

so long as he is considered by others to possess those attributes."¹⁴

Community adoption leaders. They are the larger and more nearly commercial type of farmers in local rural areas. "They have direct contact with agricultural agencies and may be leaders in farm organizations. They participate more than the majority in formal organizations and have wider social contacts."¹⁵

Few exhaustive studies on the role of leadership on farm practice adoption have been conducted. Five major findings are given below.

(1) In one study, leadership in organized community affairs was not found to be related to the adoption of farm practices.¹⁶

(2) Wilkening found that leaders in farm organizations adopted a greater number of farm practices than others.¹⁷

(3) According to Lionberger, community adoption leaders were found to be far ahead of others in the adoption of selected technological practices in farming, though they were usually not the first adopters.¹⁸

¹⁴North Central Regional Publication No. 1 of the Agricultural Extension Service: How Farm People Accept New Ideas, Special Report 15, Agricultural Extension Service (Ames, Iowa: Iowa State College, 1955), p. 9.

¹⁵Ibid.

¹⁶Bryce Ryan and Neal Gross, Acceptance and Diffusion of Hybrid Corn Seed in Two Iowa Communities, op. cit., 1950, p. 663.

¹⁷E. A. Wilkening, unpublished data as cited by the Sub-Committee on the Diffusion and Adoption of Farm Practices, op. cit., p. 3.

¹⁸H. F. Lionberger, "Some Characteristics of Farm Operators Sought as Sources of Farm Information in a Missouri Community," Rural Sociology, XVIII (December 1953), p. 335.

(4) Wilkening also observed that informal leaders apparently do not adopt more farm practices than other farmers; nor are they necessarily innovators.¹⁹

(5) Research conducted in Kentucky has thrown light on another aspect of informal leadership. In communities of relatively high adoption, informal leaders adopted more practices than other farmers; while in areas of low adoption, little difference was noted.²⁰

The above findings indicate that there is no consistency in the results with reference to early adoption of farm practices. This means that the role of leadership is not an influential determinant on early acceptance of practices. Thus, the findings are partially in agreement with the generally expressed principles of acceptance which state that the first individuals in a society to accept new practices may often be the discontented, the experimenters, the progressive and likewise (see Chapter II, pp.64-66). So, the mere fact that a person happens to be a leader of a given type (community, informal or community adoption) may or may not be the decisive factor causing his early adoption of specific farm practices. At the same time, in areas of high adoption, the residents of a neighborhood frequently place comparatively high value on

¹⁹E. A. Wilkening, "Informal Leaders and Innovators in Farm Practices," Rural Sociology, XVII (September 1952), p. 274.

²⁰C. Paul Marsh and A. Lee Coleman, "Farmers' Practice Adoption Rates in Relation to Adoption Rates of Leaders," Rural Sociology, XIX (June 1954), pp. 180-181.

innovations. Consequently the community adoption leaders are more influential with respect to the adoption of improved practices because they usually adopt given innovations earlier than other local people.²¹

However, the foregoing should not be interpreted to mean that leaders do not have important roles in farm practice adoption. Local leaders do conform to the values and standards of the locality and, therefore, do not push too far ahead in the group. Nevertheless, they are influential in spreading new ideas after their acceptance by innovators and early adopters.

Implications for extension teaching. (1) Community leaders may be primarily thought of as local resource personnel whose services will be useful for: facilitating organizational activities, rendering necessary assistance in the identification of innovators, community adoption leaders and informal leaders; and helping in the conduct of other related activities.

(2) Research indicates that early special efforts made to sell new ideas to community adoption leaders and informal leaders increase the effectiveness of local extension programs. This means that, if extension workers succeed in persuading informal leaders to adopt farm practices, the stage will be set for the adoption of practices by the entire community.

Role of family factors. The study of the role of family factors is based on the hypothesis that decisions are influenced not only by

²¹Ibid.

economic and personal factors, but also by family factors. A study conducted by Wilkening supports this hypothesis.²² Some of the family factors involved in the adoption of farm practices have been isolated. Such factors together with a few research findings include:

(1) Rationality in decision making. Rationality is understood as a variable intervening between the operation of the socio-cultural variables and the act of adoption. Thinking, planning and using the best available information and sources and advice are involved in reaching decisions meant to achieve maximum socio-economic ends. When contact with extension and rationality score were individually compared with adoption score, rationality score appeared to be a better predictor of adoption than did contact with extension.²³

(2) Familism. Familism is referred to as interdependence between generations and/or between relatives. The extent of familism was not consistently associated in either direction with the adoption of farm practices.²⁴

(3) High value placed on education of children. High value here includes the level of schooling desired for children, choices in situations involving education and expenditures of time or money for the farm.

²²E. A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., 1953, p. 6.

²³Alfred Dean, Herbert A. Aurbach and C. Paul Marsh, "Some Factors Related to Rationality in Decision Making Among Farm Operators," Rural Sociology, XXIII (June 1958), p. 133.

²⁴Eugene A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., p. 5.

High value placed upon education for children was positively associated with the adoption of farm practices.²⁵

(4) High value placed on owning one's farm free of debt. High value in this case refers to situations involving paying ahead on the mortgage rather than making a down payment on additional equipment when extra cash is available. High value placed upon owning one's farm free of debt was negatively associated with the farm practice adoption.²⁶

(5) Family's conception of standards of production. The conception of standards of production here means to be satisfied with a low or a high level of performance. Farmers' conception of a good level of farm production may serve as a source of motivation to improve his farm production.²⁷

Implications for extension teaching. (1) Extension workers need to determine the rationality scores of local farm people. The scaling device developed and used by Dean and associates²⁸ might be of possible value for such determinations. Farmers having low rationality scores require more contacts with extension than those having high scores.

²⁵Copp, op. cit., p. 16.

²⁶Ibid.; C. R. Hoffer and Dale Stangland, Farmers Reactions to New Practices: Agricultural Experiment Station Technical Bulletin 264. (E. Lansing, Michigan: Michigan State University, 1958), p. 22; E. A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., p. 5.

²⁷C. V. Hess and L. F. Miller, Some Personal, Economic and Sociological Factors Influencing Dairyman's Actions and Success. Agricultural Experiment Station Bulletin 577 (Pennsylvania: The Pennsylvania State University, 1956), p. 28.

²⁸Dean, Aurbach and Marsh, op. cit., pp. 123-125.

Special educational efforts are needed to increase the rationality scores of farm people. (2) Young farmers staying with their parents are more often handicapped by shortage of capital and lack of sufficient experiences. These appear to be the main reasons for their comparatively low adoption of farm practices rather than any negative influence exerted by their parents. (3) Farmers having children may be motivated to adopt new farm practices if the advantages of the same are related to the possibility of attaining their goals for education of their children. (4) In case farmers have placed a high value on debt-free property, practices requiring high capital investment need to be pushed cautiously. Under such circumstances it might be helpful to introduce the practices in stages, so as not to involve a large capital investment at any one time. (5) Special educational programs are needed to teach the farmers about desirable levels of farm production.

Role of neighbors, friends and relatives. Although the adoption of farm practices depends principally on the personal and family characteristics of farmers, the role played by neighbors, friends and relatives needs also to be considered. Research studies on the relation of practice adoption to neighborhood, kinship and friends have indicated the following: (1) Different neighborhoods located in a single county were observed to vary in their practice adoption rates.²⁹ (2) The dependence of a farmer upon neigh-

²⁹C. Paul Marsh and A. Lee Coleman, "Group Influences and Agricultural Innovations - Some Tentative Findings and Hypotheses," American Journal of Sociology, XLI (1956), pp. 588-594.

borhood and kinship has made him less likely to adopt new practices.³⁰

(3) The higher the adoption of farm practices by a farmer, the higher were the adoption rates of most of his relatives and members of visiting and work exchange groups.³¹ (4) Informal groups exerted influences which facilitated the interpersonal exchange of farm information and encouraged farm practice adoption.³² (5) The influence of neighborhood normative behavior was observed to a higher degree within comparatively high adoption neighborhoods than in comparatively low adoption ones.³³

In the discussion of the phenomenon of acceptance or rejection, it was made clear that the qualities of an advocate of change, like prestige and personality, exert some influence on the acceptance of an innovation. In a neighborhood, the group leader can be considered as an outgroup advocate. In neighborhoods where such a group leader has adopted improved practices, remaining farmers are naturally influenced by him to also adopt given practices. By the same token, the reverse influence

³⁰ E. A. Wilkening, "A Socio-Psychological Approach to the Study of Acceptance of Innovations in Farming," Rural Sociology, XV (1950), pp. 352-364.

³¹ C. Paul Marsh and A. Lee Coleman, "The Relations of Kinship, Exchanging Work and Visiting to the Adoption of Recommended Farm Practices," Rural Sociology, XIX (September 1954), pp. 291-293.

³² H. F. Lionberger, "The Relation of Informal Social Groups to the Diffusion of Farm Information in a Northeast Missouri Farm Community," Rural Sociology, XIX (June 1956), pp. 387-388.

³³ James N. Young and A. Lee Coleman, "Neighborhood Norms and the Adoption of Farm Practices," Rural Sociology, XXIV (December 1959), pp. 372-380.

may also operate. Another reason for the influence of neighborhood may be that in many cases, the individual's behavior is not independent of the group standards and/or expectations of the social systems in which he interacts.

Implications for extension teaching. (1) Extension workers need to locate the neighborhoods, groups or kinships which are in operation in local communities as a first step to getting acceptance of a practice. (2) Extension workers must identify the neighborhood leaders or informal leaders and other influential people in such neighborhoods or groups in order to seek their help. (3) Extension workers need to devote special attention to educating group leaders or neighborhood leaders when a given new farm practice is to be diffused in a group or neighborhood for their lead will be followed by the rank and file. (4) Extension staff should profit by working with existing organizations located in neighborhoods since farmers depend on group decisions for adopting certain farm practices. (5) Extension workers should be aware of the fact that in areas where neighborhood relations strongly operate, people get most of their information through their neighbors rather than through other sources. Thus, it becomes profitable to channel communication through individual neighborhoods, groups, or cliques. (6) Extension agents in planning to make farm visits could apparently do a better job of communicating with more families by planning to visit one farm in each of four neighborhoods rather than planning to visit five farms in only three neighborhoods. Members of each neighborhood group thus feel that they have been properly represented and considered in the visitation, and diffusion is further expedited.

II. THE DIFFERENTIAL ACCEPTANCE OF FARM PRACTICES AS A FUNCTION OF SOCIO-CULTURAL SYSTEMS

Five major research problems have been suggested by the Subcommittee on the Diffusion and Adoption of Farm Practices under this group. However, only a few studies have attacked the problems so far.

The Relative Importance of Agriculture as Compared with Other Occupations and Sources of Income Among the Members of the Systems

Copp's investigation has indicated that diversification of farming by beef cattle farmers did not reduce their rate of adoption of cattle practices.³⁴

This result appears to contradict the general belief that diversified farmers obtaining their income from several distinct enterprises would have the lowest adoption scores.

