

# *Individual Adoption Behavior*

## *Applications from Diffusion Research—Part I*

**Personal, cultural, social, and situational factors  
influence the means by which new ideas are  
disseminated and evaluated**

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THERE IS a common tendency to over simplify requirements for obtaining adoption of innovations by individuals; there are complexities involved. The diffusion of an idea and the diffusion of a practice are not synonymous. New practices always involve new ideas but adoption of new ideas do not always require the use of new practices. Diffusion of an idea must therefore precede the diffusion of a practice, but this is no assurance that the practice will be used.

This two-part article is directed to observations and generalizations growing out of the findings from researches on the diffusion of information and the adoption of practices, particularly those relating to agriculture.<sup>1</sup> Some of the more obscure and thus sometimes forgotten determinants of adoption behavior and to generalizations relating to the acceptance of changes by individuals will be discussed in Part I. Part II will be concerned with the nature and significance of community adoption patterns and to guide lines for change agents.

<sup>1</sup>A summary and general interpretation of many studies relating to the diffusion of agricultural information and the adoption of farm practices will be found in Herbert F. Lionberger, *Adoption of New Ideas and Practices* (Ames, Iowa: Iowa State University Press, 1960); and Everett M. Rogers, *Diffusion of Innovations* (New York: The Free Press of Glencoe, 1962).

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## COMPLEXITIES TO INNOVATION ADOPTION

The right to decide whether or not a practice will be used may or may not be left to the individual. It may rest with government, family, the kinship or locality group, or with special interest groups. What the individual can do about an innovation, how he will do it, and when, may be essentially determined by conditions within the institutional structure of a society and quite beyond the control of specific individuals.

Also, adoption of ideas and practices may require special skills, supplies, services, information, and other essentials (including credit). The availability of all of these, in turn, is predicated upon systems for supplying each and for coordinating such systems in order that needs of individuals may be met at the proper time. Certainly, none of these essentials can be taken for granted, particularly where new institutional arrangements and social systems are being developed.

Furthermore, it is necessary to distinguish between physical availability and psychological accessibility. Sometimes physically available supplies, services, and information are not psychologically accessible. For example, credit may be available but the method required for obtaining it may be unacceptable. A county agent may be competent to give advice and physically available to give it but may be personally unacceptable to clients who otherwise might use such services.

When the extra-individual conditions for adoption are met, diffusion of ideas through communicative exchange may lead to adoption. Despite often repeated opinions to the contrary, communication alone is not enough. It is often said that "our problem is one of communication"—the implication being that a good communications program would provide the answer to problems of promoting change. This isn't always true. For example, communication certainly will not remove social conditions which serve as barriers to change—particularly if target individuals regard them as essential to their welfare—nor will communication alone provide the physical needs for adoption.

\*For an example of an assessment of the many factors involved in implementing change by planned action and how research can be directed to implement or build action programs see Herbert F. Lionberger, *Some Observations Regarding the Nature and Scope of Action-Research in Family Planning* (Ford Foundation, 32 Ferozshah Road, New Delhi, India; also available from the Department of Rural Sociology, University of Missouri, Columbia, Missouri); and Mervin Mann and Herbert F. Lionberger, "A Model for Family Planning Action-Research," in Clyde V. Kiser (ed.), *Research in Family Planning* (Princeton: Princeton University Press, 1962).

### *The Communicative Act*

Communication is necessary for the diffusion of ideas; therefore, a look at the requirements for and meaning of the communicative act may be helpful. A minimum scheme for examining the communicative act must include the communicator, the message, the media, the target individual, and the social context in which the message is received.<sup>3</sup>

*The Communicator* People in captive audiences may learn as much from low prestige sources as from high prestige ones when the so-called "sleeper effect" is added,<sup>4</sup> but most audiences are not captive. Under conditions of free choice, people tend to choose persons respected for their good judgment and trusted non-personal information sources when they want information or advice.<sup>5</sup> Some things can be done to enhance the prestige of an information source, medium, or change agent, but this takes time. It is best in most cases to recognize and take advantage of existing conditions of prestige as they relate to these communicative elements.

