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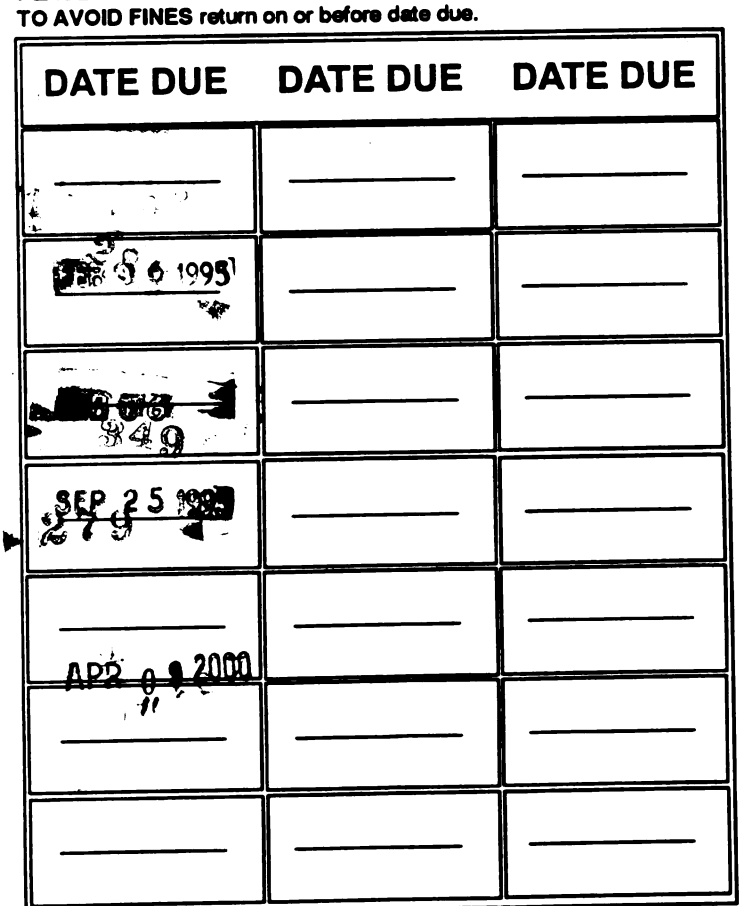

THE USE OF NEW COMMUNICATION TECHNOLOGIES IN THIRD WORLD COUNTRIES: A COMPARISON OF PERSPECTIVES

By

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ABSTRACT

THE USE OF NEW COMMUNICATION TECHNOLOGIES IN THIRD WORLD COUNTRIES: A COMPARSION OF PERSPECTIVES

By

Lai Si Tsui

There is a continuing debate in the field of communication research on the use of new communication technologies in Third World countries. The mainstream perspective posits that these technologies have unique features capable of promoting development in the Third World. The critical perspective posits that this represents a revival of the technocentric modernization paradigm, and that its policy prescriptions will repeat the failure of the modernization paradigm. This thesis employs a historical documentation analysis, and a discourse analysis of the literatures of the opposing perspectives, and to see whether they are compatible. It concludes that these perspectives, with contrasting epistemological, theoretical, and methodological positions, are incompatible. The writer sees the attempt to search for resolution of the opposing perspectives as futile, and instead, suggests the construction of a theoretical model of new communication technologies and Third World societies based on the critical perspective which is found to be more satisfactory.

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INTRODUCTION

1.1. Problem

There is a continuing debate in the field of communication research on the use of new communication technologies in Third World countries. Views vary widely on the adoption of these technologies in Third World countries. New communication technologies include satellite-based TV broadcasting and long distance telephony, video cassette recorders (VCRs) and such computer-based, interactive technologies as electronic messaging systems, computer bulletin boards, and teletext and videotext (Rogers 1989, p.24).

Scholars who are optimistic about the technologies posit that these technologies have unique features capable of promoting development of Third World in the way one-way mass media technologies cannot. They can provide the range of interactions necessary for two way information exchanges and rapid adjustment of information to local requirements. These technologies also enhance productivity, efficiency in resource management, and facilitate social participation (Parker, 1984; Hudson, 1982; Rogers, 1986, 1989). The technologies may also help Third World countries to leapfrog the agricultural/industrial stage to post-industrial or

information society stage (Rogers, 1989). Proponents of these technologies tend to see the causes of underdevelopment are a lack of information, resources, and reliable communication channels, and hence, they actively promote the transfer of technologies to Third World countries.

Scholars who are pessimistic about realizing the hopeful potentials of these technologies, speak against such transfer. They see the root cause of underdevelopment as the unequal access to resources and power. New communication technologies that are controlled by transnational corporations and national elites would reinforce the unequal distribution of resources and power. The importation of these technologies would also drain foreign exchange resources, and hinder development of indigenous technological capacity in the long term. This would eventually subject Third World countries to technological, economic and cultural dependence on First World countries (Schiller, 1976a; Hamelink, 1985, 1986b, 1988).

Some scholars who are critical of the use of new communication technologies, and the imposition of the First World dream of information society on Third World countries, however, refuse to take a pessimistic stand. They argue that the outcome of using new technologies is not predetermined. The impact of technologies is mediated through the institutional arrangement or social forces, of which technologies form a part. These technologies carry threats as well as promises. Therefore, they take a cautiously

optimistic approach, and advocate critical adoption strategies (Teheranian, 1986, 1988; Servaes, 1988; Jayaweera, 1987).

The first view is generally supported by the establishment, and vested interests like the ITU (International Telecommunication Union), World Bank, transnational corporations and national governments that welcome the associated policy prescriptions. This view dominates the academic and policy making arenas.

Scholars of the latter two views share the basic tenet that this view represents a revival of the technocentric modernization paradigm -- as old wine in new bottles. The policy prescriptions for modernization were not going well in Third World countries in the past decades. The policy prescriptions offered by this predominant view would again repeat the failures of the modernization paradigm.

The question is: is the challenge by those who are critical of the predominant view valid? What are the arguments of the opposing views? Which view is more convincing?

1.2. Thesis Statement

This thesis will deal with the issue of the adoption of new communication technologies in Third World countries. Scholars use a number of terms like, information technologies, telecommunications, and new communication technologies. Information technologies basically refer to computers and related technologies. Telecommunications

include telephony and satellite communication technologies. The discussion on the use of new communication technologies encompass all these technologies. Different scholars with specialized scope of interest may use different terminologies. In this thesis, I shall use the general term "new communication technologies".

Third World countries are generally those that were ex-colonies, are newly independent, non-aligned, poor, and non-industrialized countries in Asia, Latin America, Africa and the Caribbean. First World countries include those industrialized market economies of the US, Canada, Western Europe, and Japan. When I use these terms, I employ them only as an abstract category that denotes certain common characteristics. I acknowledge the intense diversities that prevail among different countries.

In this thesis, I will label the two contrasting perspectives as "mainstream" and "critical" perspective. I call them perspectives, rather than paradigms or schools, because a paradigm or a school denotes a particular structure of thought, and a set of institutional practices. I think practitioners in the field do not really operate in the paradigmatic sense as such. Instead, the coexistence of a plurality of theoretical perspectives is discernable. Although I do not discern a strict sense of paradigmatic thinking, I can still see scholars sharing similar perspectives and traditions, while rejecting the opposing perspectives[1]. I use the term "perspective" as it denotes

not only the view of communication technologies and Third World development, but also the theoretical and empirical base scholars use to justify their views.