More research data are needed as a basis for any definite generalization.

The type and amount of leadership in the system. In a Michigan study, the degree to which local lay leadership was involved in extension work was found to be positively related to the success of local extension programs.³⁴

³⁴Copp, op. cit., p. 21.

³⁵C. R. Hoffer, The Community Situation as it Affects Agricultural Extension Work. Agricultural Experiment Station Special Bulletin 312. (East Lansing, Michigan: Michigan State College, 1944), p. 34.

The importance of developed leadership to extension in a local area has been shown and verified by a number of studies. Local lay leaders multiply the efforts of the county extension worker many fold.

Implications for extension teaching. (1) Identifying and developing leaders are primary concerns of extension personnel in all areas in which extension has responsibility. (2) Where local lay leadership is not already actively functioning, extension workers should recognize the value of and use sound leader training programs along with other educational efforts for the maximum effective diffusion of farm practices and information.

The type and degree of social stratification and the amount of social mobility, or opportunity for it, in the systems. Conclusive evidence on this aspect of research is lacking. It is hypothesized that differences in the social structures of communities or localities influence farm practice adoption.

Wilkening has reported that neighborhoods with high stratification lagged behind in their adoption of farm practices.³⁶

This may be attributed to a wide gap in social contact among different strata which act as barriers in the communication process.

Implications for extension teaching. (1) In a highly stratified society, special educational efforts are needed to reach and teach people in the lower strata. Cooperation in a national program based on the

³⁶E. A. Wilkening, "Process of Acceptance of Technological Innovations," pp. 398-399.

problems of low income farmers, and known as Rural Development, is an example of present extension efforts in this direction. (2) Minister also to special needs of commercial and other farmers.

The dominant value orientation or the basic themes of the systems.

This research area has attracted the particular attention of the cultural anthropologists. At the same time, rural sociologists have not conducted many studies on this aspect of diffusion and adoption of farm practices, studies reported by Hoffer, Pederson, and Kollmorgen representing the main contribution to the present time.³⁷

In his study of Dutch farmers, Hoffer concluded that the rate and extent of acceptance of approved practices constituted an indication of cultural change. Pederson's comparative study of farmers from two separate systems indicated that the cultural adjustments made by a Danish group facilitated the introduction of new ideas, while the adjustments made by a Polish group tended to perpetuate the status quo. According to Kollmorgen, American Germans studied were found to be quick to accept soil building practices while Americans not of German descent were rather slow in adopting the same.

These results indicate that variations in adoption of farm practices are related to certain characteristics of the culture. Some characteristics

³⁷C. R. Hoffer, Acceptance of Approved Farming Practices Among Farmers of Dutch Descent, op. cit., p. 34; H. A. Pederson, "Cultural Differences in the Acceptance of Recommended Practices," Rural Sociology, XVI (March, 1951), pp. 37-49; Walter M. Kollmorgen, "The German Settlement in Cullman County, Alabama," and "The German Swiss in Franklin County, Tennessee," U. S. D. A., Washington 1941 and 1940 (processed).

possibly influencing the importance of such differences have been proposed. They offer partial explanation for the variation indicated above and include:

1. The degree of contact a given system has with outside culture
2. The value orientations of the cultural group studied concerning whether:
 - a. Emphasis is placed on security and the past or on success and the future
 - b. Emphasis is placed on individualism or on familism
 - c. Emphasis is placed on material or non-material aspects of life.

Implications for extension teaching. (1) If variations are observed in the numbers of farm practices and/or in the rates of their acceptance by farm people in specific communities, it would also be worthwhile to see whether there are any related differences in characteristics peculiar to their cultural set-ups. Awareness of such relation would make possible the selection of appropriate methods for diffusion of practices and information. (2) The nature of contact of cultural groups with the outside world, especially with the extension service, needs to be closely studied while carrying out educational programs. Knowledge of such contacts makes possible wiser use of such mass media as radio, newspaper, or television. (3) The prevalent value systems of the communities must be identified before pushing the educational programs for the diffusion of farm practices. Approaches taken may then be geared to existing value systems. Also the types of farm practices to be recommended for a community should be based on the value systems of that particular group.

How corn quality was more important than corn quantity to Mexican Indian farmers has already been pointed out. This, appropriate practices may be more easily selected. (5) Methods of disseminating farm information and/or the ways of furnishing farm supplies should be based on the attitudes and interests of local people. In India, seed for green manure crops was purchased by the farmers only when it was made available in their own villages.³⁸ Determinator of local attitudes and interests and their consideration in program planning and conduct make for a readier acceptance by the clientele involved.

The degree of cultural isolation of the systems. Communities which are in close contact with extension workers tend to adopt more farm practices than the "cultural island" communities not enjoying this contact. The differential acceptance of contour farming practices in an Illinois county was attributed to the position of the communities on what Coleman called the folk secular continuum.³⁹ Points on the continuum denote the degree to which systems are isolated from other such systems. This could possibly be explained by one of the basic principles involved in cultural change, that contact and time are essential for the optimum diffusion of an innovation.

³⁸Rudra Datt Singh, "An Introduction of Green Manuring in Rural India," Human Problems in Technological Change, Edward Spicer (Ed.), op. cit., pp. 55-68.

³⁹Lee Coleman, Some Aspects of Human Relations in Soil Conservation, unpublished report of B. A. E. U. S. D. A., Division of Farm Population and Rural Life, November, 1946, as cited by the Sub-Committee on the Diffusion and Adoption of Farm Practices, the Rural Sociological Society, Sociological Research on the Diffusion and Adoption of New Farm Practices, p. 6.

Cultural isolation appears to be related to the participation of farmers in various organizations as discussed under "Participants in extension activities and farm organizations" (see pp. 107-108). However, the latter shows that even within a single cultural group, individuals vary in their adoption of practices depending on their participation, while in the present case, it is being viewed in terms of the overall contact of the community with extension and other organizations or agencies.

Implications for extension teaching. (1) The familiarity of the cultural group with new farm practices is essential for their successful adoption. (2) Thus, the need for contacting every local community seems to be advantageous in extension work. The greater a farmer's familiarity with extension, the greater the possibilities of his adopting a recommended practice. (3) The use of local leaders appears to be of vital importance in extension work if communities are to be brought into closer contact with the extension service. The time of county agents is spread relatively thinly throughout the various communities in which they have educational responsibilities, and their efforts must be supplemented if an effective extension program is to result.

III. DIFFUSION AS THE STUDY OF CULTURAL CHANGE

The Sub-Committee on the Diffusion and Adoption of Farm Practices has identified five major research problems for classifying the studies under this major problem area as already pointed out in Chapter III (see

p. 96). However, in the absence of planned research on all of the research problems, the present discussion will not be based on that classification. An overall discussion on a few salient features of research will be presented under suitable subheadings.

A. Diffusion Process as Related to Diffusion Curve

Diffusion curve. Chapin's studies⁴⁰ conducted earlier in this century and their further refinement by Pemberton⁴¹ have resulted in a theory describing differences of cultural change in relation to the time pattern involved. According to this theory, the curve obtained by plotting the cumulative number of people involved in a cultural change against the time taken for change assumes a wave-like shape resembling an "S" over time. This pattern is popularly known as Chapin's "S Curve" in the field of cultural anthropology. In a simple distribution, the curve appears to follow the pattern of a normal bell-shaped curve. Studies on the rate of diffusion and adoption of farm practices have shown similar patterns and a brief description of the same might be helpful.

Diffusion curve as related to farm practice adoption. Ryan and Gross of Iowa pioneered studies on the rate of adoption of farm practices.⁴² They observed a similar pattern of "S" curve for cumulative and a normal

⁴⁰F. Stuart Chapin, Cultural Change (New York: The Century Company, 1926), pp. 203-210.

⁴¹Earl Pemberton, "The Curve of Cultural Diffusion Rate," American Sociological Review (August 1936), p. 547-548.

⁴²Bryce Ryan and Neal Gross, "The Diffusion of Hybrid Seed Corn in Two Iowa Communities," Rural Sociology, VIII (March 1943), pp. 15-24.

bell-shaped curve for a simple distribution. Further studies have supported these results.⁴³

The diffusion cumulative curve obtained by Wilkening in one of his early studies has been reproduced here in Figure 1 (p. 125) for a better understanding of the concept. From the figure it could be seen that there is an initial slow rate of adoption, then quite a rapid rate, followed by a levelling off of the adoption rate.

Both types of diffusion curves (cumulative and simple distribution) have been used to classify adopter categories on the basis of time adoption.

Categories of adopters. A number of adopter categories have been identified depending on their location on the diffusion curve. A classification system developed by Rogers⁴⁴ of Iowa categorizing five types of adopters has been shown in Figure 2 (p. 126). These five categories of adopters on the basis of their time of adoption are: (1) Innovators, (2) Early Adopters, (3) Early Majority, (4) Late Majority, and (5) Laggards.

Rogers' above-mentioned system is an improvement over an earlier system developed by the Sub-Committee for the Study of Diffusion of Farm Practices.⁴⁵ This Sub-Committee had recognized only four categories of

⁴³Bryce Ryan and Neal Gross, Acceptance and Diffusion of Hybrid Corn Seed in Two Iowa Communities, Agricultural Experiment Station Research Bulletin 372 (Ames, Iowa: Iowa State College, 1950), p. 672; E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., p. 39; Idem, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., p. 13; Dimit, op. cit., p. 48.

⁴⁴E. M. Rogers, "A Suggested Method for Classifying the Adopters of Agricultural Practices," (paper presented at the Rural Sociological Society, September 5, 1956, East Lansing, Michigan).

⁴⁵North Central Regional Publication No. 1, op. cit., p. 10.