*Message Content* Content, of course, is the essence of the message and is the key element in the communicative act. One thing sometimes forgotten is that the same message may mean different things to different people—and sometimes something entirely different than the designer intended. For example, a local editor suggested that a farmer take the word "heavy" out of his heavy heifer advertisement to save money—entirely missing the special meaning of heavy. In India, a very nicely done poster, intended to convey a "drink milk" idea, created a great demand instead for the picture because of the attractive "mother cow." The milk drinking idea did not register. The point simply is that meaning and message content must be judged from the vantage point of those who are to be educated and not solely from the standpoint of the developer.

*The Media* Media used for transmitting messages include the printed page (newspapers, magazines, bulletins, circular letters,

<sup>3</sup>See Wilbur Schramm, "How Communication Works," in *The Process and Effects of Mass Communication* (Urbana: The University of Illinois Press, 1961), pp. 3-26.

<sup>4</sup>Walter Weiss, "A Sleeper Effect in Opinion Change," *Journal of Abnormal and Social Psychology*, XLVIII (April, 1953), 173-80.

<sup>5</sup>Carl I. Hovland and Walter Weiss, "The Influence of Source Credibility on Communicator Effectiveness," *Public Opinion Quarterly*, XV (Winter, 1951-52), 495-50; Robert K. Merton, "Patterns of Influence: A Study of Interpersonal Influence and Communications Behavior in a Local Community," in Paul F. Lazarsfeld and Frank N. Stanton (eds.), *Communications Research, 1948-49* (New York: Harper and Brothers, 1949); and Herbert F. Lionberger, "Some Characteristics of Farm Operators Sought as Sources of Farm Information in a Missouri Community," *Rural Sociology*, XVIII (December, 1953), 327-38.

etc.), radio, and television. People form habits of depending on different sources for special kinds of information and may be inclined to attach varying degrees of reliability to them. For example, some may place more reliance on the written than the spoken message. Also such media as radio or television may not even be considered sources of information by some people. For instance, in a Missouri study interviewers got the impression that farmers regarded television essentially as a means of entertainment—not as a means of getting information about farming. On the other hand, radio was regarded by many as a good place to get up-to-date farm information and was used accordingly.

In the use of the mass media, there is an inclination to think of an audience as an amorphous mass of people likely to be universally exposed to the message and to respond in a prescribed manner.<sup>6</sup> The fact is that individuals are exposed in a differential manner, with varying degrees of influence. The degree to which people are exposed and the position they occupy in the communicative and influence structure are important considerations in assessing the influence of information transmitted through mass media.

*The Social Context* Finally, the social context in which the message is transmitted and received will have a bearing on the role that it and media can play in causing individuals to change their behavior.<sup>7</sup> The influence of social relationships in group structure has been repeatedly demonstrated. In the adoption of farm practices it has been found that neighborhoods, communities, cliques, and persons chosen as sources of information all have a bearing on adoption rates.

In general, groups provide mechanisms for communicative exchange, for evaluating new ideas and practices in terms of group norms and individual needs, and for the exercise of rewards for conformity and reprisals for failure to conform to expected standards of thought and action. Once group decisions are made or group sentiments are sensed, compulsion is exercised on individuals to conform. Whether or not the net group effect will be to implement change is dependent upon the favorability of the group norms.

<sup>6</sup> Elihu Katz and Paul F. Lazarsfeld, *Personal Influence, the Part Played by People in the Flow of Communication* (Glencoe, Illinois: The Free Press, 1955), pp. 15-30.

<sup>7</sup> For discussions of the influence of groups on the exposure and response to mass media messages and implemented change see Katz and Lazarsfeld, *op. cit.*, pp. 31-82; John W. Riley, Jr. and Matilda White Riley, "Mass Communication and the Social System," in Robert K. Merton, *et al.* (eds.), *Sociology Today* (New York: Basic Books, Inc., 1959), pp. 537-79; and Herbert I. Abelson, *Persuasion: How Opinions and Attitudes Are Changed* (New York: Springer Publishing Co., Inc., 1959), pp. 19-51.

to change, how closely individuals are integrated into the group, and the importance they attach to group membership and to conflicting group cross-pressures to which they are subjected.