The predominant "Mainstream perspective" is optimistic about the impacts of new communication technologies in Third World countries. Scholars focus on the research on the economic and social benefits accruing from of these technologies. They tend to actively promote the adoption of these technologies, and are concerned with the removal of the organizational and infrastructural constraints in Third World countries for the realization of the potential of these technologies.

"Critical perspective" is skeptical of the positive impacts claimed for the technologies promoted by the mainstream perspective. Instead of focusing on the potential of technologies, scholars analyze the social shaping of the technologies. They urge for a cautious approach toward the adoption of First World technologies in Third World contexts.

The contrasting perspectives have very different research foci, use different research methods, and arrive at different conclusions. These reflect the different theoretical, methodological, and epistemological positions different scholars take. On the other hand, the development and survival of social science (including communication) ideas is determined not only by its theoretical and empirical grounds, but also by the supports from various institutional forces.

This thesis will compare the two perspectives, their underlying theoretical, epistemological and methodological positions, and highlight the particular institutional affilation that is influential in shaping and supporting scholars' research programs.

1.3. Research Questions

1. What are the differences in the mainstream perspective and the critical perspective?
2. Are the two perspectives compatible?
3. If yes, in which areas should both learn from each other? If not, which perspective better explains the issue? Are there any inadequacies in this perspective? How can it be improved?

I shall discuss the scholars who represent the different stream of thoughts within each perspective, and who are responsible for laying the theoretical foundations of the perpectives. For the mainstream perspective, I choose Parker and Hudson who have spearheaded the research on telecommunications and development, and who incorporate many newly emergent concepts of development; Rogers who has attempted to revise the modernization paradigm but remains a "diffusion of innovation" theorist; and Pool who is an orthodox modernization theorist.

For the critical perspective, I choose Schiller, who has led critical communication studies in the US, and has been criticized as a Luddite; Hamelink, who is a consistent advocate of the "dissociation" strategy; Jayaweera and

Servaes, who advocate critical adoption of the new communication technologies; and Tehranian, who takes a cautiously optimistic view to the use of technologies, and sees in small media the hopeful potential to propel grassroots movements.

1.4. Methods

This thesis will compare the constrasting perspectives, their description, explanations, predictions, hypotheses and recommendations on the use of new communication technologies in Third World countries, and their underlying logic (in terms of theoretical, methodological and epistemological positions). I will use a historical documentation analysis, and a discourse analysis[2] of the literatures to guide the discussion.

The historical documentation analysis will involve two major components. Firstly, there will be a critical examination of the work of each scholar. Secondly, particular attention will be paid to the metatheoretical conditions and institutional support which help shape the perspectives. This will include the nature of the theory or theories preceding the evolving of the perspectives, and the social science and communication research traditions the scholars identify with.

Unfortunately, not all scholars explicitly state their sources of influence. Communication study is an institutional product that draws its theoretical and methodological base from selected research traditions in

social science disciplines like Sociology, Political Science, Psychology, and Economics. Some communication scholars, especially the mainstream scholars, usually do not state the theoretical base, and claim that they avoid, as far as possible, subjective values permeating research. But it is apparent that all scholars do base their thinking on certain social theories and research traditions.

Therefore, I shall do a discourse analysis, and attempt to find out from their arguments the schools or traditions they associate with, and the underlying theoretical, methodological, and epistemological positions they take. This is an attempt to uncover the logic underlying their argument, and to locate their central and peripheral arguments. This is especially important, because many scholars have claimed that they have incorporated new principles, and have revised the scope of their concern and methods to address changes in the development paradigm. By uncovering the underlying logic, I will try to find out whether the changes in their theories are peripheral or fundamental.

1.5. Chapter Arrangement

This chapter is an introduction to the thesis. Chapter 2 is a review of the comparative literature on the mainstream and critical perspectives on development communication, communication technologies and development, and international communication and communication research in general.

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In chapter 3, I shall provide a brief background of the changes in development paradigms that offer the theoretical bases for communication and development, and the discussion of communication technologies and development. I shall examine theories of the selected scholars, and highlight their differences between and within the mainstream and critical perspectives. This will answer the first research question, and provide a base for the discussion of the issue of compatibility of the constrasting perspectives.

In chapter 4, I shall discuss the differences in their theoretical base, research methods, and the underlying theoretical, methodological, and epistemological positions. Based on this comparison, I shall answer the second research question -- the question of compatibility. I shall state out my reasons as to why the perspective I choose is a more satisfactory one.

In chapter 5, I shall answer the second research question -- in which areas should both learn from each other if they are compatible, or, if incompatible, select the better perspective and suggest ways to improve it.

Chapter 6 will sum up the discussion and highlight the suggestions for reflections I make in chapter 5.

1.6. Rationale for Study

There are very few comparative studies on the different perspectives on communication technologies and development. One reason is that the development and application of the new communication technologies is a comparatively new phenomenon.

Active promotion by the First world to the Third World is a recent, one and a half decade phenomenon. This is an entire new area. Communication scholars who do research on this topic are mainly those who have worked on "communication and development", and "international communication". Articles which have been written are very brief, and they do not focus particularly on communication technologies in the Third World. This thesis is an attempt to fill in this nearly blank area of communication literature.

I argue that the debate on communication techonlogies and Third World development is not a scholarly exercise, but that it bears important implications for the design of technological policy of Third World countries, and strategies of social intervention for social movements.

Many Third World governments have already rushed to adopt the new communication technologies (Hamelink, 1981). The trend seems to be pervasive. The pressing issues are: How to, and to what extent to adopt? For what? For whom? At whose cost? At what cost? And in what ways will Third World societies change? The answers and the underlying arguments are important for designing policy guiding technology adoption, and for developing Third World countries.

Development experiences of the past decades have shown that the reliance on national governments and experts does not bring genuine development for the benefit of the underprivileged majority in the Third World. Various grassroots communities and non-governmental organizations

have emerged and organized themselves to search for alternative development. What kinds of changes will the use of the new technologies in the existing social environment bring to the society, and how will they affect the space available for grassroots communities and non-governmental organizations to maneuvre? The understanding of the probable changes is also important for designing strategies of social intervention for these communities.

2. LITERATURE REVIEW

There are few comparative eassys directly dealing with the use of new communication technologies in Third World countries. Jacobson's (1985) examines the dispute over the mainstream and critical perspectives on development communication. Pool and Schiller has a face-to-face exchange of views on communication research, moderated by Hamelink. The dialogue was printed in the Journal of Communication (Summer, 1981). In each of these two essays, there is a session, particularly devoted to communication technologies in Third World countries.

There is some ongoing dialogue within the field of communication as a whole, rather than focused dialogue on particular topics. Halloran (1981, 1987) and Rogers (1982) have attempted to discuss the constrasting perspectives on international communication and communication research respectively. The special issue of the Journal of Communication (Summer, 1983) continues to generate comment, controversy, and new contributions. The ferment in the communication field is also of great relevance to my discussion in this thesis, because the perspective on communication technologies and development draws from development theories, communication and development, and communication research in general. I shall summarize the discussion, on what the differences between the opposing perspectives are, and how they differ from each other.

Mainstream scholars tend to see the differences only in the research methods employed. Rogers employs the "empirical" and "critical" schema to distinguish between the two perspectives. He attempts to summarize the views of the outsiders and the insiders of each perspective. To him, empirical researchers emphasize explaining effects on an audience. Critical scholars emphasize analyzing the control of a communication system. The former are more concerned with objectivity and empiricism in communication research, while the latter are more ideological and value-laden in their work.