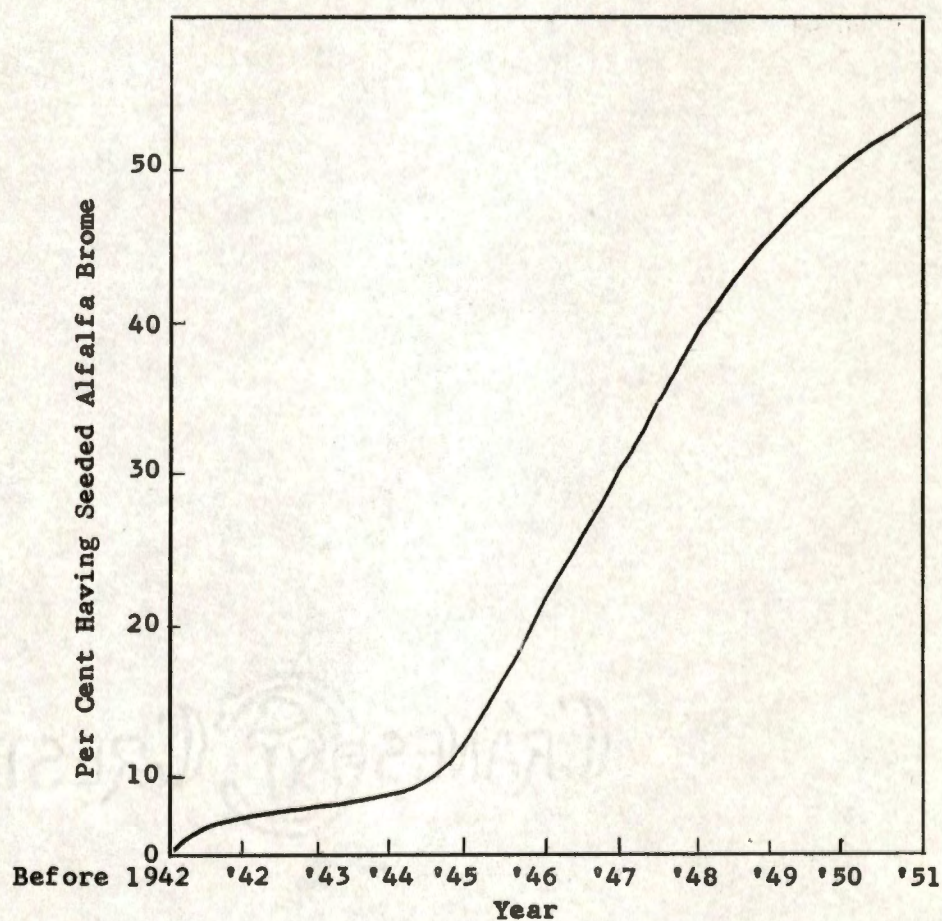


Figure 1. Cumulative Diffusion Curve on Farm Practice Adoption*

*E. A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors: Agricultural Experiment Station Research Bulletin 183 (Madison, Wisconsin: University of Wisconsin, 1953), Figure 2, p. 13.

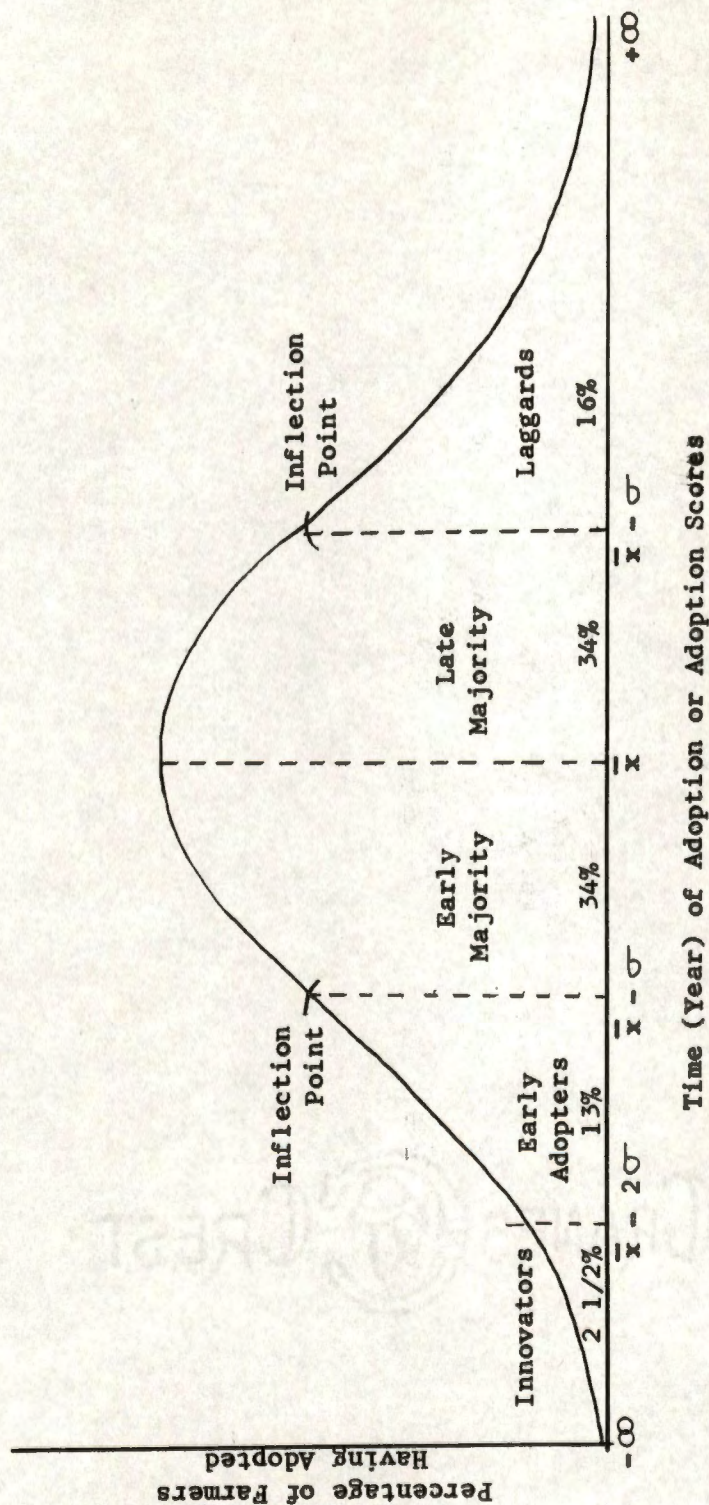


Figure 2. Adopter Categorization on the Basis of Adoption Frequency Distribution*

*E. M. Rogers and G. M. Beal, Reference Group Influence in the Adoption of Agricultural Technology, Journal Paper No. 3573 of the Iowa Agricultural and Home Economics Experiment Station, Ames, Iowa. (Ames, Iowa: Iowa State College, 1958), Figure 8, p. 33.

adopters, namely, "innovators," "community adoption leaders," "local adoption leaders," and "later adopters."

When the above two systems are compared, it is seen that early adopters of Rogers' system are the same as community adoption leaders of the earlier system and early majority are synonymous with local adoption leaders; further, it is observed that Rogers' last two categories, namely, late majority and laggards have arisen from the later adopter class of the earlier system.

Rogers' system appears to be more realistic as it treats the laggards as a separate group. Beal and Bohlen have endorsed Rogers' categorization but have termed laggards as non-adopters.⁴⁶ A brief description of some of the characteristics of these different adopter categories is essential to understand the role played by them in farm practice adoption.

Characteristics of adopters

Innovators. These are the first to adopt new ideas. Characteristics of innovators as listed by two sources are given below.

1. As listed by the Sub-Committee for the Study of Diffusion, innovators:
 - a. Do independent thinking
 - b. Are experimenters
 - c. Are not the persons to go to for advice on farming

⁴⁶George M. Beal and Joe M. Bohlen, The Diffusion Process, Special Report No. 18 (Ames, Iowa: Agricultural Extension Service, Iowa State College, 1957), pp. 5-6.

- d. Are not necessarily adoption leaders
 - e. May not be present in every community.⁴⁷
2. As listed by Beal and Bohlen, innovators:
- a. Have large farms
 - b. Enjoy high status
 - c. Are active in community
 - d. Have power
 - e. Have extra community contacts
 - f. Are not named as source of information by other farmers
 - g. Have large amount of risk capital
 - h. Are respected and have prestige.⁴⁸

Both of the above quoted sources have clarified that innovators are not necessarily community leaders. However, Beal and Bohlen's characterization appears to contradict this statement. This is because some of the characteristics listed by them, namely, the first four in their list, seem to be those of leaders and farmers sought as sources of farm information rather than those of innovators.

A few more important characteristics of innovators like age, education and aspiration to higher status, as identified by other research studies⁴⁹ have not been considered by the two above sources.

⁴⁷North Central Regional Publication No. 1 of the Agricultural Extension Services, op. cit., p. 9.

⁴⁸Beal and Bohlen, op. cit., p. 5.

⁴⁹Bryce Ryan and Neal Gross, Acceptance and Diffusion of Hybrid Corn Seed in Two Iowa Communities, op. cit., p. 705; E. A. Wilkening, "Process of Acceptance of Technological Innovations," Rural Sociology, Bertrand (Ed.), 1958, p. 394.

In view of the foregoing, the following categorization of innovators appears more realistic than either of the two mentioned earlier.

Innovators, then, are generally:

1. Independent in thinking
2. Experimenters
3. Those having a relatively wide range of contacts
4. Not necessarily adoption leaders
5. Likely to be of high socio-economic status or at least aspirants for the same
6. Not likely to be bound by the locality group as leaders or as followers
7. Likely to be younger in age
8. Of risk bearing temperament
9. Better educated.

Early adopters or community adoption leaders. These are not the very first to try new practices or ideas, but are among the first to use the same. Early adopters are:

1. Quick in their ability to use tried and proven ideas
2. Equal in age as compared to innovators
3. High in educational level as compared to the average
4. Active participants in community activities
5. Those having keen reading habits
6. Commercial in their farming.

Early majority or local adoption leaders. These people are also referred to as informal leaders as the majority looks to them for lead in farm practice adoption. The number of practices adopted by farmers increases rapidly after the early majority have set the pace. However, the early majority are not necessarily the innovators or early adopters. These people are characterized by:

1. Increased information contact
2. Similar social and personal characteristics as with the average group
3. High morality and sound judgment
4. More limited resources than early adopters
5. Action established leadership
6. Their position as important links in the chain of communication.⁵⁰

Late majority or later adopters. These are next on the time scale of farm practice adoption. They are generally older than early adopters and form a major part of the community organizational membership. They have been observed to:

1. Have lower educational level
2. Be weaker participants in community affairs
3. Have poorer reading habits.⁵¹

⁵⁰North Central Regional Publication No. 1 of the Agricultural Extension Service, op. cit., pp. 9-10; Beal and Bohlen, op. cit., pp. 5-6.

⁵¹Ibid.

Laggards. These are the last on the time scale of farm practice adoption. They are also known as non-adopters. A large proportion of laggards belongs to older age groups in a community. The common characteristics of non-adopters are that they:

1. Have least education
2. Enlist minimum participation in various organizations and governmental programs
3. Belong to low economic level
4. Possess very limited appreciation of the value of science in farming
5. Set poor goals for standard level of production
6. Show insufficient interest in farming.⁵²

A brief comparison of the innovator category of adopters as stated above, and the categories of acceptors as identified by Barnett (see Chapter II, pp.64-66) may help one to better comprehend the relationship between this aspect of the theory of farm practice adoption and its application to real life.

The four categories of acceptors recognized by Barnett as already stated are (1) the dissidents, (2) the indifferent, (3) the disaffected, and (4) the resentful. According to these categories, the earlier people to adopt farm practices possess one or many of the following characteristics:

⁵²Ibid.

1. They are more courageous and independent
2. They do not get complete satisfaction from old ideas
3. They are usually young in age
4. They have frequently acquired distaste after being active participants in the old practices
5. They seek opportunity to accept something new.

These above stated characteristics based on the generally accepted principles of adoption are also observed in the innovators as verified by research studies discussed in earlier paragraphs.

