COMMUNICATION AND DEVELOPMENT

The Passing of the Dominant Paradigm

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The most influential book about communication and development is probably Wilbur Schramm's Mass Media and National Development. When it appeared in 1964, social scientists thought they understood the nature of development and the role of communication in development. The ensuing decade shows us that our conception of development was rather limited and perhaps not entirely correct. Today we see that past notions do not entirely fit the reality and potential of the contemporary scene.

In this paper, I shall (1) describe the old concept of development and contrast it with some emerging alternatives, and (2) set forth our previous conception of communication in development and contrast it with some of the roles of communication in the emerging models of development.

THE DOMINANT PARADIGM OF DEVELOPMENT[1]

Through the late 1960s, a dominant paradigm ruled intellectual definitions and discussions of development and guided national development programs. This concept of development grew out of certain historical events, such as the Industrial Revolution in Europe and the United States, the colonial experience in Latin America, Africa, and Asia, the quantitative empiricism of North American social science, and capitalistic economic/political philosophy. Implicit in the ruling paradigm were numerous assumptions which were generally thought to be valid, or at least were not widely questioned, until about the 1970s.

Definitions of development centered around the criterion of the rate of economic growth. The level of national development at any given point in time was the gross national product (GNP) or, when divided by the total population in a nation, per capita income. Although there was a certain amount of intellectual discomfort with per capita income as the main index of development, especially among noneconomists, alternative measures and definitions of development had relatively few proponents.

What were the major academic and historical influences on the old conception of development?

1. The Industrial Revolution, usually accompanied by foreign colonization and domestic urbanization, during the latter 1800s. The rapid economic growth of this period in Europe and the United States (and again in post-World War II Europe) implied that such growth was development, or at least was the driving engine of development. Industrialization was seen as the main

route to development. And so less developed countries (they were often called "underdeveloped" in the 1950s and 1960s) were advised by development planners to industrialize. Steel mills. Hydroelectric dams. Manufacturing industries. And a low priority for agricultural development.

The old paradigm stressed economic growth through industrialization as the key to development. At the heart of industrialization were technology and capital, which substituted for labor. This simple synthesis of development may have been a fairly correct lesson from the experience of the Industrial Revolution in Western Europe and North America. Whether it could be applied adequately and successfully to very different sociocultural settings, such as the developing nations where labor was generally not in short supply, seemed a likely hypothesis in the 1950s, and it was certainly tested on a mammoth scale. "Democracy, training, modern factories, more money-these words sum up the major development policies of the Western democracies" (Owens and Shaw, 1974: 153).

What has happened in Western nations regarding their pathways to development is not necessarily an accurate predictor of the process in non-Western states. For instance, European nations were often greatly aided in their socioeconomic transformation by their exploitation of colonies. Obviously, the contemporary states of Latin America, Africa, and Asia do not have colonies (although they may have an interior region or regions that act as economic colonies for another part of their nation).

2. Capital-intensive technology. More developed nations possessed such technology. Less developed nations had less of it. So the implication seemed plain: Introduce the

technology to the less developed countries and they would become relatively more developed too. It was assumed that appropriate social technology would appear to accompany the externally introduced material technology. When the needed social structures did not always materialize in less developed countries, the fault was accorded to "traditional" ways of thinking, beliefs, and social values. Social science research was aimed at identifying the individual variables on which rapid change was needed, and the modernization of traditional individuals became a priority task of various government agencies, an activity in which the mass media were widely utilized.

Capital was required, of course, for the high-capital technology, to be provided by national governments, by local entrepreneurs by international loans, and through the activities of multinational firms (usually owned and controlled by the industrially advanced nations). Gradually the newly independent nations began to realize that political freedom was a different matter than economic independence. The end of colonialism did not necessarily mark the end of financial dependence on the industrially advanced countries. Often it increased such dependency. And capital-intensive technology, including military armaments, was one reason.

3. Economic growth. It was assumed that "man" (all men, actually) was economic, that he would respond rationally to economic incentives, that the profit motive would be sufficient to motivate the widespread and large-scale behavior changes required for development to occur. Economists were firmly in the driver's seat of development programs. They defined the problem of underdevelopment largely in economic terms,

and in turn this perception of the problem as predominantly economic in nature helped to put and to keep economists in charge.

Central economic planning of development was widely accepted as a legitimate and reasonable means by which a nation should seek development goals.[2] Almost every country in Asia, Africa, and Latin America established a national development commission during the 1950s and 1960s. Bankers and economists were usually appointed to such commissions. Five-year development plans were produced to serve as a guide to the economic development activities of national governments. When invited, international agencies provided technical assistance to such planners. The Harvard Development Advisory Group was ready to help. And the World Bank. More economists. More bankers. Complete with assumptions about the expected economic rationality of "man".

The focus on economic growth carried with it an "aggregate bias" about development: that it had to be planned and executed by national governments. Local communities, of course, would be changed eventually by such development, but their advance was thought to depend upon the provision of information and resource inputs from higher levels. Autonomous self-development was considered unlikely or impossible. In any event, it seemed too slow.

Further, growth was thought to be infinite. Those rare observers who pointed out that known supplies of coal or oil of some other resource would run out in so many years were considered alarmists, and they were told that new technology would be invented to compensate for future shortages. More and bigger was better. It was not until the early 1970s that

the book by Meadows et al. (1972), The Limits to Growth, appeared to challenge the infinite-growth enthusiasts, and the proponents of no-growth policies became heard.