Rogers finds that there is no basic incompatibility between the two perspectives. He raises the question: "Will the empirical and critical schools ever move closely together in their intellectual positions?" (1982, p. 139) Rogers suggests that scholars should respect each other's perspectives, and to replace debate by a realization that each may have a lot to learn from one another. The scholarly community should retain pluralism (i.e., the position that all points of view deserve to be heard and considered), he claims. Rogers advises "empirical" scholars to enlarge the scope of their research to include communication contexts, and the ethical aspects of the communication process. They should use more qualitative research methods to supplement quantitative methods, he advocates.

Among mainstream scholars, Pool (1980, 1983) has provided the most disparaging comments on the critical

perspective. He complains that many of the critical communication studies do not constitute social science research. These studies cite some social science literature and empirical data to support their arguments, but do not generate data and facts to support their claims, he points out. To Pool, these are polemical and ideological essays.

Stevenson (1983) proposes to examine whether "critical analysis" meets the essential test of empirical verification. He criticizes that critical researchers are often unclear as to whether they are measuring systems and inferring about individuals, or measuring individuals and inferring about systems. In the end, he charges critical research with generalizing incorrectly, using pseudo-data, and descending into mere polemic. Both Lang (1983) and Blumler (1983) also accuses the critical perspective of being anti-empirical; the supposedly empirical phenomena tend to be "established conceptually and then illustrated rather than weighed" (Blumler, 1983, p.170).

Critical scholars, while recognizing the differences in research methods, see that the fundamental differences are theoretical, methodological, epistemological and value orientation of researchers.

Hamelink (1983b) opposes Rogers' empirical/critical dichotomous scheme that excludes the empirical work of the critical. He argues that the empiricist's view of legitimizing quantitative-statistical methods as the only

scientific way of knowledge production as the practice of repressive science.

Halloran (1981, 1983, 1987) criticizes mainstream perspective as representing a position "where 'scientific' is defined solely or mainly in terms of method, and where little or no attention is given to theory, concepts or the nature of the relevant substantive issues and their relationship to wider societal concerns" (1987, p.137).

Schiller (1983) crticizes conventional (mainstream) research that it does not incorporate history, and socio-economic contexts into their analysis, and tends to reinforce the status quo. Critical researchers look at the historical and socio-economic contexts and focus on analyzing the existing power arrangements.

Gerbner supports the critical positions and defines "critical" in an inclusive rather than combative sense. He agrees that the dialogue between critical and administrative communication research[1] is not primarily methodological but is about "how to make research most productive in illuminating the dynamics of power in communications and of communications in society" (1983, p.356). He summarizes both the critical and social responsibilities of researchers: "The critical task of a discipline is to address the terms of discourse and the structure of knowledge and power in its domain and thus to make its contribution to human and social development" (1983, p.362). In short, he wants critical research to reveal the exercise of power.

Some scholars also point out the epistemological difference that they see as fundamental. Hamelink (1980) states that the mainstream perspective rests on the tenets of positivism. Fundamental to this approach is that all experience must be empirically verifiable. All phenomena can be broken down in fragments. By observing selected parts of reality, a scientist can uncover causal connections and establish universally applicable theories. Theory is seen as a coherent set of hypothesis, conceptual and pragmatic principles for formulating the general frame of reference as a field of inquiry. The critical perspective takes a dialectical position. Reality is seen as a totality that is always changing. Reality cannot be examined in a fragmented way. Historical and structural analyses are advocated to examine communication phenomena.

Slack and Allor (1983) criticize the oversimplification, by categorizing in terms of simple dichotomy, of differences between the two perspectives: empirical versus critical, administrative and critical, and repressive versus emancipatory science. In their opinion, these dichotomies are insensitive to the diverse range of critical approaches, while mystifying the complex political and epistemological commitments that underlie and link that diversity. Slack and Allor state, "The political question of social power, linked with the epistemological question of causality, is what ultimately distinguishes the critical approaches" (1983, p.215).

Slack and Allor (1983) state that mainstream scholars believe that social reality can be explained in simple, linear-causality between phenomena, isolated from its historical and structural contexts. Such an approach does not challenge the existing power structure, and thus is supported by the prevailing ideology and vested interests. Critical research arises to fracture the simple, linear-causality, and confronts the vested interests. According to Slack and Allor, by not placing politics and epistemology at the center of distinction between the critical and non-critical approaches, it is possible for Rogers to call for the adoption of "only certain aspects of the critical school." Such a model of convergence fails to acknowledge the significance of differences between the contrasting perspectives. Such convergence may result in cooptation of the critical perspective rather than a dialogue with it. On the question of compatibility of the two perspectives, Slack and Allor agree with Hamelink's proposition.

Jacobson (1985) posits that epistemology plays a central role in the underlying differences between the opposing perspectives on development communication. The mainstream perspective adopts the positivist position that upholds the objectivist conception of science. The shift in the philosophy of science has resulted in a change in concepts of science -- from that of traditional empiricism toward a less objectivistic conception of science. Nevertheless, in the practice of research, the empiricist

mode is still seen as the only standard of scientific investigation, even if more cautiously than before. The traditional assumptions which biased our development concepts, in the name of objective social theory, remain. Critical scholars are very diverse in their analyses. They share in their aim to fracture the Western models of development, and the reassertion of the normative value principles to guide research. He distinguishes among Schiller and Matterlart, Teheranian, and Hamelink with regard to the diverse sources of critical traditions.

Melody and Mansell (1983) also see that there are fundamental conflicts not only in theory and methods, but also in the researcher's orientation of pro-status quo or pro-change of the existing power arrangements. They state that researchers' value orientations permeate the practice of research.

Mosco (1983) posits that critical perspective does not end with a description or an explanation of the existing reality, but is guided by an explicit value, i.e., to free people for self-determination.

To conclude the general debate, mainstream scholars criticize critical research as anti-empirical, pseudo-scientific, and rejecting quantification. Critical researchers criticize mainstream research as epistemologically positivist, methodologically empiricist, theoretically acontextual, ahistorical and apolitical, and

permeated by the value orientation of supporting the status quo.

These comparative essays tend to assume that each group of communication researchers is homogeneous. Overgeneralization, in short essays that deal with broad topics, seems to be inevitable. Jacobson (1985), and Slack and Allor (1983) recognize the diversity among critical scholars. Jacobson recognizes the differences in the analysis among Schiller and Mattelart, and Hamelink and Tehranian. Yet the discussion is very brief.

Since the issue is development issue, researchers' views certainly are not only guided by the social science research traditions, but also developed along the changing development paradigms. These will be discussed in the following chapter.

3. DIFFERING PERSPECTIVES: AN OVERVIEW

3.1. Background

The field of communication and development has been defined within the context of development theories. The prevalent development theories, as well as the development experiences of Third World countries have strongly influenced the perception of development among researchers. Over the last 40 years, these development paradigms have undergone many changes. Such changes have brought revisions to the conception, and the ends and the means of development.

3.1.1. "Communication and Development" in the context of the modernization Paradigm

In the 1960s it was from the modernization paradigm that communication researchers who were concerned with Third World development derived the concepts of development for their own work. The main goal of development was to achieve economic growth. To achieve this Third World countries were encouraged to carry out industrialization and agricultural modernization, to integrate rural and metropolian areas, and to practise export-led growth development strategies.

The infant field, "Communication and Development", in the search of academic legitimacy and a distinct identity, gave precedence to the affirmative studies of the power of mass communication (a powerful tool of the government's planners), to foster modernization among people, and persuade

them to participate in the development plans designed by the government or the foreign experts.