Early adopters and early majority perform responsibilities as advocates of change rather than as innovators themselves. The theoretical relationships involved have been previously discussed under the heading "leadership role" (see pp. 108-111).

The last two categories of adopters - late majority and laggards have almost the opposite characteristics from those of the innovators. So, these characteristics are also seen to verify and be in agreement with the generally accepted principles theorized by Barnett and other cultural anthropologists.

Besides identifying the categories of adopters on the time scale, the diffusion studies on the farm practice adoption have resulted in the following contributions.

1. The development of a clear concept of "diffusion" in relation to farm practice adoption. Diffusion is now considered as a dual process involving the dissemination of information and the spread of usage. A detailed discussion on this concept has already been presented in Chapter II (see pp. 48-49).

2. The identification of stages involved in the process of diffusion. It was shown by the studies that the diffusion of use passes through an experimental period and a trial period to full acceptance.⁵³

A brief description of the different stages involved in the diffusion process is presented below.

Stages in the process of diffusion

1. Awareness stage. At this stage, the potential adopter learns of the existence of the idea or practice but has little knowledge about it.

2. Interest stage. During this stage, the potential adopter acquires general information about the idea and develops interest. He gets ready to consider its general merits.

3. Evaluation stage. The individual, in this stage, makes mental application of the idea and weighs its merits for his own situation. He secures more information about the idea and determines to give it a trial.

4. Trial stage. The potential acceptor tests the practice usually on a small scale during this stage. He is in need of information on how to apply this practice.

5. Adoption stage. This is the final stage when the practice is adopted leading to further use. The acceptor's satisfaction from the use of the practice determines the success of the adoption.⁵⁴

⁵³Sub-Committee on the Diffusion and Adoption of Farm Practices, op. cit., p. 8.

⁵⁴Ibid., pp. 3-4.

Implications for extension teaching

1. The extension worker needs to understand the existence of the above stages in the diffusion process because there are steps involved in extension teaching which parallel these learning stages. These steps include: (a) getting the attention of the potential acceptor, (b) stimulating his interest, (c) creating his desire for information, (d) convincing the potential acceptor that he should act, and (e) getting his action.⁵⁵ The end result of successful completion of these five steps is satisfaction.

2. The understanding of a clear concept of extension teaching is a must for every extension worker. Since extension is education, and the work of the extension worker is teaching, then it follows that personnel should understand and be able to apply effective teaching-learning procedures.

3. The knowledge about the appropriate methods needed in these various stages of the diffusion process is an essential prerequisite for successful extension work. Some extension teaching methods are more appropriate for use in one stage than another, and training in the wise selection of proper methods facilitates rapid passage of prospective practice adoption from one stage to the next.

4. Mere knowledge of the existence of the various diffusion stages is not an end in itself.

a. The extension worker needs to know where the different communities and people are in the diffusion process. Use of occasional

⁵⁵Wilson and Gallup, op. cit., pp. 7-8.

check lists involving attitude questions, knowledge questions, and others may serve as useful tools to identify the people in their various diffusion stages. During their visits to farms and on other occasions when they work with the people, extension workers need to keep their eyes and ears wide open so as to identify these stages.

b. Maintenance of a separate file by each extension worker in which to insert the above mentioned information might increase the effectiveness of extension work. This will help the agent in preparing a good plan of work. When transfer of charge takes place, this file might serve as a very useful guideline for the new extension worker.

The above information should form the basis for planning farm visits and for selection and use of other extension methods.

5. Likewise, mere knowledge of the existence of different types of adopters will not solve the problem of encouraging farm practice acceptance. Efforts will be necessary to identify people belonging to the various adopter categories in each community. At least a few individuals in the innovator category ought to be recognized and worked with before educational activities for creating awareness in others are commenced. This is necessary because by the time the clientele is made aware of the advantages of a new practice, the innovators would then have adopted the same. In the absence of special efforts to identify them, innovators will take a longer time to adopt a given practice, thus increasing the time interval required for completion of the diffusion process.

6. It might be a waste of energy to devote unnecessary attention to activities directed toward "late majority" and "laggards" during the early stages of diffusion.

7. After the innovators have completed adoption of a new practice, efforts need to be directed to work with "early adopters" and "early majority." Such changing of focus permits agents to keep up with the diffusion process and accelerate it.

8. As the stages advance, less and less attention may be paid to work with the "late majority" and "laggards" in efforts to create awareness and interest; farmers in these categories are influenced more and more by indirect efforts during these stages. However, the primary job of extension workers is to assist these people in coping with difficulties like lack of credit or lack of skill which might hinder their early acceptance. Thus, proper allocation of extension dollars and personnel should afford greater efficiency in the diffusion process.

B. Rate and Process of Diffusion of Different Types of Farm Practices

A few relatively important research findings on the rate and process of diffusion of different types of farm practices include the following:

1. The simplicity of a new practice or idea probably accounts for the quicker acceptance of the same. (a) The practice of using hybrid seed corn has been accepted more quickly than the practice of either strip cropping or crop rotation.⁵⁶ Acceptance of alfalfa-brome seeding

⁵⁶E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., pp. 38-39.

practices increased more rapidly than that of putting in grass silage.⁵⁷

2. Familiarity with an improved practice or idea generally increases the rate of diffusion of other similar practices. "Once hybrid seed corn was accepted, other seeds which fitted this pattern were adopted much more rapidly."⁵⁸

3. The seriousness of the need the practice meets often determines its rate of diffusion.

For example, Wilkening found in a North Carolina study that insect and disease control measures were adopted more quickly by selected farmers than were hybrid corn or improved pasture practices.⁵⁹

Logical reasons for the above findings should not be difficult to understand. The simplicity of a practice may be due to its low cost, less complicated technique, or other factors. The familiarity with an improved practice ensures greater security and makes it more meaningful to a potential acceptor. The felt need serves as a strong motivating factor. The characteristics of new practices and ideas as described by Barnett (see pp. 58-63) should serve as adequate explanation in support of these and similar findings.

Implications for extension teaching. (1) When the adoption of practices involving greater cost is to be encouraged, educational

⁵⁷Idem, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., p. 3.

⁵⁸Beal and Bohlen, op. cit., p. 3.

⁵⁹E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., p. 37.

programs to acquaint the clientele with ways and means of obtaining credit should be taken up simultaneously to make adoption of such practices possible. (2) Liberal use of method demonstrations is indicated when recommended practices involve complexities. Demonstration gives farmers opportunity to learn by seeing and doing. (3) Extension workers need to be aware that fewer efforts are required to encourage the adoption of practices which are compatible. This then should help in allocating time for conducting different meaningful activities. (4) Before starting educational activities, it might be worthwhile to consider whether the recommended practices really serve the felt needs of the people or not. If the negative is true, efforts spent on such activities might be wasted.

IV. DIFFUSION AS A PROBLEM OF COMMUNICATION OF INFORMATION

The Sub-Committee on the Diffusion and Adoption of Farm Practices has stated that much variation is to be observed in the types of studies conducted in the above named area, and, hence, it is difficult to generalize even tentatively.⁶⁰ Although a large number of well planned studies have been conducted since then, it would be difficult to discuss the findings under the major research headings suggested by the Sub-Committee. Consequently, the present discussion will be based on an organization other than that proposed by the Sub-Committee. The reference groups or

⁶⁰Sub-Committee on the Diffusion and Adoption of Farm Practices, the Rural Sociological Society, op. cit., p. 11.

the sources of farm information have been classified as "formal sources" and "informal sources," "personal sources" and "impersonal sources," and, of course, in other ways as well. Entering into a discussion of the same may not serve the purpose of this thesis. In the absence of generally accepted system of classification of the sources of farm information, only a few broad categories will be discussed without effort to classify them.

The four broad categories of farm information sources generally agreed upon by a number of authorities are: (1) Agricultural agencies or governmental agencies, (2) Other farmers or neighbors and friends, (3) Mass media, and (4) Commercial sources or salesmen and dealers.

The role played by these sources will be dealt with separately.

A. Agricultural Agencies or Governmental Agencies

This reference group includes: (1) Extension agents, (2) Vocational agricultural teachers, (3) Staff members of college of agriculture, and (4) Soil Conservation Service personnel.

Most of the research studies conducted to date have focussed their attention on the role of extension agents and very limited evidence is available about the part played by other agencies in the problem of communication of information. Hence, only the role of extension agents as an information source will be discussed.

Extension agents. Studies of the role of the extension agent in diffusion as a problem of communication of information have uncovered the following results:

1. The extent to which farmers make contacts with extension agents largely determines the consequent adoption of recommended farm practices.⁶¹
2. Larger farmers generally make greater use of extension agents.⁶²
3. Low income farmers make comparatively little direct use of the services of extension agents.⁶³
4. Early adopters have more contacts with extension workers.⁶⁴
5. County agents constitute the most frequently used source of help for farmers' learning about the techniques of putting new practices into operation. This role is considered to be the agents' most important one.⁶⁵
6. The second most important role of extension workers is that of helping farmers decide whether to try out new experiences or not.⁶⁶

⁶¹Wilson and Gallup, op. cit., p. 24.

⁶²H. F. Lionberger, Information Seeking Habits and Characteristics of Farm Operators, Agricultural Experiment Station Research Bulletin 581 (Columbia, Missouri: University of Missouri, 1955), p. 22.

⁶³Idem, Low Income Farmers in Good Farming Areas, Agricultural Experiment Station Bulletin 668 (Columbia, Missouri: University of Missouri, 1956), p. 13.

⁶⁴E. M. Rogers and G. M. Beal, Reference Group Influences on the Adoption of Agricultural Technology, Agricultural Experiment Station Journal Paper 3373 (Ames, Iowa: Iowa State College, 1958), p. 77.

⁶⁵E. A. Wilkening, "Roles of Communicating Agents in Technological Change in Agriculture," Social Forces, XXXIV (May 1956), p. 465.

⁶⁶Ibid.

7. Agents are next in importance to mass media in informing farmers of new ideas in agriculture.⁶⁷

Implications for extension teaching. (1) Planning farm and community visits by extension workers merely to inform clientele of information should be avoided. This is because other sources and methods perform this function more satisfactorily and more effectively. However, innovators may need to be acquainted with information by the agents themselves. (2) Extension workers need to help farm people in putting change into effect by assisting them to identify and solve their problems. The teaching of techniques involved in new practices requires two-way communication and actual demonstration and practice with suitable materials and equipment. Extension workers with professional training are best equipped to perform this role. Method and result demonstrations are the most useful methods for this work. As this work involves large amounts of time, extension workers should multiply themselves by training local lay leaders. (3) Consideration of ways and means for assisting farmers with lower incomes, less formal education, and smaller farms, either by direct contact or through local lay leaders, is important since they are relatively low on the scale of extension contact. This is because low income farmers are inclined to accept new practices only after trial by and advice from close associates and friends. (4) Information furnished by extension agents to farmers should not be a repetition of the same as already informed by mass media. It should be more specific, precise

⁶⁷ Ibid.

and a detailed one so as to supplement the information received through mass media. This helps to develop interest in the minds of farmers.