*Target Individuals* Even if the foregoing elements could be held constant, different individuals would likely respond differently to what they see and hear. Perhaps the explanation rests in the characteristics of the individuals themselves. This seems likely in the adoption or non-adoption of farm practices.<sup>8</sup>

### THE INDIVIDUAL ADOPTION PROCESS

Much of what has been learned through research about the adoption of farm practices is concerned with influences operating in individual adoption decisions and to the manner in which individual adoptions cumulate into community adoption patterns. Primarily because of the volume of research done, generalizations are largely based on research relating to the diffusion of information and the adoption of farm practices in the United States. Nevertheless, knowledge of people outside agriculture and outside of the United States are considered.<sup>9</sup>

*Adoption is a process.* Irrespective of whether a person is an early or a late adopter he is likely to go through an extended period of deliberation before trying a new idea or practice. A decision to change involves a sequence of events and influences operating through time. Although there is some logic in saying that the adoption process starts with learning about an innovation, a person may be told, hear, read, or see mention of a new idea several times before he really knows about it. How fast one learns is partly de-

<sup>8</sup>James H. Copp, *Personal and Social Factors Associated with the Adoption of Recommended Farm Practices Among Cattlemen*, Kansas Agricultural Experiment Station Research Bulletin 83 (Manhattan: Kansas State University, September, 1956); Fred C. Fliegel, "A Multiple Correlation Analysis of Factors Associated With Adoption of Farm Practices," *Rural Sociology*, XXI (September-December, 1956), 284-92.

<sup>9</sup>For some of the studies pertinent to this paper see Eugene A. Wilkening, Joan Daly, and Hartley Presser, "Communication and Acceptance of Recommended Farm Practices Among Dairy Farmers of Northern Victoria," *Rural Sociology*, XXVII (June, 1962), 116-97; D. C. Dubey, Willis A. Sutton, and Gladys Gallup, *Village Level Workers: Their Work and Result Demonstrations* (New Delhi, India: Government of India Press, 1962); S. A. Rahim, *The Diffusion and Adoption of Agricultural Practice: A Study in a Village in East Pakistan*, Technical Publication 7 (Comilla, Pakistan: Pakistan Academy for Village Development, 1961); F. E. Emery and O. A. Oeser, *Information, Decision, and Action* (Melbourne: Melbourne University Press; New York: Cambridge University Press, 1961); and A. W. van den Ban, *Regional Differences in the Adoption of Some Farm Practices*, Department of Rural Sociology Bulletin 9 (Wageningen, Netherlands: Agricultural University, 1958).

pendent upon how ready he is to learn. This means that some of the ground work for a favorable decision is laid before awareness occurs. A commonly used model for describing and researching the individual adoption process provides for five stages: awareness, interest, evaluation, trial, and adoption.<sup>10</sup>

*There are variations in the adoption process.* All people do not go through all of these stages in all of the decisions they make nor are the stages completely discrete. Nevertheless, where thought and deliberation are required, as in the adoption of farm practices, the process idea and stages have been sufficiently validated to serve as a useful model for studying influences instrumental in promoting adoptions.

*Completion of the individual adoption process takes time.* Often the time from first knowledge to first trial or adoption is considerable (for the adoption of hybrid corn in Iowa the average was five years). For some things it is much shorter and for others longer. It seems likely that the time span is shorter now than in the past and that it is likely to become shorter in the years to come. For example, entomologists have expressed concern about farmers who insist on using new insecticides before adequate tests have been completed. This is contrary to the adoption readiness of farmers some 20 years ago.

### *Adoption Depends on Many Things*

Whether a farmer will try a new practice quickly or at all is dependent upon many things. Some relate to the individual himself, some to the situation he is in, and some to the nature of the practice itself. Some are subject to control and manipulation by change agents and some are not. Only the role of information sources and inter-personal influence in the adoption process will be considered.<sup>11</sup> These, of course, are all subject to manipulation.