A number of scholars launched a series of researches and field experiments in some Third World countries. Lerner's "The Passing of Traditional Society" (1958), laid out the theoretical foundations of the field by building a macro-explanation of the role of mass media to modernization and urbanization. They tended to assume the powerful effects of mass media on development. Rogers (1963), with his explication of the diffusion of innovations, helped accelerate research on the importance of interpersonal communication in persuading Third World peoples to adopt modern ideas and technologies. Schramm (1964) went further to broaden the role of mass media in national development.

3.1.2. Emergence of "cultural imperialism" thesis with the rise of dependency paradigm

In the late 60s, modernization paradigm was subjected to strong criticism by social scientists in the Third World, particularly in Latin America, because its policy prescriptions were not going well. Third World countries had experienced greater rich-poor gap, unemployment and further stagnation. The extensive debate in Latin American academia on the problems of underdevelopment gave rise to the "Dedepency Paradigm".

Dependency theorists criticized the inability of the modernization paradigm to explicate the cause of underdevelopment in the Third World, that was, to them due to

the structural (especially economic) dependence on the First World. The root cause was seen as exogenous rather than endogenous, a reverse of what the modernization paradigm posited. The dependency paradigm was well received by some social scientists in the Third World as well as First World, and a general climate of intellectual change was formed.

Critical communication scholars posited that mass media and its programming were seen as tools of transnational corporations and First World countries to extend the "cultural imperialism" over Third World countries. Schiller (1981) and Hamelink (1983a) advocated "dissociation" of Third World countries from the global economic system. Mattelart (1979) proposed that the international labor movement should counter the domination of transnational capitalism.

3.1.3. Emergence of "another communication" in the context of "another development" approach

In reaction to the exogenist bias of the dependency paradigm, a number of critical scholars are now proposing approaches to development that are alternatives to both dependency as well as modernization theories. They see the root cause of underdevelopment as an articulation of both internal and external factors, rather than the either-or explanation offered by the previous paradigms. The most distinct assumption is that there is no universal model of development, and that development is an integral, multidimensional, and dialectical process that differs from society to society. Therefore each society has to define its

own strategy for development. Development itself should be examined holistically to conclude social, cultural, and religious elements, and not just economic.

They propose Third World countries seek for "another development". The concept of "another development" can be traced back to the 1977 anthology of papers by Latin American and Asian scholars in the Dag Hammerskjold Foundation's journal, Development Dialogue. "Another development" entails the provision of basic needs; endogenous and self-reliant development for the preservation of the dignity and national sovereignty of nations and regions and the cultural identities of communities; equitable access to the world's natural resources and the preservation of the global and local ecosystems; and participatory democracy. They, however, do not deny that the need for structural changes in social relations, in the economy and in the power and class structures proposed by dependency theorists are vital.

Corresponding to the emergence of "another development" approach, there arose the concept of "another communication" in the field of communication and development. "Another communication" has been illuminated by scholars including Berrigan (1979), Bordenave (1977), Hamelink (1983a), McAnany (1980) and White (1984). In order to set up a participatory communication model, they emphasize the need for horizontalization, deprofessionalization, decentralization, access, symmetrical exchange, social participation,

integrated media and technologies, multiplicity, and smallness of scale and locality.

3.1.4. Rise of information-communication technology (or telecommunications) and development

The modernization paradigm has never really "passed from the scene", inspite of Rogers' proclamation to the contrary (1976). Though dependency theory and another development approach did exert some influence among scholars and researchers in development communication, the view of Lerner, Schramm and Rogers continued to prevail in national government policies. With the availability of new communication technologies, Third World governments renew the hope of "leapfrogging" certain stages of development and "catching up" with the West (Mody, 1987). "Appropriate technologies" and "grassroots participation" that dependency theory and another development emphasize, are unattractive, time consuming, idealistic, and are not in line with the interests of Third World governments.

There is a popular saying in the critical literatures that "the last few years have witnessed a vigorous revival of the 'modernization' paradigm in both theory and practice, particularly in the aftermath of recent developments in new communication technologies" (Communication Research Trends, 1988/89). In my opinion, we have to be cautious about overlooking the variety of the mainstream theories and oversimplying their sophistication. There are certainly continuities as well as discontinuities from the old

modernization paradigm, that are to be examined in the section 3.2 of this chapter.

None of the paradigms or approaches have passed away. Each of them has emerged as a critique of the inadequacies of the earlier models. Modernization paradigms, while declining in influence in academia, are constantly revised and supported by the transnational corporations, national governments and international organizations, like the World Bank and the International Telecommunication Union (ITU). Dependency and another development approach that offer unattractive prescriptions to Third World governments, are adopted by the non-governmental organizations, for propelling social movements. These approaches are the main sources for the critical perspective that are discussed in the session 3.3. of this thesis.

3.2. Mainstream Perspective

I shall discuss the work of Parker, Hudson, Rogers and Pool, but document in greater detail the work of Parker and Hudson. Pool is an orthodox modernization theorist. Rogers was a modernization theorist, but has now revised his thinking. Yet the work of each is easy to understand. Parker and Hudson are comparatively new to the field, and their work reflects the continuities and discontinuities with the 1960s and 70s dominant view of "Communication and Development".

3.2.1 Parker and Hudson: spearheading policy research on telecommuncations and development[1]

Hudson's and Parker's early contributions to the telecommunications and development literature were made in the mid-1970s. At that time, modernization theorists were attempting to extricate their paradigm from a crisis precipitated by the failure of the development policies of the 1960s, and the challenge of the newly emergent dependency paradigm. Old assumptions were revised and new ideas and theories were spawned. The theoretical content of Hudson and Parker was influenced by the revisionism within the mainstream modernization paradigm. Other than this, their writings also reflected the influence of Freire (1970), and Goulet (1971) who proposed the concepts of popular participation and self-determination (Hudson, 1974; Parker, 1976). Certainly, the agenda of the ITU and other agencies that Hudson's and Parker affiliate with have helped frame the research programs and the fundamental premises underlying their works.

Parker and Hudson distinguish the new subfield from the preceding work on development communication. They say: 1) It is concerned with channels and networks of communication and the underlying technologies, in addition to the content of communication; 2) It focuses on interactive communication media rather than on one-way media; and 3)It shifts the focus of development communication away from persuasion.

There are two distinct phases to Hudson's and Parker's contribution to the telecommunications and development literature; the dividing line can be traced to 1978 (Shields, 1989). It is only in the early phase that Parker and Hudson seriously discuss the nature of development:

> "Two fundamental aspects of development are: provision of services to meet basic human needs, and shifting responsibility for such functions from trained outsiders to the people themselves" (Hudson 1974, p. 35).
>
> "[One] development goal could be stated as a reduction of economic disparities by improving the well-being of less privileged people through full employment, equitable distribution of services, and equitable access to resources necessary for economic advancement....
>
> One of the prime goals of most developing nationns is to create a sense of national identity within a society often composed of disparate ethnic, tribal, or linguistic segments....
>
> Many people, including this writer, consider the goals of human dignity and human freedom of choice to be as important as economic development and national cohesion" (Parker, 1976, p.45-48).

Economic growth is perceived as essential but not sufficient for successful development. Parker emphasizes growth with redistribution, and the design of appropriate institutions to ensure equitable distribution of the growth and provision of basic needs.

Parker maintain that integration is central to the attainment of development, as posited in the communication and development paradigm. But he differs in the means to achieve it.

> "...the goal of national cohesion, by my definition, cannot be achieved as an effect of the

> messages in the communication system. The goal of national cohesion is synonymous with the goal of creating a communication system through which people in every segment of the society have bi-directional communication with other people in society" (Parker 1976, p.47-48).