4. Quantification. One reason for reliance on per capita income as the main index of development was its deceitful simplicity of measurement. The expression "quality of life" was seldom heard until the very late 1960s (I cannot actually remember ever hearing it until then in the context of development). It seemed reasonable that if some dimension of development could not be measured and quantified in numbers, then it probably did not exist. Even if it did, it must not be very important. Or so it seemed prior to the Stockholm Conference on the Human Environment in 1972.

Further, the quantification of development invoked a very short-range perspective of 10 or 20 or 25 years at most. Development was today. It was facile to forget that India, China, Persia, and Egypt were old, old centers of civilization, that their rich cultures had in fact provided the basis for contemporary Western cultures. Such old cultures were now poor (in a cash sense); and even if their family life displayed a warmer intimacy and their artistic triumphs were greater, that was not development. It could not be measured in dollars and cents.

The drive for the quantification of development, an outgrowth and extension of North American social science empiricism, helped define what development was and was not. Material well-being could be measured. Such values as dignity, justice and freedom did not fit on a dollars-and-cents yardstick. And so the meaning of development began to have a somewhat dehumanized nature. Political stability and unity were thought to be

necessary for continued economic growth, and authoritarian leadership increasingly emerged, often in the form of military dictatorships. And in the push for government stability, individuals freedoms often were trampled.

Further, what was quantified about development was usually just growth, measured in the aggregate or on a per capita basis. Development policies of the 1950s and 1960s paid little attention to the equality of development benefits. The "growth-first-and-let-equality-come-later" mentality often was justified by the trickle-down theory-that leading sectors, once advanced, would then spread their advantage to the lagging sectors. Anyway, income disparities were thought to provide incentives for hard work and sacrifice and to act as a motivating force for individuals to invest in a lengthy formal education for themselves or for their children.

It was not until much later, in the 1970s, that the focus of quantification began to shift to measures of the equality of distribution. Gini ratios. Unemployment rates. Consideration of widening gaps.

CRITICISMS OF THE DOMINANT PARADIGM OF DEVELOPMENT

In short, the old paradigm implied that poverty was equivalent to underdevelopment. And the obvious way for less developed countries to develop was for them to become more like the developed countries.[3]

It was less obvious that the industrially advanced nations largely controlled the "rule of the game" of development. That most of the scholars writing about development

were Westerners. That balances of payment and monetary exchange rates were largely determined in New York, London, and Washington. And the international technical assistance programs sponsored by the rich nations, unfortunately, made the recipients even more dependent on the donors. These gradual lessons took some time to emerge and to sink into intellectual thought.

Intellectual Ethnocentrism

Theoretical writings about modernization in this period after World War II generally followed an "individual-blame" logic and may have been overly narrow and ethnocentric in a cultural sense. Examples are the works of Walt Rostow (1961), Everett Hagen (1962), and David McClelland (1961), all drawing more or less on the earlier writings of Max Weber. The leading theorists were Westerners, and there often was a rather inadequate data base to support their conceptualizations. Portes (1973) criticized this Werstern and person-blame bias: "There is, I believe, a profoundly ethnocentric undercurrent in characterizations of modern men in underdeveloped countries. An invariably positive description obviously has something to do with similarity of these individuals with the self-images and values of researchers." Many economists insisted that their discipline consisted of a universally valid body of theory, applicable to both. One might ask rhetorically how different economic theory would be if Adam Smith had been Chinese or a Sikh. "Economic theorists, more than other social scientists, have long been disposed to arrive at general propositions and then postulate them as valid for every time, place, and culture" (Myrdal, 1968: 16).

After reviewing the history and nature of the dominant paradigm and contrasting it with the reality of Asian development, Inayatullah (1975, 1976) concludes: "The Western development theory ... is not an adequate intellectual framework ... as it suffers from an overemphasis on the role of factors internal to Asian societies as causes of underdevelopment to the exclusion of external factors."

Continuing underdevelopment was attributed to "traditional" ways of thinking and acting of the mass of individuals in developing nations. The route to modernization was to transform the people, to implant new values and beliefs.

The dominant paradigm sought to explain the transition from traditional to modern societies. In the 1950s, the traditional systems were the nations of Latin America, Africa, and Asia. All were relatively poor, with GNPs averaging about one-fifth or less those of the developed nations of Europe and North America. Almost all were former colonies (the African and Asian nations more recently so), and most were still highly dependent on the developed nations for trade, capital, technology, and, in many cases, for their national language, dress, institutions, and other cultural items. It seemed that the developing nations were less able to control their environment and were more likely to be influenced by unexpected perturbations in their surroundings. In these several respects, the developing countries seemed to be somehow "inferior" to the developed nations, but of course with the hoped-for potential of catching up in their overall development. The developed nations of the West were taken as the ideal toward which the developing states should aspire.[4] The development of traditional societies into modern ones was a contemporary intellectual extension of social Darwinian

evolution.

Redefining the Causes of Underdevelopment

Western models of development assumed that the main causes of underdevelopment lay within the underdeveloped nation rather than external to it. The causes were thought to be (1) of an individual-blame nature[5] (peasants were traditional, fatalistic, and generally unresponsive to technological innovation) and/or (2) of a social-structural nature within the nation (for example, a tangled government bureaucracy, a top-heavy land tenure system, and so on). Western intellectual models of development, and Euro-American technical assistance programs based on such models, were less likely to recognize the importance of external constraints on a nation's development: international terms of trade, the economic imperialism of international corporations, and the vulnerability and dependence of the recipients of technical assistance programs. The dominant paradigm put the blame for underdevelopment on the developing nations rather than on the developed countries, or even jointly on both parties.