B. Other Farmers

These are mostly neighbors and friends. Research points out the following:

1. Neighbors and friends are the main source of help to farmers in the decision making stage.⁶⁸
2. Their number is generally very small in communities.⁶⁹
3. Farmers outside the neighborhood are given more frequently as the source of information by early adopters while the late adopters more frequently use the services of neighbors and friends in getting new knowledge.⁷⁰
4. The second most important role of the other farmer groups is to assist so-called potential acceptors in deciding when and how to put new practices into effect.⁷¹

⁶⁸E. A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., p. 21.

⁶⁹H. F. Lionberger, Information Seeking Habits and Characteristics of Farm Operators, op. cit., p. 50.

⁷⁰E. A. Wilkening, Adoption of Improved Farm Practices as Related to Family Factors, op. cit., pp. 20-21.

⁷¹Idem, Roles of Communicating Agents in Technological Change in Agriculture, op. cit., p. 364.

5. The role of other farmers in informing potential acceptors of new information appears not to be of major importance.⁷²

The most important point to remember in this connections is that new practices are only accepted when they are considered with respect to how they affect one's family and relationships with others.

Wilkening has explained the important role played by other farmers by stating,

Awareness of the general soundness of innovation may be obtained from an impersonal source, but its suitability for the potential adopter and the effect upon his personal relationships is most likely to be determined by personal communication with persons who are aware of his situation and who are involved in these relationships.⁷³

Implications for extension teaching. Some of the implications have already been stated in the discussion on the role of local leaders. Only a selected few particularly concerned with the communication problem will now be stated. (1) Extension workers need to work closely with the neighbors and friends of potential adopters. As the success or failure of farm practice adoption in a community generally depends on the success or failure of trials made by neighbors and friends, utmost care and vigilance should be taken to assure that correct information is supplied to such key people. (2) The news of a successful result demonstration usually spreads rapidly from farm to farm. Hence, extension workers should sell ideas to the neighbors and friends of potential acceptors so as to encourage them to become demonstrators or co-operators. (3) Research indicates that neighbors and friends should be given leadership

⁷²Ibid.

⁷³Ibid., p. 367.

training with particular emphasis on the effective conduct of method demonstrations. Training of such neighbors and friends will develop their abilities to make wise decisions, which abilities, in turn, are needed to assist the potential acceptor in properly evaluating and deciding the worth of each of the new practices, and when and how to put each one into effect. (4) Those neighbors and friends who have been identified as key people should be checked on the mailing list and their assistance sought. Furnishing them with up-to-date information helps to develop their managerial ability. Further development of their leadership ability is a rightful part of extension's responsibility.

C. Mass Media

This category includes but is not limited to radio, television, newspapers, and magazines. Those media do not usually include publications issued by governmental agencies which individuals obtain by request.⁷⁴ Four important findings from research on the role of mass media are given below.

1. Mass media are frequent sources for farmers' first hearing about new farm practices.⁷⁵ This can best be understood considering the popularity of various mass media as sources of information needed in day to day life.

⁷⁴ Beal and Bohlen, op. cit., p. 3.

⁷⁵ Extension Service in Vermont, op. cit., p. 2; E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., p. 60; Rogers and Beal, op. cit., p. 77; National Plant Food Institute, op. cit.

2. Mass media lose their importance in the later stages of the diffusion process.⁷⁶ One of the main reasons is that mass media provide too general a type of information and potential adopters frequently do not consider them as particularly reliable sources of information.

3. In areas of lower educational level and income, and with a level of low participation, mass media, especially farm magazines, are not so widely recognized as primary sources of new farm information.⁷⁷

4. The "first" source of information obtained through mass media may not necessarily be the contact for diffusion of most of the information.⁷⁸

The possible reason for this is the same as that given to the second finding, namely the question of reliability of the source.

Implications for extension teaching. (1) Mass media perform two principal types of functions - disseminating information to a wider audience and selling advertising. Because of this, they include techniques for widespread and timely diffusion of information. This explains their efficient performance of the role of providing initial awareness of new farm practices. They are also the most economical channels through which farm information can be disseminated. So, liberal use of these channels

⁷⁶Beal and Bohlen, loc. cit.

⁷⁷H. F. Lionberger, Low Income Farmers in Good Farming Areas, op. cit., p. 9; E. A. Wilkening, "Communication and Technological Change in Rural Society, op. cit., p. 379.

⁷⁸E. A. Wilkening, Acceptance of Improved Farm Practices in Three Coastal Plain Counties, op. cit., p. 17.

should apparently be made during the earlier stages of the diffusion process.

Farm papers and farm magazines possibly need to be utilized the most as they appear to be the most popular among the mass media.

2. As mass media supply only the "first" information and not the "most" information, it is not likely that extension workers can depend entirely on mass media for the dissemination of new farm information,

So, other sources are also needed to supply "most" of the information. A judicious use of a combination of methods like discussions, demonstrations and direct contacts should enable the extension worker to arouse the desire of farmers after the latter have developed the necessary awareness and interest.

3. After the initial stages of the diffusion process, the value of using mass media is questionable. During later stages, mass media should be utilized for purposes other than giving information about given practices. To be more explicit they should be employed for informing farmers of the times of visits of county agents, days of demonstrations, and similar general information with broad application.

4. Limitations of mass media, especially of printed matter, should be clearly understood while working with the less well educated and lower income families. Use of mass media like radio, television and film shows would be more profitable with such groups as those mentioned above because they appeal to the sight and hearing senses of people in such strata.

D. Commercial Sources - Salesmen and Dealers

Commercial sources perform the function of buying and selling materials and equipment and also provide professional services and information. Their contact with farmers is both personal and impersonal. The same is incidental to buying, selling and special services. Two-way communication is involved. The influence of commercial sources is limited to those innovations which require the use of materials and equipment. Some of the research findings in this connection are as follows:

1. When credit was given to commercial firms for the advertising of new products over the radio, in newspapers and elsewhere, commercial firms were found to rate higher in the initial awareness stage as sources of first information than others.⁷⁹
2. As a direct channel, the commercial dealers are more influential in the trial and adoption stages, but they rank below neighbors and friends and extension agents.⁸⁰
3. Farmers often discuss their needs of materials and equipment with local dealers before making their purchases.⁸¹

Implications for extension teaching. (1) Commercial sources expedite the diffusion of farm information which involves the use of

⁷⁹Bryce Ryan and Neal Gross, Acceptance and Diffusion of Hybrid Corn in Two Iowa Communities, op. cit., p. 684; E. A. Wilkening, "Role of Communicating Agents in Technological Change in Agriculture, op. cit., p. 366.

⁸⁰Ibid.; Beal and Bohlen, op. cit., p. 3.

⁸¹National Plant Food Institute, op. cit.

equipment they sell or otherwise deal in. This has two aspects. The first is to utilize this information source so that an early awareness can be created. The second aspect is to guard against certain drawbacks. Farmers may feel that the information supplied by the commercial sources is tempered by the business interests and may doubt the credibility of the information. So efforts are necessary on the part of extension workers to work with the commercial dealers so that the latter may be in a better position to supply correct information. It is equally necessary to inform community organizations, community adoption leaders and informal leaders about the reliability of the information furnished by commercial dealers if appropriate use is to be made of such sources.

(2) Commercial dealers should be included on the mailing lists of county extension offices and agricultural colleges (and, when appropriate, in program planning). This would enable agents to better supply up-to-date information to commercial dealers and vice versa.

(3) Results of successful demonstrations may be made available to commercial dealers so that they will make use of them in selling materials and passing out valid information. This will help to clarify possible doubts farm people may have concerning risk involved.

(4) Commercial dealers should be invited to attend method and result demonstration meetings. This would increase the rapport among extension workers, farm people and commercial dealers, which relationship facilitates successful communications of information by commercial sources of a later time. This would also help commercial dealers to better understand the correct ways of diffusing information in such a way

that it will be more readily acceptable to farmers.

The foregoing discussion under four major problem areas has brought out a large number of research findings, together with certain of their implications for extension teaching. An outline summary will now be made to focus the attention of the reader on the salient features of the discussion and to provide possible opportunities for further generalizations, extended research, and application to appropriate extension teaching situations.

V. SUMMARY

The summary will be presented in a tabular form in hope that it may serve as a useful guidebook for those seeking such assistance in planning. The three column headings include: (1) Major research finding, (2) Possible implications for extension teaching, (3) Extension method suggested. The third heading will not be used in cases where such considerations do not apply.

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
A. Differential Acceptance of Farm Practices as a Function of Status and Role of Farm Operators		
1. <u>Status</u>		
a. <u>Age of the Farmer</u>		
(1) Farmers in the age group 30-45 adopt a greater number of farm practices than those in	(1) When demonstrators are being selected, farmers in the age group 30-45 appear to be better choices than	(1) Farm and home visits. (2) Result demon- strations.

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
younger or older age groups.	those in other groups. (2) Special educational efforts are needed for the age groups below and above 30-45 according to their special characteristics. (3) Efforts to teach young and adult farmers alike to solve their real problems such as those connected with acquisition of necessary capital or land are appealing and necessary.	(3) Circular letters. (4) Meetings involving motion pictures, charts and other visual aids

b. Education of the Farmer

(1) Farmers having relatively higher formal education tend to adopt more farm practices than those having less formal education.	(1) Reading material to be used in extension needs to be written at the sixth to seventh grade level of education. (2) Increased direct contacts are necessary with farmers having had little formal education.	(1) Bulletins (2) Leaflets (3) News articles (4) Farm and home visits.
(2) Most of the farmers quit from schools before entering high school grade.		

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
c. <u>Farm Ownership</u>		
(1) When a new practice promises an immediate returns, owners and tenants may not show much difference in its adoption.	(1) If tenants lag behind in the acceptance of a practice promising an immediate return, the same is due to factors other than the ownership.	(1) Result demonstrations (2) Test demonstrations (3) Farm and home visits
(2) Where an improved practice involves continued efforts overtime, and/or when an immediate return from a practice is not expected, owners tend to adopt a greater number farm practices than non-owners.	(2) Tenant farmers may be somewhat reluctant to serve as co-operators or demonstrators than owners. (3) Where an improved practice involves continued efforts over time and/or when an immediate return from a practice is not expected, extension work with tenants requires relatively greater simultaneous educational efforts to assist them in solving their related problems than is usually true with owners.	(4) Personal letters

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
<u>d. Size of Farm</u>		
(1) Large farmers usually adopt a greater number of farm practices than do small farmers.	(1) Small farmers usually find it more difficult to participate in extension activities than do larger farmers. (2) Educational activities should be adjusted to include consideration of their convenience. (3) Because of an adoption lag, emphasis on a long range program to suit the resources and particular needs of small farmers is desirable (not to the exclusion of large or intermediate level farmers).	(1) Farm and home visits (2) Lectures and general meetings (3) Leader training meetings (4) Program planning meetings

e. Socio-Economic Status of the Farmer

(1) Farmers high on the economic scale are likely to adopt more farm practices.	(1) Extension workers should identify the socio-economic status of the farmers. (2) Intensive efforts are	(1) Farm and home visits (2) Office calls (3) Telephone calls
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Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
	needed to reach and teach those farmers who are found to be relatively low on the socio-economic scale.	(4) Meetings.

