

SOME REFLECTIONS ON THE DIFFUSION OF AGRICULTURAL INNOVATIONS

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An issue that has engaged the thought and effort of many communication scholars both in the developed and the developing countries is that of the diffusion of agricultural information and its implications for social development. The work of such scholars as Ryan and Gross, Beal etc. had a perceptible impact on defining this new field of enquiry and Rogers' book sought to bring to the attention of a wider public the importance of this field.

It was believed that there were four important elements in the diffusion of agricultural, or for that matter, any other kind of innovation. They are (1) the innovation, (2) its communication from one individual to another, (3) in a social system, (4) over time. An innovation is defined as an idea perceived as new by a person or a group of persons. By diffusion is meant the process through which an innovation is disseminated. This diffusion process has its origin in the source of invention or creation of the idea and ends with the users and adopters, encountering various other categories of people on the way. A social system in this context is defined as a group of persons who are functionally differentiated and are involved in a common problem-solving endeavour. By adoption is meant the decision to make use of a given innovation. This process of adoption ranges from the initial awakening of an interest in an innovation to its final adoption.

Diffusion of innovation research represented the confluence of anthropology, early sociology, rural sociology, education, industrial and medical sociology. The idea of the adoption process was central to this research enterprise. Scholars have conceptualised this process according to five different stages: awareness—interest—evaluation—trial and adoption. During the awareness stage, it is said that a person or a group of persons is exposed to the innovation but does not possess sufficient information regarding it. As a consequence of this exposure he develops an interest in it. This constitutes the second state. At the third stage, which is termed the stage of evaluation the potential adopter mentally examines the usefulness of this innovation and ponders whether to use it or not. If he decides to use it, he tries it out on a small scale. This is the fourth stage which is termed the trial stage. Finally there is the adoption stage at which the person resolves to make full use of the innovation. This division into five stages is indeed too neat to capture the full complexity of the diffusion of innovation process. However, it represents the kind of thinking that activated the early diffusion of innovation researchers.

In conceptualising the diffusion and adoption process, researchers in this tradition paid great attention to the innovation itself, as seen by persons living in a given social system. The characteristics on which they focussed attention are the degree to which an innovation is better than the one it supplants, the degree to which an innovation is consonant with the experience of the users, the degree to which an innovation poses problems of understanding and use, the degree to which an innovation could be usefully tried out on a limited scale and the degree to which the results of a given innovation could be shared with others.

Early diffusion of innovation researchers paid great attention to the various categories of adopters in seeking to refine their conceptualisations. They came up with five categories of adopters: innovators—early adopters—early majority—late majority and laggards. Innovators were supposed to be bold and prepared to experiment. Early adopters respected change. Early majority were conscientious. Late majority were sceptical and laggards were tradition bound. As with the division of the diffusion process into five stages, this categorisation too seems to be inordinately simple. Many of the early diffusion of innovation researchers were not unaware of it. However, it is symptomatic of the kind of way in which they sought to conceptualise the diffusion of innovation process.

The diffusion of agricultural innovations, when conceived of as a communication problem, the role of opinion leaders became paramount. Many researchers sought to identify the characteristics of opinion leaders and the way in which information flowed through them. Concepts such as the two-step flow of communication and the multi-step flow of communication gained currency as a result of these research efforts.

So far, I have described very briefly the main features of the diffusion of agricultural information tradition. In the fifties and the sixties, this tradition of research had a great impact on communication scholars both in the developed and the developing countries. Hundreds of studies were done which sought to make use of this conceptual framework. These studies had an appreciable impact on the policy makers. However by the seventies, serious questions began to be raised in relation to the diffusion of innovations research tradition. This change of attitude is closely linked to the change in the intellectual climate in which development communication issues were discussed.

During the fifties and the sixties the approach to development communication that was dominant stressed the need for rapid economic growth by means of industrialisation. Capital-intensive technology and centralised planning received very heavy emphasis. The developing countries were urged to emulate the industrially advanced countries and take the selfsame historical path that they had trodden. Works of writers like Rostow (1960) had a profound impact on this type of thinking.