<sup>10</sup> George M. Beal and Joe M. Bohlen, *The Diffusion Process*, Iowa Agricultural Extension Service Special Report 18 (Ames, Iowa: Iowa State University, March, 1957); Subcommittee for the Diffusion of Farm Practices, *How Farm People Accept New Ideas*, North Central Regional Publication No. 1 (Ames, Iowa: Iowa Agricultural Extension Service, November, 1955). For a briefer description of the process see Everett M. Rogers, "The Adoption Process, Part I," *Journal of Cooperative Extension*, I (Spring, 1963), 19.

<sup>11</sup> Some of the specific studies relating to the role of information sources in the adoption process include: James H. Copp, Maurice L. Sill, and Emory J. Brown, "The Function of Information Sources in the Farm Practice Adoption Process," *Rural Sociology*, XXIII (June, 1958), 146-57; Wilkening, Tully, and Pritchard, *op. cit.*; and Elihu Katz, "The Social Itinerary of Technological Change: Some Studies on the Diffusion of Innovation," *Human Organization*, XX (Summer, 1961).

*The usefulness of information sources varies by stages in the adoption process* (see Table 1). Information sources have been ranked in terms of the frequency with which they were mentioned for specific purposes in a dozen or more studies relating to the adoption of farm practices. These rankings are approximations which vary with specific practices and with individuals. Nevertheless, several salient features are well documented.

*Mass media inform people and create interest.* Mass media (i.e., radio, newspapers, farm magazines, and television) taken collectively rank very high as means of making people aware of new farm practices and in providing additional information at the interest stage. However, they do not rate high at the evaluation and trial stages. Studies from which conclusions may be drawn about source use at the adoption stage are few in number but generally indicate low level use of mass media. Personal experience, fortified by the reactions and the experiences of others who are in a position to act as legitimating and reinforcing agents, are most important at this stage.

*Farmers convince each other.* Friends and neighbors rate highest at the evaluation and trial stages. The de-emphasis on mass media and the greater importance of trusted associates is contrary to early expectations of the mass media. There is no evidence of either mass exposure or response. At the same time, the increased importance of other persons as information sources at the evaluation stage emphasizes the importance of the interaction of individuals as a part of the individual adoption process.

#### *Functions of Different Sources*

There are reasons why different sources perform different functions in the adoption of farm practices.<sup>12</sup> With some of the conditions of decision-making and the use of information sources known, it is possible to explain why differences occur. Editors of farm magazines and newspapers, radio broadcasters, and to some extent telecasters are a part of a highly institutionalized system for gathering new information and for quickly transmitting it to the public. At the same time, farmers have developed an expectation and a confidence in many of the media agencies to perform this function. It is no wonder that mass media are generally accorded first place at the awareness and interest stages by most farmers (late

<sup>12</sup> This subject is more thoroughly discussed in Copp, Sill, Brown, *op. cit.* See also Everett M. Rogers, "The Adoption Process, Part II," *Journal of Cooperative Extension*, I (Summer, 1963), 73.

Table 1. Rank order of information sources by stages in the adoption process

Stages in the adoption process				
Awareness (Learns about a new idea or practice)	Interest (Gets more infor- mation about it)	Evaluation (Tries it out mentally)	Trial (Uses or tries a little)	Adoption* (Accepts it full-scale and continues use)
1. Mass media—radio, TV, newspapers, magazines	1. Mass media	1. Friends and neighbors	1. Friends and neighbors	1. Friends and neighbors
2. Friends and neighbors—mostly other farmers	2. Friends and neighbors	2. Agricultural agencies	2. Agricultural agencies	2. Agricultural agencies
3. Agricultural agencies—ex- tension, vo-ag, etc.	3. Agricultural agencies	3. Dealers and salesmen	3. Dealers and salesmen	3. Mass media
4. Dealers and salesmen	4. Dealers and salesmen	4. Mass media	4. Mass media	4. Dealers and salesmen

\* Personal experience is the most important factor in continued use of an idea.



adopters, who are more likely to obtain initial information from other farmers, are exceptions to the rule).