During the 1950s and 1960s, this assumption of blame-attribution was widely accepted not only in Euro-America, but also by most government leaders and by many social scientists in Latin America, Africa, and Asia. Many of the latter were educated in the United States or Europe, or at least their teachers and professors had been. And the power elites of developing countries were often coopted to the "within-blame" assumption by international technical assistance agencies or by multinational corporations.

International power in the 1950 to 1970 era was concentrated in the hands of the United States, and this helped lead international efforts in the development field to follow a within-blame causal attribution and to reinforce it as an assumption. As the U.S. corner on world power began to crack in the 1970s (at least, in the UN General Assembly), so did faith in the dominant paradigm of development. The "oil blackmail" of Euro-America following the Yom Kippur War in 1973 not only redistributed millions of dollars from developed to certain developing countries, but it dramatically demonstrated that developing countries could redefine the social situation of international finance. Then why not redefine the definition of the causes of underdevelopment? Starting at the Stockholm Conference on the Human Environment in 1972 and carried forward at the Bucharest World Population Conference and the Rome Conference on Food in 1974, the delegates from developing nations began to collaborate in redefining the problem of underdevelopment, so that the causes of underdevelopment were seen as external to developing nations as well as within them.

Small Technology and Radical Economists

"Westerners as well as Western-trained planners, in the poor countries have been taught to think of small-scale, labor-intensive operations as inefficient, as a type of investment that retards economic growth" (Owens and Shaw, 1974: 2). But these prior assumptions of the dominant paradigm about the centrality of technology also began to be questioned. In China, for example, the Maoist philosophy is "not to allow the machines and their incumbent bureaucracies to control the men, but to insit that technology

serve and be controlled by the peole" (Rifkin, 1975). The Green Revolution was originally expected to represent a kind of ultimate in the use of technical solutions to human social problems. Indeed, it led to impressive increases to wheat and rice yield in Pakistan, India, and the Philippines. But the Green Revolution also widened the socioeconomic gap between smaller and larger farmers and between the government and the public. Many tenants and landless farm laborers were displaced by the tractors and farm machines which the larger farmers began to buy. Where could these rural poor go? Only to already overcrowded cities. So the Green Revolution helped demonstrate that "improved seeds cannot solve the problem of unimproved farmers" (Owens and Shaw: p.72).

The English economist E. F. Schumacher (1973) launched an attack on high technology in his book Small Is Beautiful, advocating "intermediate technology" as a more useful contribution to development in Latin America, Africa, and Asia. By early 1976, Schumacher's idea seemed to be catching on in numerous countries where intermediate technology groups were established to fit scientific tools and methods to the local culture.

Other economists in the 1970s engaged in critique of the dominant paradigm also, especially its assumption of "a linear theory of missing components" (like capital, foreign exchange, skills, or management) such as had been promoted by Rostow (1961). Many of these economist-critics proposed some version of a neocolonialist/cultural imperialism theory of underdevelopment accompanied by a questioning of what constitutes the meaning and measure of development. Somewhat typical of this vein are Seers and Joy (1971).

Most influential among the radical economists is André Gunder Frank, who centers on capitalism as the main cause of exploitation, inequality, and, generally, of underdevelopment: "It is capitalism, world and national, which produced underdevelopment in the past and still generates underdevelopment in the present" (Frank, 1971:1). Although Frank may spoil his case by overstatement, even his critics like Nove (1974) admit that "many problems of many developing countries are not of a kind to which 'normal' capitalist market relations can supply an effective cure." By leading the academic charge against the prior paradigm of development, and by proposing "dependency theory" (that is, the dependency of poor countries on the rich, and "internal colonies" on their urban imperialists) in its place as an explanation of underdevelopment, Frank caused considerable academic rethinking about development. And the dust has not yet settled. His writings have served an important sensitizing function, but dependency theory is difficult to "prove" empirically, even when tested by sociologists sympathetic to Frank's viewpoint (Oxaal et al., 1975).

ALTERNATIVE PATHWAYS TO DEVELOPMENT

In the very late 1960s and the 1970s, several world events combined with the intellectual critiques just described and began to crack the prior credibility of the dominant paradigm.

1. The ecological disgust with environmental pollution in the developed nations led to questioning whether they were, after all, such ideal models for development. Pollution problems and overpopulation pressures on available resources helped create doubts about whether unending economic growth was possible or desirable, and whether high technology was the most appropriate engine for development.

2. The world oil crisis demonstrated that certain developing countries could make their own rules of the international game and produced some suddenly rich developing nations. Their escape from national poverty, even though in part at the expense of other developed countries, was a lesson to their neighbors in Latin America, Asia, and Africa. No longer were these nations willing to accept prior assumptions that the causes of underdevelopment were mainly internal.

3. The sudden opening of international relations with the People's Republic of China allowed the rest of the world to learn details of her pathway to development. Here was one of the poorest countries, and the largest, that in two decades had created a miracle of modernization. A public health and family planning system that was envied by the richest nations. Well-fed and clothed citizens. Increasing equality. An enviable status for women. And all this was accomplished with very little foreign assistance and presumably without much capitalistic competition. China, and to a lesser extent Cuba, Tanzania, and Chile (in the early 1970s), suggested that there must be alternatives to the dominant paradigm.

4. Finally, and perhaps most convincing of all, was the discouraging realization that development was not going very well in the developing countries that had closely followed the paradigm. However one might measure development in most of the nations of Latin America, Africa, and Asia in the past 25 years, not much had occurred. Instead, most "development" efforts have brought further stagnation, a greater concentration of income and power, high unemployment, and food shortages in these nations. If these past development programs represented any kind of test of the intellectual paradigm on which they were based, the model has been found rather seriously wanting.