This line of thinking received the endorsement of communication scholars as well. This concept of development grew out of certain historical events like the Industrial Revolution in Europe and the United States, the colonial experience in Latin America, Africa and Asia, and the quantitative empiricism of North American social sciences and capitalistic economic and political philosophy. The communication scholars who most prominently represent this model are Wilbur Schramm, Daniel Lerner and Lucian W. Pye. Their books like 'Mass Media and National Development', 'The Passing of Traditional Society', 'Communication and Political Development' had a profound impact on both academics and laymen. It was the considered opinion of these writers that the mass media could play a very significant role in creating the climate propitious for development.

This approach focusses attention on the need for increased productivity through rapid industrialisation. Productivity was seen as the key to development and the industrial sector was regarded as the most productive sector of modern society. According to this line of thinking the modernised elite had to play a crucial role in leadership and guidance. Therefore it is only natural that Pye should say that in

those countries with a small modernised elite, the weight of communication of policies should be on the side of protecting the freedom of these leaders and strengthening their influences through society.

What was the role assigned to communication in this approach? Communication was seen as an excellent instrument for the dissemination of new knowledge imparting of new skills, introduction of new values, raising of aspirations of people, creating a sense of nationhood which would transcend parochial boundaries, reassuring people in a state of transition. In a word, the role of communication was to create the right ambience for development.

This approach, no doubt, generated a great deal of optimism. However, by the seventies, it was evident that this strategy had not worked. It is true that the GNP had increased. But many new problems were created like unemployment and under-employment, and urban congestion. Furthermore, the proponents of this approach expressed the hope that the benefits accruing through the adoption of this strategy would have a "trickle-down" effect. This, too, did not take place. Indeed the gap between the rich and the poor in the developing countries began to widen more. As one commentator remarked, not only is there no automatic trickle-down of the benefits of development; on the contrary, the development process leads typically to a trickle-up in favour of the middle classes and the rich (Adelman 1975).

This approach to development was founded on a philosophy of development as well as a philosophy of communication. The philosophy of communication was heavily influenced by what is generally referred to as the Aristotelian model of communication. In Aristotle's model of communication found in Western culture, there were four components: communicator, message, receiver, objective. In the opinion of Aristotle the communicator is supreme. It is his aim to influence and persuade his receivers in a manner that he deems fit. To him 'manipulation' was the operative word. Indeed, this model of communication has survived into modern times as is evidenced by Laswell's and Shannon and Weaver's models.

The proponents of this approach to development communication were in large measure guided by this philosophy of communication. Hence, the emphasis on the communicator (mass media) and the idea of manipulation, and scant regard for the receiver and the social structure in which he finds himself.

The optimism generated by this approach began to fade away by the seventies. It came under heavy fire from many communication scholars for a variety of reasons. Firstly it was suggested that this approach is ethnocentric, and that it held up the Western experience as a model to be emulated by the less developed countries ignoring the uniqueness of history, cultural background, social structure, etc. that characterise each society. Secondly, and closely allied to the first argument, it was maintained that this approach posited a unilinear view of history. There was not one but indeed many paths to development and the path trodden by the industrially advanced countries was not the only one. Thirdly, these critics argued that endogenous factors of development were unduly emphasised. It was their belief that we live in a highly interdependent world and that the problematic experiences of the Third World could be meaningfully understood only in terms of both endogenous and exogenous factors. Fourthly, the critics of this approach to development argued that it overly stressed the role of the individual and blamed him for all the failures without adequately taking into consideration the role of social structure. In the fifties and the sixties, it was generally said by development communi-

cationists that peasants in traditional societies failed to achieve developmental goals because they were traditional, superstitious, lethargic, fatalistic, etc. and were not motivated by the protestant work ethic. By the seventies, it became evident to many of the more discerning development communicationists that this criticism was unjustified and that it failed to take into consideration the role of the social structure which would explain more cogently the inability of peasants in traditional societies to achieve development goals.