The situation is quite different at the evaluation stage. Here a farmer must apply new information to his own situation and critically evaluate it. He wants to know what others think about both the idea and the information. He needs to talk back. He wants to ask questions. Two-way communication is necessary. Also people who have made up their minds like to hear that they are right. Those who have not made up their minds may go for advice or even answers. They may accept information from other farmers that would not be considered from more knowledgeable sources. Persons who are trusted and who understand the situation of the decision maker—or better still those who are in about the same situation—are likely to be most helpful at this stage.

Friends and neighbors (mostly farmers) rate high as information sources at the trial stage. This is the time that a farmer needs answers to when, where, how much, how-often-to-use-it questions. The person who has actually tried ideas under local conditions is regarded as having many of the answers and is frequently sought by farmers who are among the last two-thirds or three-fourths to adopt. Commercial sources, particularly local dealers, are also important contributors of information at this stage.

*Local Dealers* Involvement of local dealers as information sources is highly variable and perhaps unpredictable. In the adoption of hybrid corn, local dealers (often fellow farmers) were most mentioned as sources of first information.<sup>13</sup> In some cases they were hardly mentioned. In a Missouri study now in process they were most mentioned as first sources of information for decisions to purchase farm supplies.<sup>14</sup> Some dealers have been able to achieve legitimator status under some circumstances. At the trial stage dealers occasionally rate in the number one position, particularly for practices involving products they sell. For other practices and under other circumstances they may be used very little.

Possibly the function of sources can be changed. There are many important questions about dealers centering around the circumstances or conditions under which they are accorded legitimating and informing functions which remain unanswered. If these (along with conditions under which mass media agents are able to assume

<sup>13</sup> See B. Ryan and Neal Gross, *Acceptance and Diffusion of Hybrid Seed Corn in Two Iowa Communities*, Iowa Agricultural Experiment Station Research Bulletin 372 (Ames: Iowa State University, January, 1950).

<sup>14</sup> See Herbert F. Lionberger, *The Role of the Mass Media in Decisions to Change Farm Practices and Purchase Farm Supplies With Emphasis on Television and Radio*, paper read at seminar of the Foundation for Research on Human Behavior (November and December, 1958).

major reinforcement and legitimation functions) were better known, avenues for extending the usefulness of these sources probably could be opened.

The adoption process is repeated often. In a rapidly changing society where new and better methods of farming are continuously being introduced, new decision-making cycles on the part of farmers are expected and are certainly not disturbing. However, to those who have a product to sell, effort certainly cannot cease with adoption.<sup>15</sup> This is particularly true when advertisers are continually trying to get the eye and ear of the farmer. Under such circumstances the farmer must be repeatedly assured that his original decision is the right one. Otherwise, he is not likely to stay in the adoption fold very long.

#### CONCLUSIONS

The adoption behavior of individuals is dependent upon a multitude of interrelated personal, cultural, social, and situational factors. Within this context, the means by which new ideas are disseminated to and evaluated by individuals in arriving at use decisions involve communications. Recognition that arriving at adoption decisions is a process and not a unit act has greatly extended possibilities for defining the role of information sources in decisions. Since there are regularities in these processes it has been possible to formulate working generalizations about the use of information sources and the role of significant other persons at different stages in the individual adoption process.

Definition of community adoption patterns and the influences operating at different stages in the community diffusion process have provided additional substantive findings with action implications. The nature of community adoption patterns and special features significant for implementing changes on an area basis will be discussed in an article entitled *Community Adoption Patterns: Applications from Diffusion Research, Part II*. This will appear in a subsequent issue of this journal. Action implications of substantive research findings from both types of processes will be included in the second article.

<sup>15</sup> For an example of programming model to maintain sales levels see the National Broadcasting Company, *Why Sales Come in Curves* (New York: National Broadcasting Company, not dated).