Elements in the New Development

From these events grew the conclusion that there are many alternative pathways to development. While their exact combination would be somewhat different in every nation, some of the main elements in this newer conception began to emerge.

1. The equality of distribution of information, socioeconomic benefits, and so forth. This new emphasis in development led to the realization that villagers and urban poor should be the priority audience for development programs and, more generally, that the closing of socioeconomic gaps by bringing up the lagging sectors was a priority task in many nations.

2. Popular participation in self-development planning and execution, usually accompanied by the decentralization of certain of these activities to the village level. Development came to be less a mere function of what national governments did to villagers, although it was recognized that perhaps some government assistance was necessary even in local self-development. An example is the "group planning of births" at the village level in the People's Republic of China, where the villagers decide how many babies they should have each year and who should have them. Another illustration of decentralized development was occurring in Tanzania, where social mobilization activities by the political party, the army, and by radio listening groups help provide mass motivation for local participation in development activities. As President Julius K. Nyerere stated: "If development is to benefit the people, the people must participate in considering, planning, and implementing their development plans" (in Tanganyika African National Union, 1971). People cannot be developed: they can only develop themselves.

And this realization was demonstrated not only in communist and socialist nations, but also in such capitalistic settings as Korea and Taiwan.

3. Self-reliance and independence in development with an emphasis upon the potential of local resources. Mao Tse-tung's conception of national self-development in China is an illustration of this viewpoint, including the rejection of foreign aid (after some years of such assistance from Russia), as well as the decentralization of certain types of development to the village level (as mentioned previously). Not only may international and binational technical assistance be rejected, but so too are most external models of development-leading to a viewpoint that every nation, and perhaps each village, may develop in its own way. If this occurs, of course, standardized indexes of the rate of development become inappropriate and largely irrelevant.

4. Integration of traditional with modern systems, so that modernization is a syncretization of old and new ideas, with the exact mixture somewhat different in each locale. The integration of Chinese medicine with Western scientific medicine in contemporary China is an example of this approach to development. Acupuncture and antibiotics mix quite well in the people's minds as shown by this experience. Such attempts to overcome the "empty vessels fallacy" remind us that tradition is really yesterday's modernity. Until the 1970s, development thinking implied that traditional institutions would have to be entirely replaced by their modern counterparts. Belatedly, it was recognized that these traditional forms could contribute directly to development. "African countries should not imitate the patterns of development of the industrialized

4. Mainly internal causes of underdevelopment	1. Internal and external causes of underdevelopment (amounting to a redefinition of the problem by developing nations).	1. The rise of "oil power" in the years following the energy crisis of 1973-1974 2. Shifts in world power illustrated by voting behavior in the UN General Assembly and in the UN World Conferences at Stockholm, Bucharest, and Rome 3. Criticism of the dominant paradigm by radical economists like Frank and other dependency theorists

is simply a powerful change toward the kind of social and economic system that a country decides it needs (Schramm and Lerner, 1976). Development is change toward patterns of society that allow better realization of human values, that allow a society greater control over its environment and over its own political destiny, and that enables its individuals to gain increased control over themselves (Inayatullah, 1967:101).

We summarize these newer conceptions of development by defining development as a widely participatory process of social change in a society, intended to bring about both social and material advancement (including greater equality, freedom, and other valued qualities) for the majority of the people through their gaining greater control over their environment (Rogers, 1975b)[6].

Thus the concept of development has been expanded and made much more flexible, and at the same time more humanitarian, in its implications.

COMMUNICATION IN DEVELOPMENT

The rise of alternatives to the old paradigm of development implied that the role of communication in development must also change. Previously, mass communication had been considered to play an important role in development, especially in conveying informative and persuasive messages from a government to the public in a downward, hierarchical way.

A decade or so ago, mass communication was often thought to be a very powerful and direct force for development. "It was the pressure of communications which brought about the downfall of traditional societies" (Pye, 1963: 3-4). And there was some support for this position from communication research. An early and influential study of modernization in the Middle East by Lerner (1958) led communication scholars to expect the mass media to be a kind of magic multiplier for development in other developing nations. This period was characterized by considerable optimism about the potential contribution of communication to development, one that was consistent with the general upbeat opinion about the possibilities for rapid development.

Certainly, the media were expanding during the 1950s and 1960s. Literacy was becoming more widespread in most developing nations, leading to greater print media exposure. Transistor radios were penetrating every village. A predominantly one-way flow of communication from government development agencies to the people was implied by the dominant paradigm. And the mass media seemed ideally suited to this role. They could rapidly reach large audiences with informative and persuasive messages about the details of development.

A series of communication researches was launched in various developing nations; examples are my survey in Colombia (Rogers, 1965) and Fry's (1964) in Turkey, which showed that mass media exposure was highly correlated with individual modernization variables. Undoubtedly, however, some of the most solid evidence for the impact of the mass media on modernization came from the six-nation investigation by Inkeles and Smith (1974: 146), who concluded: "The mass media were in the front rank, along with the school and the factory, as inculcators of individual modernization."[7]

Correlational analyses of survey data about mass media and modernization did not exactly prove that the former caused the latter, but they did demonstrate a certain degree of covariance between the two sets of variables. However, another type of communication research design went further in evaluating the role of mass communication in development: the field experiment. In this approach, some mass media channel typically would be introduced in a small number of villages and its development effects would be evaluated by means of the difference in measurements of effects on benchmark and follow-up surveys. For instance, one of the earliest and most influential of such field experiments was conducted by Neurath (1962) in India in order to determine the effectiveness of radio forums. Other field experiments designed along similar lines have been conducted since by communication scholars in Latin America, Africa, and Asia. A special advantage of field experiments is that their results are often relatively visible and easier to implement in large-scale development programs. For instance, the Neurath field experiment led directly to a nationwide radio forum program in India.