2. Role of Farmers

a. Participation in Extension Activities and Other Farm Organizations

(1) Farmers participating in extension activities and other farm organizations are more likely to adopt a greater number of farm practices than non-participants.	(1) Extension workers need to work more closely with existing farm organizations. (2) Activities like 4-H, young farmers organizations, and adult farmers organizations should be developed intensively. (3) Wider participation of farmers in program planning activities needs to be encouraged.	(1) Lecture meetings (2) Leader training (3) Conferences and discussion meetings (4) Circular letters (5) Result and method demonstrations (6) Program planning meetings
(2) Farmers who have sons or other members of the family in 4-H or in vocational agriculture in high school are likely to adopt a greater number of farm practices.		

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
b. <u>Leadership in Extension and Other Activities</u>		
(1) Leadership in organized community was not found to be related to the adoption of farm practices.	(1) Community leaders may be primarily thought of as local resource personnel.	(1) Farm and home visits
(2) Community adoption leaders and/or informal leaders are not necessarily innovators.	(2) Early special efforts made to sell new ideas to community adoption leaders and informal leaders increase the effectiveness of extension programs.	(2) Leader training meetings (3) Personal letters (4) Result demonstrations
c. <u>Family Factors as Related to Extension Co-operation</u>		
(1) Rationality score (see page 112) of farmers is a better predictor of adoption than contact with extension.	(1) Special educational efforts are needed to increase the rationality scores of farm people by helping them learn how to make wise decisions.	(1) Farm and home visits (2) Office calls (3) Personal letters (4) Lectures (5) Conferences and discussion meetings
(2) High value placed on education for children may possibly be associated with the adoption of farm practices.	(2) Advantages of farm practices should be related to the possibility of attaining farmers' goals of education for children. (3) Practices requiring high	

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
(3) High value placed on owning debt free property retards the adoption of practices.	capital investment needs to be pushed cautiously with farmers who value debt-free property.	

d. The Influence of Neighbors, Friends and Relatives

(1) Farm practice adoption rates will vary in different neighborhoods of the same community.	(1) Extension workers need to identify neighborhoods, groups and/or kinships which are in operation in local communities as a first step to getting acceptance of a practice.	(1) Farm and home visits
(2) Generally, the degree of a farmer's dependence on neighbors, friends and relatives either increases or retards his farm practice adoption.	(2) Neighborhood leaders or informal leaders and other influential people ought to be recognized and reached first.	(2) Personal letters
(3) Informal groups influence farm practice adoption of community people.	(3) Attention should be paid to each neighborhood in educational programs if optimum diffusion is to occur.	(3) Leader training meetings
		(4) Result demonstrations
		(5) Conferences and discussion meetings
		(6) News stories

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
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B. The Differential Acceptance of Farm Practices as a Function of
Socio-Cultural Systems

1. The Type and Amount of Leadership in the Systems

(a) The degree to which local lay leadership is involved in extension work determines to a great extent the success of the extension work.	(a) In areas where local leadership is not functioning, a primary concern of extension personnel is to identify and train local lay leadership.	(a) Farm and home visits (b) Conferences and discussion meetings (c) Leader training meetings
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2. The Type and Degree of Social Stratification in the Systems

(a) Neighborhoods with high social stratification are quite likely to lag behind in their adoption of farm practices.	(a) Educational programs should be designed which are suitable for use in particular situations with people in various strata.	(a) Farm and home visits (b) Written materials (c) Movies and slides (d) Method and result demonstrations
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3. The Dominant Value Orientation or the Basic Themes of the Systems

(a) People in different culture systems vary in their acceptance of approved practices. These differences may be due to:	(a) Differences if any existing in the cultural value systems of communities and/or neighborhoods should be recognized. (b) The nature of contact	(a) Farm and home visits (b) Office calls (c) Personal letters (d) Lecture meetings (e) Conferences and
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Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
(1) The nature of contact the cultural group has with the outside world.	of cultural groups with the outside world needs to be closely studied and information channelled accordingly.	discussion meetings
(2) Emphasis placed on security and the past or on success and the future.	(c) Types of farm practices to be recommended for a community should be compatible with and geared to the value systems of that particular culture group.	
(3) Emphasis placed on individualism or familism.	(d) Methods of diffusion of farm information (and/or the ways of furnishing farm supplies in India) should be based on the attitudes and interests of local people.	
(4) Emphasis placed on material or non-material aspects of life.		

4. The Degree of Cultural Isolation of the Systems

(a) Communities which are in close contact with extension workers tend to adopt greater numbers of farm practices.	(a) It is essential that the cultural group be familiar with new farm practices if they are to be successfully adopted. Thus, there is need for contacting every	(a) Farm and home visits (b) Personal letters (c) Circular letters (d) Mass media (e) Lectures
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Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
	local community.	(f) Conferences and
	(b) The assistance of	discussion meetings
	local lay leadership	(g) Fairs
	should always be used to	
	contact the people.	

C. Diffusion as the Study of Cultural Change

1. Stages in the Process of Diffusion

(a) Diffusion is now considered as a dual process involving the dissemination of information and the spread of usage.	(a) Extension workers need to understand the existence of the five stages in the diffusion process because there are steps involved in extension teaching which parallel these learning stages. These steps of teaching include:	All methods involved, depending on the stage attained,
(b) Practice adoption passes through an experimental stage and a trial period to full acceptance. Five stages in the process of diffusion are identified:	(1) Getting the attention of the potential acceptor.	
(1) Awareness	(2) Stimulating his interest.	
(2) Interest	(3) Creating his desire for information.	
	(4) Convincing him to act.	

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
(3) Evaluation	(5) Getting his action.	
(4) Trial	(b) Every extension	
(5) Adoption	worker needs to have a clear concept of what constitutes extension teaching. (c) Knowledge about the appropriate methods used in the various stages of diffusion is needed. (d) Extension workers should learn to utilize various ways for identifying people in the different stages of the diffusion process. (e) Separate files maintained in each extension office for the families in each county should indicate the diffusion stages attained by each family. (f) This information needs to be used in planning farm visits, for the selection of other methods at the time of annual planning.	

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
2. <u>Categories of Adopters</u>		
(a) The farm practice adoption curve on the number of people accepting a practice over time follows the pattern of "Chapin's S curve".	(a) Extension workers need to be familiar with the characteristics of people belonging to various adopter categories.	(a) Farm and home visits
(b) Different categories of adopters can be identified according to their varying location on the diffusion curve.	(b) Efforts are needed to identify people belonging to the various adopter classes.	(b) Office calls
(c) The five categories of adopters identified include:	(c) In the early stages of the diffusion process more direct educational efforts with innovators, and later with early adopter groups and early majority groups should be increased: Such changing of focus permits agents to keep up with the diffusion process and accelerate it.	(c) Personal letters
(1) Innovators		(d) Conferences and discussion meetings
(2) Early adopters or community adoption leaders		(e) Result demonstrations
(3) Early majority or informal leaders	(d) As the diffusion stages advance, less and less	(f) Method demonstrations

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
(4) Late majority	attention be paid to work	
(5) Non-adopters or laggards	with the majority as it would be influenced more	
(d) Characteristics of people belonging to the various adopter categories have been recognized.	and more by indirect efforts. This limited attention, however should be directed toward assisting them to solve related problems rather than to simple creation of awareness, interest or evaluation.	

3. Rate and Process of Diffusion of Different Types of Farm Practices

(a) The simplicity of a new practice or idea probably accounts for its quicker acceptance.	(a) When improved practices involving greater costs are to be introduced, simultaneous efforts to assist farm people in obtaining credit and providing other facilities are necessary.	(a) Farm and home visits (b) Leaflets (c) Method demonstrations (d) Result demonstrations
(b) Familiarity with an improved practice or idea generally increases the rate of diffusion of other similar practices.	(b) When recommended practices involve complexities, potential acceptors need to be trained in acquiring	(e) Program planning meetings (f) Discussion groups

Major Research Finding	Possible Implications for Extension Teaching	Extension Method Suggested
(c) A practice will be accepted relatively early if it is concerned with solving the felt needs of the people.	the necessary skill. (c) Before starting educational activities, it might be worthwhile to enlist the aid of local people to help decide whether the recommended practices really serve the felt needs of the people or not. If the negative is true, efforts spent on such activities might clearly be viewed as wasted.	

D. Diffusion as a Problem of Communication of Information

1. Extension Agents

Major Research Finding	Possible Implications for Extension Teaching
(a) Contact with extension agents largely determines the consequent adoption of recommended practices.	(a) Planning farm and home visits simply to inform farmers of new practices should be avoided except in the case of innovators.
(b) Larger farmers generally make greater use of extension agents.	(b) Extension workers are best

Major Research Finding	Possible Implications for Extension Teaching
(c) The most important role of county agents is to inform people about techniques needed for putting new practices into operation.	equipped to teach techniques involved in new practices. Method and result demonstrations should serve as appropriate methods for teaching things necessary for this job of teaching skills.
(d) The second most important role of extension workers is to help farmers in deciding whether to try out new experiences or not.	(c) Local lay leadership should be trained and utilized to multiply the efforts of extension workers.
(e) Extension agents are next in importance to mass media in informing farmers of new ideas in agriculture.	(d) Information furnished by extension agents should supplement the information already received by farmers through mass media.

2. Other Farmers or Neighbors and Friends

(a) Their major role is to act as sources of help to farmers in the decision making process.	(a) Extension workers should act with other farmers more closely.
(b) Their second most important role is to assist potential acceptors in deciding when and how to put new practices into effect.	(b) Other key farmers need to be selected as demonstrators.
(c) Their role is difficult to be substituted for.	(c) Extension agents are likely to be benefitted by training other farmers, especially when they use method demonstrations. (d) Other farmers ought to be

Major Research Finding	Possible Implications for Extension Teaching
	enlisted on the mailing lists of the county offices and agricultural colleges.
3. <u>Mass Media</u> (a) Such methods are frequent sources reported for farmers' first word of new farm practices. (b) They lose their importance in the later stages of the diffusion process. (c) They often are not recognized as primary sources of new information by farmers having lower educational levels and incomes. (d) They do not furnish the "most" of the information.	(a) Liberal use of mass media as sources of new information will be economic both in respect to time and money. (b) Extension workers need to follow up and supplement the information supplied by mass media especially to furnish the "most" of the information. (c) Proper combinations of methods like discussions, demonstrations and direct contacts should be selected. (d) Limitations of mass media should be considered while working with low income farmers and appropriate supplemental methods used.