Parker (1976) posits that a lack of basic needs to rural dwellers will turn rural areas to be a burden to the whole nation. Provision of basic needs will enhance rural productivity that in turn attracts capital investment. Rural industrial growth provides job opportunities and promotes integration of rural and urban development, and national integration is thus made possible. National integration is an important precondition for a successful integration of a country into the global economic system. Rural-urban integration is essential to national integration. Improvement of telecommunicaitons is the single most powerful engine of such integration and sustained development.

In the later phase, Parker and Hudson tend to focus on the use of telecommunications to facilitate economic growth and rural-metropolitan integration. Parker (1978, 1982, 1984) sees information, and its carrier telecommunications, as a vital productive input into the economy. He posits that the telecommunication infrastructure will perform an important function by enabling the flow of information about improved products and techniques in the industrial sector, and in the coordination of large-scale economic projects. In the agricultural sector, reliable telecommunication facilitates dissemination of market information and research findings on

improved seeds and fertilizer (see also Hudson, 1984, 1987).

Hudson (1984) subscribes to Parker's advocacy of telecommunication as a productive tool. However, she also portrays telecommunication as a key administrative tool in providing consumption items like health, education and other services. She points out that the rural dwellers can use telecommunication facilities to keep in touch with family and friends, and to reduce social alienation. Yet, consumption is not for everyone. Priority should be given to leaders and representatives of a large or scattered constituency with knowledge of the external environment who will engage in seeking information for collective goals.

Parker and Hudson, as other mainstream scholars, are very much influenced by the information economist's thinking and the dominant ideology of the information age propagated by economists. Information rather than labor becomes the key factor of production. In the communication and development paradigm, scholars focused on the persuasiveness of information content as the liberating force that would create mondern mentality. In this new approach, information is a primary factor of production and locus of power. Information growth is assumed to be unlimited. If economic resources continue to shift toward the information sector, there is reason for optimism, because unlimited economic growth is theoretically possible. International inequality may also be narrowed. The quality of information is enhanced by information exchange. Information is different from material

resources, as the former will not be destroyed after consumption. All are winners and no one is the loser. Widespread access of information will lead to a widespread distribution of power and thus a truly pluralist society will appear (Parker, 1978, 1982, 1984).

To Parker (1984), telecommunication itself does not directly lead to economic development; but is is a catalyst for the release and organization of the human brainpower for economic development. Parker posits that it is better to create new wealth than to struggle over to divide or retain existing wealth. Parker posits that every country should develop a "human developemnt information intensive strategy". Improved information and technology permit more resource exploitation. This will enable a country to overcome resource shortage or inadequacy of labor.

Parker, in his early writings, acknowledges the monopoly interest of the existing social power in the communication system. Hudson (1985) admits that the realization of the benefical potential depends on the political, economic, social, and infrastructual factors. Yet power asymmetries are not incorporated into their analyses, and not addressed by their policy prescriptions. They tend to focus on the analysis of constraints like the lack of foreign exchange, indigenous telecommuncations expertise, and training facilities and supplies (Hudson, 1987, Hudson & York, 1988; Hudson, Lau & Noor, 1989; Parker, 1985).

3.2.2. Rogers: a diffusion of innovation theorist

Rogers is one of the leading scholars in the field of communication and development. His "Diffusion of Innovation" (1963) is a classic in modernization literature. Yet, in his "Communication and Development: The Passing of the Dominant Paradigm" (1976), he proclaims the passing of the modernization paradigm[2]. Rogers (1989) also recognizes the principles of the another development approach.

Rogers (1986, 1989) claims that new communication technologies have unique characteristics: interactivity, demassification and asychronocity (Rogers, 1986, 1989). He thinks such uniqueness would promote development in the Third World as they are more efficient in transmitting information and collecting feedback. He perceives that the new technologies would facilitate self-development by individuals and communities. But he also recognizes the negative effects such as enlargement of information gap between the rich and the poor, and the cultivation of a consummer culture. To the end, he is still optimistic about the technologies and tends to promote the notion of "information society" to Third World countries.

> "New communication technologies potentially represent a new type of industry, one might allow Third World nations like India to leapfrog the industrial era in order to become an information society" (1989, p.206).

> "How can high-tech employment and income-creation contribute to India's development?...the social impacts of the high-tech micro-electronics products can aid business development, productivity, and efficiency in India, change the lifestyles of the

> population, and eventually move the nation toward an information society.
>
> What can telecommunications do for India's development? Reliable telecommunications services are also essential for India's defense and business development. Faster information flows via telecommunciations channels enhance management, raise productivity, improve efficiency, and bridge vast distances in a nation such as India...." (1989, p.212-3).

Rogers posits that the popularization of computers is an important step for a nation to take toward becoming an information society. Regarding how it can be done, he cites the example of the collaboration of Singaporean government with IBM in computer training. "Something similar could help establish a coomputer culture in India" (1989, p.216), he speculates.

3.2.3. Pool: A Defender of the Modernization Paradigm

Pool's theory is the easiest to understand as it represents the continuity of the old communication and development paradigm. His early work in the 60s and 70s was based on the theories of Lerner and Schramm. He is called the "well-known defender of the transfer model" (Sussman, 1984, p. 299), and "one of the US Department of Defense's most vigorous academic spokesperson" (Tunstall, 1977, p.208).

As compared to Hudson, Parker, and Rogers, Pool (1971, 1979, 1981) has the most confidence in the realization of the potential of the new technologies in Third World countries. Pool (1979, 1981) sees new communication technologies as promoters of bottom-up participant communication. He (1971, 1979) proposes that the Third World install a four-media

communication system -- radio, satellite TV, satellite phone, and computer.

He argues that independence of Third World countries is promoted by unrestricted free flow of information and technology transfer. He therefore opposes to cultural protection.

> "Dependence occurs whenever advanced countries possess know-how and techniques that developing countries are not able to aquire for themselves at will... Independence is therefore promoted by unrestricted free flow of information between countries, so that the developing country can acquire for itself whatever intellectual and cultural products it desires at the lowest possbile price. The freer the flow of information, the wider the developing country's range of choice and the sooner it can acquire for itself the ability to produce the same sort of information of programming at home" (1979, p.152).

> "In general, culture does not need protection. Culture is what people are already attached to. If the culture is satisfactory, if it is not itself already in the process of decomposition, if local media are doing their job of providing products that fit the culture, the audience will not look abroad" (1979, p.142).

Pool's social analysis is based on a pluralist social model; every group has a say in any major social and political decision-making (1971). He is basically a <u>laissez faire</u> advocate. He differs from Hudson and Parker in that he objects to any control and intervention, whether by elites or by government. In terms of communication policy planning, he has persistently advocated privatization (Pool, 1971, 1979). He blames the Third World governments of ignoring communication and investing mainly on transportation. In his view, if communication had been privatized there would have

been tremendous demand for communication technologies that would have helped quicken the modern processes. The underlying assumption is that technology at large is a response to the social needs of the society.

3.3. Critical Perspective

I shall discuss mainly the work of Schiller, Hamelink, and Teheranian who, I think, represent different streams of thoughts. The brief description on Servaes and Jayaweera will be used to highlight the contradictory viewpoints within the critical perspective.