But in the early 1960s, despite this considerable research,

the relative power of the mass media in leading to development was mainly assumed rather than proven. Certainly, determining the effects of the media in development is a complicated affair. The audience surveys of communication effects and the field experiments were actually small in number and size; and in the face of this lack of firm evidence on the point, there was a tendency to assume a powerful mass media role in development. Actually, this "oversold position" bore a similarity close to the hypodermic-needle model of media effects in the United States-an overly enthusiastic position which eventually succumbed to empirically oriented communication research (Rogers with Shoemaker, 1971).

Gradually, it was realized that the role of mass communication in facilitating development was often indirect and only contributory, rather than direct and powerful. But this varied upon such circumstances as the media, the messages, the audience and the nature of the intended effects.[8]

CRITICISMS OF COMMUNICATION IN DEVELOPMENT

By the late 1960s and the 1970s a number of critical evaluations were being made of the mass communication role in development. Some scholars, especially in Latin America, perceived the mass media in their nations as an extension of exploitive relationships with U.S.-based multinational corporations, especially through the adversiting of commercial products. Further, questions were asked about the frequent patterns of elite ownership and control of mass media institutions in Latin America and the influence of such ownership on the media content. The 1965-1975 decade saw a rising number

of military dictatorships in Latin America, Africa, and Asia, and these governments stressed the media's propaganda role, decreasing the public's trust in mass communication.

Communication researchers also began to question some of their prior assumptions, becoming especially critical of earlier inattention to (1) the content of the mass media, (2) the need for social-structural changes in addition to communication if development were to occur, and (3) the shortcomings of the classical diffusion-of-innovations viewpoint which had become an important explanation of microlevel development.

Inattention to Media Content

We showed previously that mass media exposure on the part of individuals in developing nations was highly correlated with their modernization, as expressed by their exhibiting modern attitudes and behavior. This seemed logical because the mass media were thought to carry generally pro-development messages (Rogers with Svenning, 1969).

However, a strange anomaly was encountered. When individuals, in developing nations who had adopted an innovation like a weed spray, a new crop variety, or family planning, were asked the sources/channels through which they had learned about the new idea, the mass media were almost never reported. Interpersonal channels with peers totally predominated in difusing the innovation. A possible explanation of this anomaly seemed to lie in the contents of the media messages, which investigation showed seldom to carry specific messages about the innovation (such as what it is, where to obtain it and at what cost, and how to use it), even though there was

much content promoting national development in a general sense (such as news of a new highway being constructed, appointment of a new minister of agriculture, and so on). So when the media content was analyzed it was found to contain very little attention to the technological innovations that were diffusing; they spread most frequently through interpersonal communication (1) from government development workers to their clients and (2) among peers in the mass audience.

Barghouti (1974) content-analyzed the print and electronic media of Jordan and found that "agricultural news occupies an insignificant place among other categories of the content of the mass media."[9] In contrast, there is much political news in the media. Surveys of a sample of Jordanian farmers showed that only 9% mentioned the mass media as their source of agricultural information, but 88% received their political information from the media. Barghouti's study indicates the advantage of combining content analysis of the media with an audience survey (as do Shingi and Mody in their article in the present issue), and suggests the need for much more content analysis of the media messages in developing nations if we are to understand more fully the media's role in development.[10]

Need for Structural Change as well as Communication

Even in the days of the dominant paradigm, it was realized that the contribution of mass communication to development was often limited by the social structure, by the unavailability of resource inputs, and the like. There was much more, of course, to development than just communication and information.

But there was at least some hope that by raising the public's aspirations for modernization, pressure was created toward changing some of the limiting factors on development.

By the 1970s, it was becoming apparent that the social-structural restraints on development were often unyielding to the indirect influences of the media or even to more direct intervention. Under these conditions, it was realized that mass communication's role in development might be much more diminished than previously thought. And communication research was designed to determine just how limiting the structure might be on the development effects of mass communication. Illustrative of such researches is Grunig's (1971) investigation among Colombian farmers; he concluded that "communication is a complementary factor to modernization and development ... it can have little effect unless structural changes come first to initiate the development process." Such studies helped to modify the previously enthusiastic statements by communication scholars about the power of the media.

Diffusion of Innovations and Development

One of the most frequent types of communication research in developing nations dealt with the diffusion of innovations (as noted earlier in this issue). In such research, an idea perceived as new by the receiver - an innovation - is traced as it spreads through a system (Rogers with Shoemaker, 1971). The innovation is usually a technological idea, and thus one can see that past diffusion research fits well with the dominant paradigm's focus on technology and on its top-down communication to the public.

During the 1960s, there was a tremendous increase in the number of diffusion studies in developing countries; these

researches were especially concerned with the spread of agricultural innovations and of family planning methods. In fact, there were about 500 family planning diffusion studies in India alone (Rogers, 1973). Many of them left much to be desired in scientific rigor or in the originality of their design.

A number of criticisms of the assumptions and directions of diffusion research appeared in the 1970s: Marceau (1972), Grunig (1971), Golding (1974), Havens (1972), and Beltrán (1975), as well as the articles by Díaz Bordenave and Röling et al. in the present issue. These critiques centered on the pro-innovation bias of such research and on the propensity for diffusion to widen the socioeconomic gaps in a rural audience. Out of such frank criticism came a number of modifications in the classical diffusion model and in the research designs utilized (such as more field experiments and network analysis), and these newer approaches are now being tried (Rogers, 1973, 1976).