Major Research Finding	Possible Implications for Extension Teaching
<u>4. Commercial Sources - Salesmen and Dealers</u>	
(a) They often indirectly contribute in the initial awareness stage as sources of first information. (b) As a direct channel, they are more influential in the trial and adoption stages, but rank below neighbors and friends and extension agents.	(a) Extension workers ought to benefit by utilizing commercial sources. However, efforts are needed to assist salesmen and dealers so that the latter perform their job properly. (b) Commercial dealers should be enlisted on mailing lists of county extension offices and agricultural colleges. (c) Results of successful demonstrations need to be furnished to them. (d) Commercial dealers should be invited to method and result demonstration meetings.

CHAPTER V

POSSIBLE APPLICATION OF THE RESULTS OF THIS STUDY FOR INDIA'S COMMUNITY DEVELOPMENT PROGRAM

Introductory Statement

People all over the world are the same in their behavior. As Kennard has said, "All the various modern races of man are of one species. Despite the difference in physical appearances such as skin colour, hair form, shape of the nose, and stature, all modern races of the world must be assumed to have the same needs and potentialities in the absence of proof to the contrary."¹

Consequently, research studies conducted on human factors on any problem in one corner of the world should apply equally well in any other corner. By the same token, the sociological research findings with their implications from studies conducted in the U. S. A. on farm practice adoption, which have been reported in Chapter IV, have great potential value for application to extension activities of India's Community Development Program.

Nevertheless, because of the vast differences in the social systems of the communities of the U. S. A. and the villages of India, emphasis must differ on the relative merits and utility of such a vast number of findings.

¹Edward A. Kennard, "Understanding People of Other Lands," Conference Report on Extension Experiences Around the World (Washington, D. C.: U. S. D. A. Extension Service and Office of Foreign Agricultural Relations, 1951), p. 9.

Need of Outside Help for India's Program

India's Community Development Program is young. Although extension efforts in some form or other were made in India since the beginning of this century, it was only in 1952 that a nationwide Community Development Program with a National Extension Service Agency was inaugurated in India. Many thousands of villages are still to be covered by the National Extension Service Blocks.*

Therefore, it is but natural that research studies on farm practice adoption are rather scarce. A Program Evaluation Organization (separate from the extension organization), which Wilson² considers as a likely development of world wide significance, has been functioning in India since the inception of the Community Development Program. This organization is supposed to conduct studies on the acceptance of practices in the development blocks. However, sociological studies have not been conducted systematically by this organization to shed enough light on the human factors involved on farm practice adoption. Referring to the working of this Programme Evaluation Organization, Dube has said: "The outlook and approach of this organization so far have been oriented more towards the points of view of economics and public administration than of sociology,

*A National Extension Service Block of India's Community Development Program may be compared with an Extension County of the U. S. A., both being the last units in the organizational set-up.

²M. L. Wilson, Community Development Programme in India: Report of a Survey (New Delhi, India: The Community Projects Administration Government of India, 1956), p. 29.

anthropology, or social relations."³ A book on extension published by the Allahabad Agricultural Institute has also felt this need for research on human factors involved in the Community Development Program.⁴

The urgency for a sound understanding of the cultural or human factors influencing the adoption of farm practices is greatly felt in India at the present time. Batten supports this viewpoint.⁵ The urgency is mainly because:

(1) The social system in India's villages is extremely diverse. In the absence of a clear recognition of these human factors, extension work in the past often has not been and in the future may not be as effective as it might have been or be.

(2) Most of the personnel recruited in the extension service are city born and bred and often lack a basic understanding of the village people and their culture.⁶ Even those who are born in villages have no real insight into the culture of India at the village level since most of them have only spent their childhood in villages.⁷

³S. C. Dube, *India's Changing Villages: Human Factors in Community Development* (Ithaca, New York: Cornell University Press, 1958), p. 152.

⁴Allahabad Agricultural Institute, *Experiment in Extension: The Gaon Sath* (Bombay, India: Geoffrey Cumberlege, Oxford University Press, 1956), p. 201.

⁵T. R. Batten, *Communities and Their Development* (London: Oxford University Press, 1957), p. 192.

⁶"Committee Report on South Eastern Asia and India," Conference Report on Extension Experiences Around the World, *op. cit.*, p. 61.

⁷D. M. Anand, "Editorial," *Extension* I (October 1956), p. 3.

Before entering into a discussion on the application of the results from this study to India's Community Development Program, it is necessary to know about village India.

Village India

There are about a half million villages in India. Hence, it is no wonder that this country is recognized as a land of villages. Seventy to eighty per cent of India's population live in villages. The villages of India have no single social pattern.⁸ For this reason, it is rather difficult to consider any one village as typical or representative of village India.⁹ All the same, there are some features which are common in most of India's villages.¹⁰

The main purpose of this discussion will be to point out some of these common characteristics and to consider the research findings obtained from this study so as to be able to point out certain implications they have for the Community Development Program of India.

Relation of Diffusion and Adoption Research to Some Common Characteristics of India's Villages

The majority of Indian farmers are illiterate. According to 1951 census, the percentage of literacy in India was 16.6%. This percentage

⁸D. N. Majumdar, Caste and Communication in an Indian Village (Bombay: Asia Publishing House, 1960), p. 1.

⁹S. C. Dube, Indian Village (London: Routledge and Kegan Paul Ltd., 1955), p. 6.

¹⁰Ibid., p. 7.

for the rural population is known to be much lower.

The present study has pointed out that farm practice adoption increases with a corresponding increase in the amount of formal education. Some preliminary studies conducted in India indicate the same to be true there; Rahudkar reports that among the fertilizer users in Nagpur, 73% were literate.¹¹

This does not necessarily mean that the illiterate farmer is conservative. A study reported by Rao and Raheja has shown that formal education did not apparently make significant differences in bringing about changes in attitude and behavior of farmers toward approved farm practices.¹²

So, in order to encourage greater farm practice adoption, the extension worker in India needs to reorient his methods of approach to reaching and teaching illiterate farmers. Motion pictures, radios, posters, and lectures should be used to create awareness of a recommended practice. Since a low level of education is closely related with a low level of income, illiterate farmers might have even a greater need for help on matters like credit and other facilities than do better educated farmers.

¹¹W. B. Rahudkar, "Impact of Fertilizer Extension Programme on the Minds of the Farmers and Their Reactions to Different Extension Methods," The Indian Journal of Agronomy, III (December 1958), p. 123.

¹²C. C. S. Rao and P. C. Raheja, "Evaluation of Extension Methods for Change in Attitudes Towards Improving Farm Practices," The Indian Journal of Agronomy, III (March 1959), p. 198.

Older farmers are more conservative when compared with younger farmers. The influence of age on farm practice adoption has been indicated in the findings reported in this study. Preliminary studies in India have not only supported this finding but also have surprisingly indicated higher farm practice adoption with the same age group 30-45.¹³ Consequently, these results call for the development of suitable educational programs for the Indian farmers in the age groups below and above 30-45. Extension workers in India may also use this finding as a guideline in selecting demonstrators.

The vast majority of Indian farmers are low in socio-economic status. This has the same implications as already pointed out under the heading illiteracy. Further, the situation in India is still more aggravated because extension workers are not reaching farmers who are relatively low in economic status. An Etawah study has shown that village level extension workers frequently contact only farmers of the middle or upper middle classes.¹⁴ This in fact is verified by similar research in the U. S. Suitable action by extension workers toward reaching and teaching low income farmers is not only necessary but mandatory since the Community Development Program in India is meant for the entire rural segment of the population.

¹³Ibid.; Rahudkar, loc. cit.

¹⁴Albert Mayer, McKim Marriott and Richard L. Park, Pilot Project. India (California: University of California, 1959), p. 111.

Indian farms are small. The average size of holdings in India is only about seven acres and the agricultural income per family is also very low. This means that a large number of farms in India are even smaller.

Research results pointed out in this study have indicated that small farmers are slow in accepting new farm practices. Rahudkar's study in India further supports this finding.¹⁵ However, comparatively, small farmers do have good attitudes toward improving the efficiency of their farming operations or they are potentially capable of developing them.

The following two implications are suggested for extension workers of India to consider when attempting to encourage early acceptance of farm practices by the so-called small farmers.

a. Small farmers are more apt to be discontented than large farmers on account of their lower net incomes. However, since they actually have been shown to develop the same attitudes toward improved farming, small farmers, where risk is not involved, are just as likely to be innovators of farm practices as are large farmers. However, they first demand more security and it would be a desirable practice to provide them, if necessary, with some sort of a guarantee against any loss they might incur while trying out new practices.

b. Simultaneous efforts should be made along with educational programs to assist the small farmers as already stated while discussing

¹⁵Rahudkar, op. cit., p. 124.

the influence of education and illiteracy.

Most of the villages in India have less contact with the towns and the outside world. Research reported in this study has indicated that acceptance of farm practices will be slow in isolated cultural groups. The recent report of the Programme Evaluation Organization has revealed that in India, those villages which are closely linked to neighboring towns have shown rapid progress in community development.¹⁶

These findings clearly indicate that people in village India need to be placed in closer and closer contact with neighboring towns so as to encourage early adoption of farm practices.

Each extension worker in India is responsible for educating nearly 2000 farm families. Hence, the most useful successful method of reaching these families will be through local lay leaders. Hence, working intensively with local lay leaders should pay large dividends.

Indian farmers attach more importance to their value systems and habits than is true with farmers of many other countries. The present study has pointed out that the dominant value orientation of people in a cultural system ought to be identified and the recommended practices organized in such a way as to be compatible with such value systems. Village level workers' failure to follow this guideline in the past has resulted in India in the non-acceptance of new practices. An example of this is the failure by farmers to accept wheat seed variety as reported

¹⁶Editorial in The Hindu Weekly Review, June 20, 1960.

by Mandelbaum and Dube.¹⁷ The implications of the cultural values in acceptance of farm practices have been forcefully pointed out by Dube in the following words: "Many programmes are rejected not because the people are traditionally minded, conservative, or primitive, but because the innovations, in all their ramifications do not fit into the total cultural setting of the community."¹⁸

Most of the farmers will wait and see the results of a few farmers before accepting practice. This is in accordance with the theory of the diffusion process which has been discussed earlier in the thesis (see pp. 124-131).

The majority of the farmers will not accept farm practices unless they are proved to be successful in their own localities. Hence, it is no use recommending a practice in a locality unless it succeeds in the same area.

However, it is rather unfortunate that in many cases, the government agencies in India have not recognized this basic principle. A striking example of how the government agencies had continued their abortive efforts for well over 25 years to push through a recommended variety of finger millet in spite of its failure in a locality has been

¹⁷D. G. Mandelbaum, "Planning and Social Change in India," Human Organization, XII (Fall, 1953), p. 6; S. C. Dube, India's Changing Villages, op. cit., p. 133.