With the old approach to development communication coming under severe attack a newer one which sought to meet some of these criticism surfaced. The first approach, as we saw earlier, stressed economic growth, capital intensive technology, industrialisation, centralised planning and endogenous factors of development. The newly emergent approach, on the other hand, sought to emphasise income distribution—labor intensive technology—decentralised planning—endogenous as well as exogenous factors of development. Concurrently, the need to focus attention on the quality of life—blend traditional and modern media of communication—make greater use of appropriate technology and entail greater popular participation in the decision-making process was unambiguously stressed.

According to the newer model of development, the key questions that needed to be asked were:

1. How can distributive justice be achieved? The earlier approach to development communication seemed to favour the more affluent strata of society at the expense of the less affluent.
2. How can the objectives of self-reliance, self-management, self-development and popular participation be fulfilled? The earlier approach proposed a top-down strategy which had the unfortunate consequence of the generality of the people being left out of the decision-making process.
3. How can the traditional and modern media of communication be fruitfully integrated? The earlier approach paid very little attention to the role of culture in development.
4. How best can culture be deployed to facilitate development? It was evident that the earlier approach did not appreciate fully the role of culture in development.
5. How can one construct models of development which pay greater attention to history and unique social features of each society? The old approach was largely historical and posited a universalistic model of communication based on the western experience.
6. How can one take into consideration the structural factors which are closely linked to development? In the earlier approach, this was discussed largely in terms of individual weaknesses.

Along with this shift of emphasis regarding the meaning of development was seen a parallel shift of emphasis regarding the meaning of communication. The old mechanistic, linear, one-way model of communication was supplanted by a process-oriented and two-way model of communication. In the old Aristotelian model, the communicator was supreme. It was indeed a communicator-based model. With the writings of scholars like Berlo and Barnlund the idea of communication being an interactive process where the communicator and the receiver share an equal responsibility received support from many scholars of communication.

In this new climate of thinking, the diffusion of agricultural and other innovations was subject to a rigorous analysis. It was felt that the earlier strategy of the diffusion of innovation was closely related to the old approach to development communication. The earlier strategy came in for a great deal of criticism. Here, the writings of those in Latin America had a profound impact on the new line of thinking.¹ For example, Grunig (1968) after examining the nature of decision-making among farmers in Columbia came to the conclusion that previous studies in this area had concentrated on communication behaviour and a handful of social-psychological variables in isolation from the structural context in which communication takes place. He emphasised rightly that in most rural societies, structural rigidities need to be eliminated before communication can have an appreciable impact. The main emphasis of these scholars was that in the matter of diffusion of agricultural innovations and the designing of strategies it is indeed imperative that we take into consideration the structural context. Although the early diffusion of innovations researchers mentioned the term 'social system' in their definitions, it was not studied with any degree of seriousness which it clearly entailed.

The critics of the early diffusion of agricultural innovation strategies suggest that in identifying the causes which impede this diffusion process it is very important that we pay attention to the social structural features without naively blaming the individuals for all the shortcomings. In other words, we need to bear in mind constantly the fact that the way in which new technology is introduced cannot be interpreted or understood in isolation from the social context into which it is introduced. As many researchers have rightly pointed out diffusion researchers have established that certain variables like farm size, income level, social prestige educational level, mass media exposure are positively related to the adoption of agricultural innovations, but they have not discerned the very real influences exercised over these variables by the social structure.

Another point raised by the critics of the early diffusion of innovation strategies is that it was a more resource-based than need-oriented endeavour. A new innovation which was thought to be useful and helpful to the farmers was developed at a research center, and it was disseminated to the farmers living in the periphery. How relevant it was to the generality of the farmers, how did it square with their received wisdom and traditions, how did it fit into the cultural context were questions that were never raised. The critics of the classical diffusion model rightly argue that we need to start with the needs and problems of the farmers and then find out how best they could be met. This fits in admirably with the newer concept of communication which places a greater degree of emphasis on the receiver and the two-way interactive process.