3.3.1. Schiller: advocating a "delay, postpone, and defer" strategy

Schiller's theoretical approach is a typical political-economy approach (Schiller, 1976a; Slack, 1986; Smythe and Van Dihn; 1983, Tsui, 1990[3]). He pays a lot of attention (even more in absolute amount) on communication and culture. Nevertheless, he gives primacy to the analysis of the politico-economic environment, that he sees as structure underlying the issue of technology, communication and culture. The focus is on how the transnational corporations subject Third World countries to economic and cultural dependence on First World countries.

According to Schiller (1976a, 1981), the new communication technologies have been developed out of the felt needs of American and Western European capitalists and governments. He (1976a, 1981) posits that these technologies

of the advanced industrialized countries are hardly likely to be appropriate for developing countries.

> "...given the existing distribution of power, given existing arrangement of control, and given the dynamics of how the Western model operates to extend its influence in my judgement, the new electronic technology serves exclusively as a conduit for pumping into the developing world all of the various messages and all of the values which in the long run inflict the kinds of damage to people that ...." (1981, p.23).

The structural constraints are rooted in the external and internal environments. Third World countries are at the peripheral positions in the global capitalist system that is dominated by the alliance of transnational corporations and First World states. The ruling class of Third World countries tend to collaborate with transnational corporations and thus serve the interests of the transnational corporations rather than their nationals.

Schiller (1981,1986) posits that the most pressing issue is the transborder data flow, resulting from the application of the computer and satellite communication technologies. Once a Third World country is linked to the data bases set up and administrated by the transnational corporations, the country is easily subjected to information dependence, and becomes vulnerable to external control. Transnational corporations can easily bypass national decision-making and get access to the nation's data.

More dangerous is the aspect of national security of Third World countries, Scholler posits (1981, 1986). As computers became essential elements in international

telecommunications, the connection between US intelligence and the corporate economy was extended. If Third World countries connect themselves to the international data bases, the national data can be easily retrieved by the US intelligence. Right now, the general problem of providing vital security in a multi-user, resource-sharing computer system has not been totally solved.

In terms of the adverse effects of new communication technologies, Schiller elaborates mostly the cultural arena. Satellites, direct satellite broadcasting, cable television, etc., supply the means of allowing increased access of US and a few other Western media products. These will result in decreasing cultural diversity and creativity, and facilitating the extension of the "cultural imperialism"[4].

Schiller's (1976a) proposed strategy is to "delay, postpone, and defer". He calls for a deceleration in the rush to adopt the new technologies, and a resistance to the ideology that development is a "race", and that participation cannot be delayed. He claims that protecting national sovereignty and cultural integrity does not mean supporting traditionalism. Total exclusion of non-indigenous communications material is impossible in the present age. He does not intend to resist technologies, only to insist on cautious choice.

Schiller recognizes that at this juncture of history it is very unlikely for the Third World countries to choose a strategy of "dissociation" from the global capitalist system,

even though he still upholds that it is a wise and desirable strategy. With the recent changes in the socialist countries that favor integrating into the global capitalist system, he realizes that transnational capitalism will continue to dominate. He insists that Third World countries carefully access what they need and avoid accepting the prescriptions and the models of the West uncritically. He sees that south-south cooperation, though difficult to achieve, is beneficial to Third World countries (Tsui, 1990).

3.3.2. Hamelink: proposing a dissociation strategy

Hamelink shares many of Schiller's concerns on the politico-economic environment, and communication and culture. He posits that the installation of information technologies in Third World countries facilitates the spread of the transnational business and its accompanying values. "The instantaneous and massive distribution of information it facilitated, permits the persuasive introduction on a global scale of lifestyles, consumption models, and social structures linked with a very advanced level of development and delusive for societies that barely survive. Information technologies play an important role in the cultural synchronization of the world and contributes strongly to the consolidation of transnational commercial interest" (1985, p. 29).

Hamelink (1981, 1983a, 1985) sees the transfer of information technologies to Third World countries in general as "selling a canoe without the paddle", usually a transfer

of end products and related services. The most common form of transfer is through direct foreign investment. The First World countries established subsidiaries in Third World countries for production and assemblage. Also common is the transfer of closed package: total projects, such as radio, TV stations with programming, and training of staff and maintenance services. Another form of transfer is training of technical staff, that is limited to specialized areas of application, not the ideas and theories behind them. The financial terms of transfer have been unfavorable to Third World countries. A common practice is overselling and obliging the acquiring party to purchase the whole package of hardware, software and related services (turnkey projects). Instead of intrafirm transfer of transnational corporations and its subsidaries in Third World countries, there is a reversed South-North transfer in terms of the brain drain of experts in electronics of Third World countries (particularly S.E. Asia and India) to research laboratories in the North (e.g. in Silicon Valley, California, USA).

Hamelink (1985, 1986b) concludes that telecommunications are primarily introduced as the support system for expanding transnational corporate economy and not to meet the basic needs of the local population. The primary beneficiaries are foreign and national elites. He believes that unforeseen effects can occur for which no adequate institutional contexts are present, and that the capital intensity of the new technologies would lead to serious balance of payment

problems. Third World countries end up by offering low wage labor for electronics production of transnational corporations.

Hamelink (1985) sees the propositions that telecommunications serve North-South mutual as fiction, and serve only to support the political view of the established interests in the global capitalist systems. He advocates the sophisticated technologies developed through South-South cooperation, rather than those imported from the North.

Hamelink (1983a, 1988) continues to uphold his proposal of a dissociation strategy. He argues that Third World countries should "dissociate" from transnational dominance to form a self-reliant indigenous information system. He sees dissociation as the essential strategy for Third World countries to resist cultural "synchronization" -- his modification of the traditional phrase "cultural imperialism". He leans toward a form of cultural protection, that was also echoed by Schiller.

I notice that there is a shift from the political-economy analysis to an epistemological analysis in Hamelink's writings (1986a, 1988). Hamelink claims that it is not enough to reveal technology as a social contruction, and thus its non-neutrality. He questions technology's neutrality not only from a sociological viewpoint but also from the epistemological. The rush of the whole world to use new communication technologies is not only because of the transnational corporations's promotion for enlarging their

market size (i.e., the logic of accumulation), but also reflects the dominance of mechanistic-technical and instrumentalist worldview that originated in modern Western contexts. Such a worldview sees the mastery of the nature and competition among human beings as natural, and that these would bring about progress. The importation of information technologies together with the emulation of the Western worldview is a great obstacle to development of indigenous technological capacity, Hamelink posits.

3.3.3. Teheranian: advocating small media for communitarian movements

Teheranian has spearheaded the communitarian approach in the context of the evolution of another development approach. His focus is on the social and cultural identities other than the external and internal politico-economic factors affecting a nation. He see grassroots communities and non-governmental organizations as the major agents for social change, rather than that national governments. As an Iranian havinng experienced the turbulent revolution in 1979, and the success of using small media and new technologies in the revolution overthrowing the Shah, Teheranian realizes the potential of new technologies in propelling social transformation.

Teheranian (1988) classifies researchers with different attitude toward information technologies into four categories: technophilic, technophobic, technoneutralist, and technostructuralist[5] (He does not refer to them as such only in Third World contexts). The technostructuralists,

with whom Tehranian identifies, would agrue that "technologies are by themselves neither good, nor bad, nor neutral. This is because their impact is always mediated through the institutional arrangements and social forces, of which they are an integral part" (1988, p. 31). Teheranian argues for "a cautiously optimistic view" (1988, p. 32)

Tehranian posits that the global capitalist is full of contradictions that offer space for positive social and technological intervention by communitarian movements. He (1988) captures the tendencies of contradictions by four global trends: 1) transnationalization of the world economy at the centers; 2) tribalization of politics at the peripheries; 3) democratization of values at the semi-peripheries; and 4) totalization of surveillance throughout the world. While transnationalization is dominating the global economy, tribalization of politics at the peripheries, both within and among nations, is a counterforce to transnationalization. The present political system, organized principally among the sovereignty of nation-states, presents an obstacle to the unfettered growth of the transnational corporations. Tribalization of politics also takes place within the Third World countries. The Sarvodaya Movement of Sri Lanka, Islamic neo-traditionalist movements, the theology of liberation in Latin America, and various voluntary movements counter universal and secular, scientific-technological culture of the transnationalization and call for a return to smaller and more cohesive

communities. While these new technologies make possible the dictatorial Third World governments to exert totalitarian control over their nationals, they also facilitate voluntary organizations and grassroots people to advance their counter-propaganda and counter-cultural movements.