After a tour of 20 U.S. communication research centers, Nordenstreng (1968) criticized North American scholars for their "hyperscience," which he explains as due to the fact that "American communication research has grown up in an atmosphere of behaviorism and operationalism, which has made it correct in technical methodology but poor in conceptual productivity." This comment on communication research in the United States may also apply to diffusion research. Such inquiry often sided unduly with the source "against" the receiver, perhaps a reflection of the one-way linear model of communication and of the mechanistic/atomistic components approach of much communication research. So the needed alterations in the classical diffusion model, such as a greater concern with communication effects gaps and the importance of audience participation in the diffusion process, may also

hold implications for the entire field of communication. (See, especially, the article by Juan Díaz Bordenave in this issue.) (*)

ALTERNATIVE CONCEPTIONS OF COMMUNICATION IN DEVELOPMENT

In this section we describe some of the directions under way in newer conceptions of development communication: self-development, the communication effects gap, and new communication technology.

Self-Development

Most nations in the past have implicitly defined development in terms of what government does to (and for) the people. Decisions about needed development were made by the national government in the capital city and then implemented through development programs that were carried out by government employees who contacted the public (at the operational level) in order to inform and persuade them to change some aspect of their behavior. This top-down approach to development implied a one-way role for communication: the sources were government officials seeking to inform and persuade a mass audience of receivers.

In recent years, several nations (examples are the People's Republic of China, Tanzania, the Republic of Korea, and Taiwan) have recognized the importance of self-development at the village and urban neighborhood level. In this approach, some type of small group at the local level (mothers' clubs in Korea, farmers' associations in Taiwan, radio listening clubs in Tanzania, and communes and/or work brigades in China) takes primary responsibility (1) for deciding exactly what type of development is

(*) "Communication of Agricultural Innovations in Latin America. The Need for New Models.

most needed in their village or neighborhood, (2) for planning how to achieve this development goal, (3) for obtaining whatever government or nongovernment resources may be necessary, and (4) for carrying out their own development activities. The advantages of such a self-development approach are that the rate of accomplishment is often higher than in the case of top-down development by government; the cost to government, which often lacks sufficient resources in most poor countries, is much less and more likely to be affordable; and the nature of development activities is more flexible and more appropriate to changing local needs because of the decentralization of planning, decision-making, and execution.

Naturally, self-development implies a completely different role for communication than in the usual top-down development approach of the past. Technical information about development problems and possibilities and about appropriate innovations is sought by local systems from the central government, so that the role of government development agencies is mainly to communicate in answer to these locally initiated requests rather than to design and conduct top-down communication campaigns. The mass media may be used to feed local groups with information of a background nature about their expressed needs, and to disseminate innovations that may meet certain of these needs. This communication function is illustrated in the radio listening group campaigns for public health and for food/agriculture that were conducted in Tanzania in 1974 and 1975, respectively. The later campaign of a months's duration achieved participation in the radio groups of 2.5 million villagers, nearly 40% of the adult population of Tanzania, while the earlier public health campaign reached 2 million people (Hall, 1975; Dodds and Hall, 1974). Both campaigns led to a great

deal of village-level self-development. For example, in the health campaign, the radio forums decided to build latrines, sweep village streets and paths, dig wells, and adopt other sanitations and preventive health measures. Although the radio programs (and related print materials) focused national attention on health problems and provided information about certain ways of solving them, each of the approximately 100,000 radio forums discussed these mass media messages, applied them to local conditions, decided what health activities they wished to conduct (if any), and then did so with little direct assistance from the Ministry of Public Health. So the role of mass communication in self-development is more permissive and supportive than in the usual top-down development approach, where local citizens are told what their problems are and persuaded to follow certain specific lines of action to solve them, usually involving a good deal of dependence on government.

Mass communication may be even less directive in assisting the self-development activities of village groups in Korea and China. Mothers' clubs in the Republic of Korea are organized in about 24,000 villages; originally, the government assisted their initiation in 1968 to promote family planning diffusion and to deliver contraceptives to adopters. Typically, after several meetings, a mothers' club would begin to pursue whatever types of group activity it felt was needed; improved nutrition, food production and preservation, sanitation, child health, cooperative savings, female equality, and so on. A monthly magazine sent to each mothers' club leader describes the self-development accomplishments of certain exemplary clubs and thus inspires others to greater development efforts (Kincaid et al., 1973; Park and others, 1974; Rogers, 1975a).

Somewhat similarly, in the People's Republic of China mass communication circulates information about the self-development accomplishments of a particular village to other such local systems. For example, the idea of the "group planning of births" (in which all of the members of a commune or labor brigade or urban neighborhood committee meet annually to assess their demographic situation and to decide their fertility goals for the year ahead, including which parents are to have a baby and which are not) began in one local system in about 1971 (Chen with Miller, 1975). This innovative approach to population planning was featured in radio and newspaper messages, and the idea quickly spread throughout China and is now widely adopted. "Point-to-point" conferences were held in which visiting delegates from other villages traveled to observe the group planning of births, to discuss its underlying principles, and then returned to their village or neighborhood to discuss it with their peers and decide whether or not to adopt it. Similarly, the idea of "barefoot doctors" (non-professional health/family planning aides) began in one village and spread horizontally in a rapid fashion throughout the nation (Chen, 1973). The Peking government undoubtedly supported the idea of barefoot doctors and of the group planning of births, but they were largely diffused and implemented through self-development activities, assisted directly by mass communication.