¹⁸S. C. Dube, India's Changing Villages, op. cit., p. 144.

reported by McLeod.¹⁹ He attributes these abortive attempts to lack of contact of the extension and the research staff with each other and with the farm people.²⁰

The importance of a successful result demonstration as a prerequisite to the acceptance of a practice therefore needs no further emphasis. A lesson to be drawn from this implication is that improved practices cannot be rushed through in a fixed time of three or five years as some of the people in India envisage. Woytinsky has therefore cautioned the leaders of India's Community Development Program in this regard by stating: "Education is an issue that cannot be tackled within the framework of a blitz-campaign in development blocks."²¹

In most of the villages in India, some form of neighborhood locality group is prevalent. This may be due to either caste grouping or due to nearness of habitation. These neighborhoods will generally have their own leaders.

Research reported in this study has shown that neighborhood leaders have much influence in the farm practice adoption of the neighborhood people. Some social studies conducted in India have revealed that where the process of individualization has not made headway, existing methods could not be changed by individual decisions. It is the

¹⁹J. H. McLeod, A Simple Survey on What Farmers Know, Mysore State, India, December 1959, unpublished, mimeo.

²⁰Ibid., p. 8.

²¹W. S. Woytinsky, India, the Awakening Giant (New York: Harper and Brothers, 1957), p. 123.

group representatives who make the decision.²²

The above findings have great implications for extension work in India. Farm practices can be accepted rapidly if the group leaders are identified and are sold on the new ideas.

Extension and farm organizations have not yet developed in India's villages. The present study has made it clear that farmers participating in extension and farm organizations adopt a greater number of farm practices than do non-participant farmers. Hence, in India, if early adoption of farm practices is to be encouraged, extension workers need to assist people in organizing such organizations and then conduct educational activities through them. This means that the activities of the Farmers' Forum and the Young Farmers' Association must be intensified.

Willingness of the rich farmers to copy the poor and the inability of the poor to imitate the rich. The reasons for this situation in villages of India are not difficult to understand. When rich farmers adopt new farm practices, the poor are likely to relate the acceptance with the farmers' richness. The poor farmers also feel that it is beyond their capacity to adopt such practices. A new way of approach to get rid of this dogma as suggested by Spencer Hatch is to commence education work first with the poor farmers.²³

²²J. D. N. Versluys, "Social Factors in Asian Rural Development," Pacific Affairs, XXX (June 1957), p. 169.

²³D. Spencer Hatch, "Extension Experience in India," Farmers of the World, Brunner, Sanders and Ensminger (Eds.) (New York: Columbia University Press, 1945), p. 67.

Research data to support this hypothesis have not been reported. However, based on the experience of Spencer Hatch, it might be hypothesized that special preliminary work with the small farmers may increase the acceptance of farm practices.

From the foregoing, it would be quite evident that most of the research findings reported in this study have great application to and value for extension work of the Community Development Program of India.

CHAPTER VI

SUMMARY AND CONCLUSIONS

Extension work is teaching and it involves three main aspects:

(1) the subject matter aspect, (2) the administrative aspect, and (3) the educational aspect. Various extension methods in suitable combinations are required for success in reaching and teaching people. Thus, the efficiency of extension workers depends on their ability to know and correctly use these methods in proper combination.

The adoption of recommended practices by farmers is considered as the best available criterion for measuring the success of extension work. There are human or cultural factors which influence the extent and rate of adoption of extension recommended practices. An awareness of such factors and of their influence on the adoption of farm practices by farmers should help extension workers choose appropriate methods.

Frequently in the history of extension work, a lack of understanding of factors related to acceptance or non-acceptance of farm practices has been observed to be one of the largest obstacles extension workers need to overcome the same. In order to identify some of the cultural factors influencing the rate of farm practice adoption, sociological research work has been in progress since the early years of extension work. These research studies have uncovered valuable information holding possible great implications for application to extension teaching situations.

Rather limited attempts, thus far, have been made to summarize these results and point out their implications for extension work. The need for even greater, more intensive efforts is indicated. In India, where the Community Development Program has been recently launched, information concerning factors influencing farm practice adoption is lacking. One reason for this, of course, is that no research has been started as yet on large enough a scale to permit necessary generalization.

The purpose of the present study was to search for the cause of extension workers' apparent lack of understanding of the above mentioned problem. In more specific terms, the purposes of this study were: (1) to summarize and analyze major research findings from the sociological studies on farm practice adoption, (2) to identify and consider their implications for extension teaching, and (3) to apply some of the research findings to the Community Development Program of India.

A library method of research was conducted. Information was obtained from research publications, bibliographies, research summaries and also from selected unpublished material.

A concept of culture and cultural change as related to the diffusion and adoption of farm practices was developed so as to assist in the organization of the study and thus making it more meaningful.

In order to serve as a useful guideline for the study, a short historical review of the relevant research work conducted in the U. S. A. was made. The classification system developed by the Sub-Committee on the Diffusion and Adoption of Farm Practices of the Rural Sociological Study was used for grouping the research findings according to major

problem areas as suggested in that system. These major problem areas are:

1. The differential acceptance of farm practices as a function of status, role and motivation
2. The differential acceptance of farm practices as a function of socio-cultural systems
3. Diffusion as the study of cultural change
4. Diffusion as a problem of communication of information.

The following major implications for extension teaching based on important research findings were reported in this study since they promise to encourage early farm practice adoption.

Differential acceptance of farm practices as a function of status, role and motivation

1. Farmers in the age group 30-45 appear to be better choices than those in other groups for selection as demonstrators since they consistently appear to be earlier acceptors of farm practices.
2. Reading material to be used in extension needs to be written at the sixth to seventh grade level of formal education if it is to communicate.
3. Where an improved practice involves continued efforts, overtime and/or when an immediate return from a practice is not expected, extension work with tenants require relatively greater simultaneous educational attention to their many needs than is usually true with other farmers.

4. Educational activities should be adjusted to include special consideration of the convenience of small farmers because of the difficulties they face in time and money.
5. Special methods are needed to reach and teach farmers relatively low on the socio-economic scale because of their frequent defeatist attitudes and insecurity.
6. Extension workers need to work more closely with existing farm organizations and to assist farmers in starting new ones, for participation in such organizations facilitates early farm practice adoption.
7. Community leaders may be thought of primarily as local resource personnel and not necessarily as innovators. Community adoption leaders and informal leaders must be reached first if the majority group is to be expected to accept new practices.
8. Extension workers need to identify neighborhoods, groups, and kinships which are in operation in local communities as a first step to getting acceptance of a practice. This is necessary because research has revealed that informal groups exert influences which facilitate the interpersonal exchange of farm information and encourage farm practice adoption. Use should then be made of such group leaders to get such locality groups to accept recommended farm practices.

The differential acceptance of farm practices as a function of socio-cultural systems

1. Educational programs should be designed so as to be suitable for use in particular situations with people in various social strata since groups and individuals vary from one extreme to the other.
2. Types of farm practices to be recommended for a community should be compatible with and geared to the value systems of that particular cultural group if acceptance is to be assured.
3. It is essential that the cultural group be familiar with new farm practices if they are to be successfully adopted. So familiarization programs are needed.
4. The assistance of local lay leadership should always be used to contact the people since they legitimize the activities pre-requisite to the diffusion process.

Diffusion as the study of cultural change

1. Farm practice adoption passes from an experimental period through trial period to full acceptance. The five generally accepted stages in the diffusion process are: (a) Awareness, (b) Interest, (c) Evaluation, (d) Trial, and (e) Adoption. These five stages of the diffusion process should be seen as being related to the five steps of extension teaching, namely, (a) Attention, (b) Interest, (c) Desire, (d) Conviction, and (e) Action.

2. Depending on the time taken for farm practice adoption, five categories of adopters are identified: (a) Innovators, (b) Early adopters, (c) Early majority, (d) Late majority, and (e) Laggards. People belonging to these categories have their own characteristics and the extension worker should learn to identify these different categories of adopters and also the particular stage of the diffusion process in which these people are. This is necessary because identification precedes selection of appropriate teaching methods. This kind of information should be utilized in preparing the annual plan of work.
3. Before starting educational activities, it might be worthwhile to enlist the aid of local people to help decide whether the recommended practices really serve their felt needs or not. This action encourages the support of local people.

Diffusion as a problem of communication of information

1. Planning farm and home visits simply to inform farmers of new practices should be avoided except in the case of innovators. Such visits with other groups will not be productive.
2. Information furnished by extension agents should supplement the information already received by farmers through mass media. Thus duplication is avoided and efforts may be properly allocated.
3. The most important role of extension workers is to inform people about techniques needed for putting new practices into operation. Liberal use of method and result demonstrations is therefore necessary.

4. Extension workers are likely to be benefitted by training neighbors and friends who influence the majority group. This is because influential neighbors and friends help farmers in the decision making stage.
5. Liberal use of mass media as sources of new information appears to be economical both in respect to time and money.
6. Limitations of some methods of mass media should be considered while working with low income farmers and appropriate supplemental methods selected and used.
7. Commercial dealers serve as sources of farm information and need to be used wherever practicable in order to increase the range of the agents' contact.
8. Commercial dealers should be invited to attend method and result demonstration meetings for they have been shown to be key people in their local communities.

Some of the recommendations from this study for the Co-operative Extension Service of the U. S. A. include:

1. Initiating research work to find out suitable methods of identifying neighborhoods and other locality groups.
2. Conducting further research to investigate separately the factors which have already been shown to influence the number of farm practices adopted and those which have been shown to influence their rates of adoption. This is necessary because in most studies conducted so far, the two aspects have not been studied separately.

3. Starting a special in-service program for extension workers to teach them how farmers accept new practices or ideas.
4. Publishing a guidebook on the findings of research on farm practice adoption for the use of extension workers including explicit implications and suggestions for extension teaching.

An attempt was made to apply the findings reported in this study to the Community Development Program of India; this was based on sociological research that indicates that the research findings involving human factors are equally applicable to situations in any part of the world.

Some common characteristics of India's villages like the small size of farms, high illiteracy rate of farm people, relatively greater attachment to value systems and locality grouping patterns were considered for discussion. This discussion of the attempt to apply research findings as reported in the study of the situation in India revealed great possibilities for the utility of such findings in India's Community Development Program. In many cases, preliminary studies conducted in India corroborated the same. The following recommendations are suggested for consideration for India's Community Development Program in order to expedite the acceptance of farm practices.

1. Select demonstrators within the age group 30-45.
2. Make greater use of motion pictures, radio, posters, lectures and contact with local lay leaders in the beginning, or awareness stage of diffusion.

3. Identify informal group leaders and conduct educational activities first with them in order to encourage early farm practice adoption by the majority group.
4. Select small farmers as demonstrators by providing some type of security against the risk involved.
5. Work intensively with local leaders so as to contact more farm families indirectly.
6. Recognize the prevalent value systems of farming communities and organize recommended practices in such a way as to be compatible with them.
7. Emphasize recommended farm practices based on successful, locally conducted result demonstrations in order to avoid a possible waste of resources.
8. Undertake simultaneous educational activities to assist farmers in obtaining inexpensive credit, equipment and solving other limiting resources.

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