3.3.4. Servaes and Jayaweera: harnessing technologies for benefical use

Servaes shares with Hamelink the epistemological concern of the nature of technologies. Jayaweera shares with Schiller a similar political economic analysis of global capitalism and Third World realities. Nevertheless, their proposed strategies are different.

Servaes states that there are three implicit values in Western technology. "First, Western technology shows little respect for myth, symbol or the power of the mysterious. Every phenomenon has to be broken down into component parts, tested or verified. Secondly, the technology is based on the cult of efficiency. The central considerations are productivity, cost-benefit ratio and the bottom line. Thirdly, the technology dominates and manipulates nature rather than being in harmony with it. Problem-solving is the goal; hence, reality is reduced to those dimensions which can be studied as problems needing solutions. The values implicit in Western technology may therefore come into conflict with pre-existing values of the Third World" (1988, p.4)

Servaes (1985, 1987, 1988) recognizes that the importation of technology inevitably brings with it a set of assumptions, norms, unwritten rules, style of production, values, professional codes and expectations, beliefs and attitudes.

Servaes is one of those who has contributed to the evolving of "another development" in reaction to the weakness of dependency paradigm. He is involved in the paradigmatic thinking that no nation is completely autonomous, and there is no universal path to development. Dissociation strategy as a central strategy of the dependency paradigm proposed as a universal strategy may not be applicable to all Third World situations. He prefers "to strike the right balance" between the integrationist model and dissociation model to find an appropriate mix of technologies, and not just the "home-made" technologies. His strategy is to formulate guidelines for communication technology transfer.

Jayaweera (1985, 1987) posits that "proposals for 'delinking', 'self-reliance', and 'automatic development' are mostly conceptual fantasies that have little relevance to the realities on the ground" (1987, p. 87). He states three reasons to support his position. Firstly, the demand for the adoption of technologies is also from within Third World countries. The national elite who are the beneficiaries of the technology are "vulnerable to all manner of blandishments that accompany high-power sales drives" (1987, p. 87). Secondly, he finds it "foolhardy and impractical" (1987, p. 87) to opt out of the networks of satellites, computers and

digitalized telephones. He sees that no country can stay away from these networks if one participates in the global economic order. Thirdly, popular pressure from within these countries (including traditional villages) for higher material satifaction compels the governments to import all these new commodities.

Jayaweera's agenda therefore is to ask: "What choices does a society have? How can a society benefit from the new technologies and yet maintain its autonomy and integrity?" (1987, p. 85). He argues that "The truth of the matter must lie somewhere between the 'bandwagon approach' of most Third World elites who want to join in the race to buy the new communication technologies, and the 'fortress approach' of those who want to pull up the drawbridges and get behind the ramparts of 'self-reliance'" (1987, p.85). He claims that the new technologies cannot be ignored today. What is needed is to "harness these technologies to sectors of the economy where production and output can be stepped up quickly rather than allow them merely to stimulate the propensity to consume" (1987, p.85). He is concerned about not only production growth but also distribution. Instead of relying on market mechanisms to distribute the benefits of the new surge in output, comprehensive policies of social welfare and social responsibility should also accompany the adoption of these new technologies.

4. THE QUESTION OF COMPATIBILITY

Which of the two sets of theories better explains the issue? Are they compatible with each other? If they are compatible, we should put our efforts to move toward resolution between the two perspectives. If not, the search for a resolution is futile. I see the differences are fundamental.

4.1. Theoretical Differences

4.1.1. Models of development

On the surface, the models of development of the mainstream scholars have been revised. They are more aware of the ethnocentricism of the old modernization paradigm and the criticism by outsiders. They have incorporated the concepts of popular participation, growth with distribution, provision of basic needs and even respect for traditional cultures in Third World countries. Nevertheless, we have to distinguish whether they only pay lip service to these principles or whether they genuinely incorporate these principles to guide their research and policy proposals. We can detect this by examining how they integrate these concepts in their analyses.

There is still a deep belief in the mainstream in the idea of Western modernization, through the economic and technological growth. The concept of "information society" in the 1980s is replacing the concept of "industrialized society" promoted in the past decades. For example, Rogers (1989) sets the US, Japan, and Western European information

societies as models for the future development of India.

Parker's emphasis on basic needs provision is not out of a recognition that it is a right, but for practical expediencies. He perceives that basic needs provision will enhance rural productivity that in turn attracts capital investment, leading to rural industrial growth, provision of job opportunities, and rural-metropolitan integration. National integration and integration into the global economic system are then expected to take place. This is shown by the apparent interest of Parker and Hudson in exploring the potential of technologies that efficiently connect geographically distant points (rural-metropolitan linkages). Technologies that are suitable for connecting geographically proximate points (intra-rural linkages) are not considered (Samarajiva and Shields, 1989). This is a strategy driven by market advantages rather than sustained development for the rural communities. Therefore I argue that there is no fundamental departure from the integrationist strategy of the old modernization paradigm.

Critical scholars have inherited the dependency paradigm and another development approach that rose to counteract the technocentric modernization paradigm and its policy prescriptions. Jayaweera comments on the revival of the modernization paradigm, abandoned by its proponents.

> "In the 60s the tools were radio and TV. In the 80s, they will be satellites. In the 60s, the prophets came from the behavioral sciences -- economics, sociology, etc. In the 80s, the prophets are technologists and engineers. But

> basically the agrument is the same: 'Development is something that can be stimulated and engendered through mass communication. The more penetrating, the more widespread, the more efficient the delivery system, the more easily the ultimate development goals can be realized.' One senses the same retreat from complexity that characterized development communication thinking in the 60s" (1985, p.53).

He (1985) remarks that the cognitive element (information) is important in the Western cultures but not in Third World countries. It would be a mistake to impose the Western notion of information society on Third World countries, he warns.

Other than challenging the notion of information society, critical scholars have certain goals of development on their agenda that are problematic to mainstream scholars. One is the protection of national sovereignty that is achieved by distancing from, or selectively participating in the global economic system (Schiller, 1976a, 1981; Servaes, 1988). The other is to preserve the cultural diversity, autonomy.

According to Hamelink (1983a), the survival of every human society depends on its ability of adapting to its environment. Crucial for the adaptability is the adequacy of a cultural system to enable its members to cope with the environment they are living in. The adequacy is defined by the internal capacity and external freedom to develop this system autonomously. Cultural autonomy is fundamental to the independent and full development of each society. Unfortunately, the cultural autonomy of many Third World societies has been eroded by colonial and neo-imperialistic

actions of First World countries and transnational corporations. Cultural resistance toward the universalization of the technico-material value spread through the process of transnationalization is seen as esseantial to development (Hamelink, 1983a; Schiller, 1986; Tehranian, 1986, 1988). The protection of national sovereignty and cultural resistance apparently contradict the global integration and transfer of Western technologies promoted by the mainstream perspective.