A third criticism of the classical diffusion model is that it did not pay sufficient attention to the infrastructural dimensions of the diffusion of innovations. Questions such as credit and storage facilities, transportation, market condition etc. have a very great influence on the adoption process. The early communication scholars who were interested in diffusion of innovations research failed to give due weight to the crucial factors.

As a consequence of criticisms of this nature, communication scholars are rethinking the whole question of the diffusion of innovations. The newly emerging approaches to development communication, no doubt, underline the need for this act of reappraisal. These reconsiderations did not take place wholly at a theoretic-

1. Writing of Luis Ramino Belbars and Gordon C. Whiting.

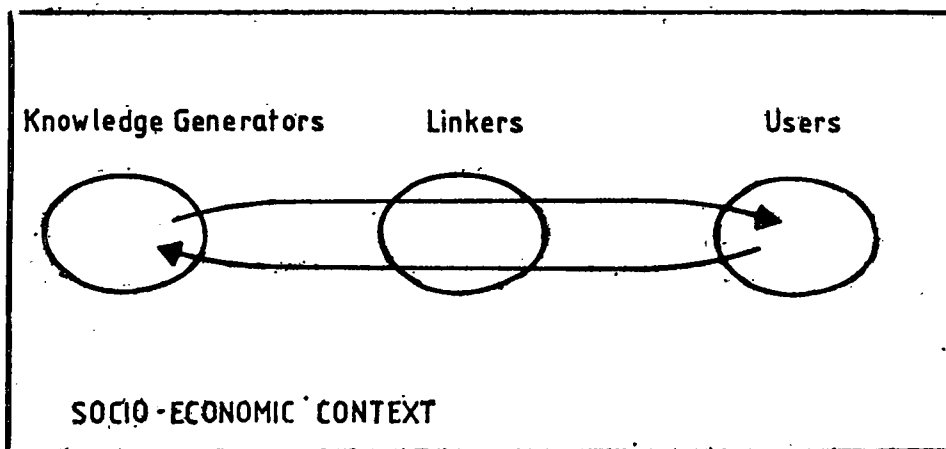
tical level. Some practical experiments were conducted along the newer lines of thinking. Farming systems, research and development which exist in countries like Indonesia and the Philippines are a case in point.

Primarily, this is a knowledge utilisation system which encourages teams of social scientists, agronomists, technicians at the farmer level to examine the indigenous farming systems, cultural practices, needs and problems, and on the basis of this body of knowledge to develop appropriate technology. This system places very great emphasis on self-reliance and local generation of knowledge. Instead of handing out new innovations, this is envisioned as a corporate endeavour where the scientists and the farmers become equal partners in a common quest. This is but one example which reflects the newer attitude to the diffusion of agricultural innovations.

As a result of this line of thinking a more realistic and productive approach to diffusion of agricultural innovations is taking shape. The most important features of this approach are a greater attention to

- (i) the social, economic and cultural context in which the diffusion process takes place,
- (ii) the needs and problems of the users of agricultural innovations (farmers),
- (iii) the political factors and power structures in a given society,
- (iv) the indigenous generation of knowledge,
- (v) the infrastructural dimensions of innovations.

The essence of the newer approach to the diffusion of innovations can be explained diagrammatically in the following manner:



Here by the term knowledge generators is understood the body of social scientists, agronomists, etc. who are responsible for the creation of new knowledge leading to new innovations. The linkers are the communicators who facilitate the exchange of ideas, knowledge and opinion between the knowledge generators and users. The term users here signifies the farmers living in the periphery. And finally what is important to bear in mind is the fact that this interaction takes place in a specific socio-economic context and is indeed guided by the social, economic, cultural and political factors.

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