Key elements in these self-development approaches just described are participation, mass mobilization, and group efficacy, with the main responsibility for development planning and execution at the local level. The main roles of mass communication in such self-development may be summarized as (1) providing technical information about development problems and

possibilities, and about appropriate innovations, in answer to local requests, and (2) circulating information about the self-development accomplishments of local groups so that other such groups may profit from others' experience and perhaps be challenged to achieve a similar performance.

The Communication Effects Gap

Needed are more appropriate and adequate means for testing the communication gap hypothesis. This hypothesis was originally stated by Tichenor et al. (1970) to imply that one effect of mass communication is to widen the gap in knowledge between two categories of receivers (high and low in socioeconomic status). It often has been overlooked that the "gap" was originally proposed only as an hypothesis rather than a proven fact. I feel that several important changes first must be made in the statement of the gap hypothesis before it can be adequately tested.

(1) It should deal with the attitudinal and over behavioral effects of communication as well as just "knowledge"; thus, I propose calling it the "communication effects gap" hypothesis.

(2) The hypothesis should not be limited to mass media efforts alone, but should include also the differencial effects of interpersonal communication and the joint effects of mass media plus interpersonal communication, as measured by network analysis.

(3) There need not be just two categories of receivers, nor must the gap be found only on the basis of a socioeconomic status variable.

Past research on the communication effects gap hypothesis, while notable for its pioneering nature, has suffered somewhat from the fact that the hypothesis usually was imposed on the data after they were

gathered for another purpose. Ideally, in order to test the communication effects gap hypothesis, one would prefer:

(1) That data were gathered before and after a communication event (like a campaign) in a field experiment rather than mainly using correlational analysis of one-shot survey data as has sometimes been done in the past;

(2) That the "after" data might be gathered at several points in time to determine whether or not the gap is only a short-term phenomenon;

(3) That a control group be included in the design in order to remove the effects of a growing gap due to other (than communication) causes; and

(4) That the interpersonal communication channels linking the receiver categories be measured and network-analyzed so as to determine the effect of such audience interconnectedness in modifying or magnifying the gap effects of the main communication event studies. Essentially, the network analysis seeks to explore whether or not a "trickle down" occurs from one of the two receiver categories to the other, and how soon.

Probably the reasons why methodological considerations such as these have not already been utilized in testing the communication gap hypothesis are the relatively high cost and the length of time that would be required. But the articles by Röling et al. and by Shingi and Mody in this volume show that these problems can be overcome. (*)

One important function of such improved research is the light that it may be able to shed on why the communication effects gap generally occurs. A possible explanation in many cases is that the

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(*) "The Diffusion of Innovations and the Issue of Equity in Rural Development"and "the Communication Effects Gap: A Field Experiment on Television and Agricultural Ignorance in India", respectively.

"ups", perhaps as an artifact of gaining their original superior status, possess greater receptivity to the change-oriented communication messages and hence show greater response to them than the "downs." Also the "ups" may possess greater slack resources which can be utilized for innovation -larger farmers responded first by adopting the miracle seeds of the Green Revolution. Furthermore, the sources or producers of the change-oriented messages are usually more homophilous with the "ups" than with the "downs," and hence these messages have relatively greater effects on the "ups." Finally, the lack of integration of the "downs" in interpersonal communication networks means they are not even reached through a trickle-down.

If more equitable distribution of socioeconomic benefits were indeed a paramount goal of development activities, the following communication strategies might be considered in a developing nation:

(1) Use the traditional mass media as credible channels to reach the most disadvantaged audiences.

(2) Identify the opinion leaders among the disadvantaged segments of the total audience, and concentrate development efforts on them.

(3) Use change agent aides who are selected from among the disadvantaged to work for development agencies in contacting their homophilous peers.

(4) Provide means for the disadvantaged audience to participate in the planning and execution of development activities and in the setting of development priorities.

(5) Establish special development agencies that work only with the disadvantaged audiences. An example is the Small Farmers Development Agency in India, founded in 1970 to provide agricultural information and credit only to small-sized farmers.

(6) Produce and disseminate communication messages that are redundant to the "ups" because of their ceiling effect, but which are of need and interest to the "downs." (See, for example, the study by Shingi and Mody in this issue.)

Much further research is needed on the communication effects gap; this work has only begun. But at least we are beginning to realize that the gap is not always inevitable.

New Communication Technology and Development

What is the potential of new communication technology, such as satellite broadcasting, cable television, and computers, for facilitating the process of development in Latin America, Africa, and Asia? At least in the immediate future of the next ten years it will probably be fairly limited, although satellite television broadcasting is the operation at present in India of an experimental basis, and nationwide satellite television broadcasting systems are soon to be launched in Iran and Indonesia.

But what is really new about communication technology is not the technology per se as much as the social technology of how the new communication devices are organized and used. Much of the total effect of a communication system rests on the program or software aspects, on how the audience is organized to receive and discuss the messages, and how feedback is conveyed to the communicators.

DIRECTIONS FOR COMMUNICATION RESEARCH

The newer paradigms for development pose certain implications for communication research as well as for communication activities.

The Role of Research in Change and Development

Mass media institutions may tend to side with the "establishment" in most nations; hence, the content of most mass media messages is seldom designed to radically alter the existing social structure in a society. Mass communication in development usually espouses an incremental change approach in which change is promoted within the existing structure rather than directly seeking to alter structural constraints to development. This point is stated or implied in each of the articles in this issue, and most directly in the work of Beltrán, Díaz Bordenave, and Whiting.(*)

Some radical critics of communication research feel that it also tends to side with the existing social structure and to reflect mainly an incremental change position. Most present-day communication research requires a team of research assistants, considerable data-gathering costs, and a sizeable budget for computer-dependent data analysis. The relatively high price of most contemporary communication research may influence the nature of such research. Research funds for investigations of communication in development usually are provided by national governments, foundations, large corporations, or universities. Seldom do the funds come from urban poor or villages, the main targets of development efforts. So the sponsorship of communication research tends to influence it to concentrate on studying a range of problems that reflect the priority concern of government rather than that of the public, of elites rather than the mass audience, of communication sources rather than communication receivers, of the establishment rather than revolutionary attempts to alter the social structure.

Certain communication scholars have become aware of this possible bias in their research and have sought to launch research projects that deal with topics of special benefit to those sectors of society that

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(*) "Alien Premises, Objects, and Methods in Latin American Communication Research" (Beltrán)
Días Bordenave see page 27; "How Does Communication Interface with Change? (Whiting)

cannot sponsor research themselves. Ultimately, this approach amounts to greater effort (than in the past) to free the selection of what is studied from the influence of those who sponsor communication inquiry. One means of doing so is to seek to design research that is very low-cost in nature so as to free it from possible sponsorship influences.

A successful illustration is provided by the study reported in the article by Prakash Shingi and Bella Mody in the present issue-a field experiment on agricultural television's ability to close the communication effects gap between advantaged and disadvantaged farmers in India. Shingi and Mody designed a "natural experiment" in which the treatment (two television programs) was produced at no cost to their study. The data base is rather modest (farmers in only three villages), and the authors gathered their own data through personal interviews with the farmers before and after the television broadcasts.

The total budget for the Shingi-Mody field experiment: only about $70 (U.S.). While there may be additional hidden costs (their salaries, for example) this experiment is probably one of the lower-priced researches in the field of development communication where big budgets are generally the rule. Another example of low-cost communication research is Granovetter's (1974: 141) study of job information in a Boston suburb, where his total budget was about $900.

Field Experiments and Current Practice

In addition to the cost and the sponsorship of communication research, the type of research design that is employed may also affect how directly the research results can contribute to social change versus reifying the existing social structure. Niels Röling and his coauthors, in this issue, argue for field experimental designs rather than surveys, if diffusion researches are to influence development policies in the direction of gap-narrowing communication strategies.

The general point here is that field experiments will be more useful research designs in future communication studies investigating how development communication might be, rather than in just describing the "current practice" of such communication activities. In an era when important changes are occurring in our definition and understanding of the concept of development, and when accompanying changes are being made in the communication aspects of development, we expect that field experimental approaches will become more common than they have been in past communication research.

The use of field experimental designs by communication researchers to study development problems moves research toward development programs. It puts the communication scholar in the role of communication/development designer as well as that of research evaluator.

Focus on Interpersonal Networks

Network analysis is a type of research in which relational data about communication flows or patterns are analyzed by using interpersonal relationships as the units of analysis (Rogers, 1976). The advantage of network analysis in comparison to the more usual monadic analysis (where the individual is the unit of analysis) is that the social structure can be overlayed on the communication flows in order to improve the scientific understanding of both the structure and the message flows.

Past communication research has frequently identified opinion leaders in a mass audience and investigated their role in the interpersonal transmission of mass media messages. But until network analysis began to be utilized in such researches, little of an exact nature could be learned about where the opinion leaders obtained the messages, and specifically to whom each such opinion leader disseminated the message.

Thus, we see that the passing of the dominant paradigm of development led to new and wider roles for communication in development. The exact nature of such newer conceptions will only become clear in the years ahead, as communication research helps illuminate the new pathways to development.

NOTES

1. The following section is adapted from Rogers (1975b).

2. A critique of centralized economic planning of development in light of actual accomplishments appeared in a chapter by Caiden and Wildavsky (1974: 264-292) with the charming title "Planning Is Not the Solution: It's Part of the Problem."

3. Karl Marx in Das Kapital stated: The country that is more developed industrially only shows, to the less developed, the image of its own future." Lerner (1967: 115) stated: "Indeed, the Western model is virtually an inevitable baseline for Asian development planning because there is no other model which can serve this purpose." This predominance of the Western paradigm of development was probably correct at the time of Lerner's writing.

4. An assumption criticized by Portes (1973): "Modernity as a consequence of Western structural transformations may have little to do with, or be in fact detrimental to, causes of development in Third World nations."

5. Caplan and Nelson (1973) argue that social scientists are more likely to accept an individual-blame definition of a social problem that they investigate than a system-blame definition. For instance, unemployment and poverty are considered to be due to laziness, not to the unavailability of work and to blocked opportunities.

6. Note how my thinking has changed as to the definition of development in the past seven years: "Development is a type of social change in which new ideas are introduced into a social system in order to produce higher per capita incomes and levels of living through more modern production methods and improved social organization" (Rogers with Svenning, 1969).

7. In these investigations, modernization was considered as the individual-level manifestations of development: "Modern man is an informed participant citizen, has a marked sense of personal efficacy, is highly independent and autonomous, and he is ready for new experiences and ideas" (Inkeles and Smith, 1974: 290).

8. A much-quoted list of what the mass media can and cannot do in development was provided by Schramm (1964).

9. Similar conclusions about the lack of agricultural content in the mass media in Latin America were cited in the Beltrán article in this issue.

10. This point is also made by Golding (1974).

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