4.1.2. Nature of Causality

The mainstream perspective explains the relationship between communication technologies and society by the "simple linear conception of causality" or a modified version, the "symptomatic conception of causality" (Slack, 1984b). Inheriting the atomistic thinking of positivism, mainstream scholars tend to prefer the simplest explanations of the complexities of social realities. They do not examine the social origin of the technologies. Why and for what they are invented are not placed within the discourse. Technologies are never really considered to be effects themselves, only causes. Parker (1984) posits that technology can be studied as an dependent variable of social science interests, i.e., to see how technology is affected by social forces. Or it can be seen as an independent variable, and study its impacts on society. They prefer to identify technology as an independent variable and put it in the center of analysis. It is no wonder that neither Parker nor Hudson mention the

fact that the basic infrastructure in Alaska was constructed for military purposes and was managed by the military until the end of the 1960s (Mansell, 1979).

For the simple linear conception of causality, technologies are like magic that exerts direct influence on social and economic issues. This reflects the influence of the powerful media effects model -- media as "major multiplier" in Lerner's (1958) and Schramm's (1964) words. This conception of the causality is shown in Pool's work (1966, 1971, 1980).

In the place of the simple causal position, a symptomatic causal position begins to take place, along with the change of the philosophy of science and the shift in development paradigm. Simple linear causal explanations are seen as reductionist and simplistic. The causal chain still starts with technology. The only difference is that the cause-effect relationship is not direct and linear. In between the causal chain of technology and society, there lies the play of social forces. The impacts of technologies being determined largely by various social forces that come into play after the appearance of the technologies (Parker, 1984; Hudson, 1984; Rogers, 1989).

Critical perspectives, instead, see technology as social contruction. Technology is not neutral and autonomous. (Schiller, 1976, 1981; Jayaweera, 1987; Mattelart, 1979; Mody, 1983, 1987). It emerges from within the social order. Critical scholars thus emphasize the examination of the

social origin of technology -- the question of "why" and "for what" it is invented, "transferred", "applied" -- by explicating the connection between the social forces and the emergence of technology. For example, Schiller (1976a), Hamelink (1981, 1983a) and Jayaweera (1987) emphasize that the new technologies are invented and transferred out of the felt need of the transnational corporations and the First World states to maintain their economic and military leadership.

The critical scholars thus deal not only with the social forces after the emergence of technologies but also the social roots of those processes with the uses to which technologies are put. Technologies are not independent variables or the causes but parts of the larger social processes. Thus technologies are not given the central position in their research. Understanding the larger social context and the exercise of power within which technologies are used and how they impact becomes the locus of study (Schiller, 1986, 1981; Teheranian, 1983, 1986; Hamelink, 1985, 1986).

What is the significance of different research foci (technologies vis-a-vis social contexts, and the exercise of power) on the development of perspectives?

4.1.3. Conceptions of Contexts

The mainstream perspective sees the cause of underdevelopment as lack of information and reliable communication. Of course, from this logic, technologies are to be the locus of study, as they enable efficiency in

transmitting information. The contexts they look at are not those that obstruct the development of Third World countries, but those organizational and infastructural constraints that obstruct the full realization of the potential of these technologies. These constraints are expressed in terms of transportation, electricity, the lack of expertise, finance, etc (see Parker, 1976, 1985; Pool, 1971; Hudson, 1985, 1987). Hudson (1985) and Rogers (1989) mention that the political, economic and institutional contexts should be examined for the use of technologies. But these contexts are treated as discrete factors, and are not seen as interrelatedly embedded in the social structure.

Critical scholars like Schiller (1975) criticizes that attention to policy-making paid to the technical details of systemic efficiency -- making things work better without changing the basic structure. Thus they choose to unveil the "deep structures" of the societies analyzed. Critical scholars set their tasks to examine the interplay of various forces operating in the society -- political, economic, social, cultural, legal, and ideological, and locate the use of technologies in these contexts. They see contexts not as discrete factors, but historically embedded in the social structure.

For example, Hamelink (1985) when dealing with the development of telecomunications in Algeria, he situates the country in the global capitalist system, describes its reliance on foreign power, and points out the domination by

bureaucrats. It is in these contexts that the national telecommunication infrastructures become increasingly controlled by the foreign suppliers, such as ITT, GT & E, Ericsson, and Nippon Electric. In addition, the acquiring of hardware and related maintenance depends on foreign finances. Finally, the dominating social class benefits most from the actual use of the new technologies and becomes a new bureaucratic elite. The stated objectives of decentralization of government administration and more equal income distribution have not been achieved.

4.1.4. Conceptions of Power

Underlying the differences in the conceptions of contexts is the willingness or unwillingness to recognize the exercise of power, as it relates to the underdevelopment of Third World countries. I define "power" neither as the persuasive influence of technologies posited by the powerful media effects model of Lerner's and Schramm's, nor as the command and control in an organization emphasized by organizational communication specialists. I conceive power as embracing all the substantial and relational attributes that constitute access to crucial social resources. The recognition of the exercise of power includes identifying the powerholders, and dimensions and levels of power they hold.

Mainstream scholars like Pool, by conceptualizing critical theories as ideological and value laden, and avoiding to identify themselves with critical social theories, actually follows the orthodox paradigm of

structural functionalism in the study of society, that justifies the existence of inequality in a society.

Pool (1980) points out that the existence of central-peripheral relationship is a product of the functional specialization, and the international division of labor. He regards that as natural. He therefore criticizes critical scholars' repeated documentation of it as an redundant exercise that does not offer any social science insights. From the viewpoint of structural functionalism, the whole is constituted of the parts that are functional for maintaining the equilibrium of the whole. Each part has its own role in the system. The inequality is natural, and is even functional to the whole. The conservatism of this paradigm best serves the maintenance of the status quo.

Rogers (1989), Hudson (1984), and Parker (1973, 1985) recognize the existence of unequal power arrangements, nationally and internationally. But they do not incorporate those ideas in their analyses. Parker, for example, despite his protestation that "the key issue is institutional, not technical" (1985, p.209), in his writings focuses almost exclusively on the question of appropriate technologies, and selectively addresses factors like the ability of Third World governments to procure telecommunications equipment. Parker says that the social structure is so rigid that one can hardly change it. Instead, he posits that the potentials of technologies can affect desirable institutional change (Shields, 1989). It is no wonder he deemphasizes

institutional reforms or redistribution of power in his later phase.

I see part of the reasons is shown in Rogers' own writing:

> "Some radical critics of communication research feel that it also tends to side with the existing social structure and to repeat mainly an incremental change position... The relatively high price of most communication 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 [the] 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 resources rather than communication receivers, of the establishment rather than revolutionary attempts to alter the social structure" (1976, p.236).

Institutional affiliation is a factor that strongly influence the orientation of the research. The difficulty appears to be less in identifying the problem than in actually doing research that address fundamental power relations.

Many of the mainstream scholars affiliate with a number of inter-governmental organizations like the ITU, OECD (Hudson, and Parker)[1], World Bank (Rogers), and even with certain information industries like the Apple Computers (Rogers)[2], Equatorial and Parker Telecommunications (Parker)[3].

ITU explicitly aims at promoting technology transfer to Third World countries. World Bank is interested in the increase in productivity promoted by computer communication.

Equatorial produces small earth stations which have a Third World country market. These scholars who collaborate with these agencies definitely identify with their objectives or do not want to rock the boat. They mention the negative impacts of technologies, but cannot name the transnational corporations they are allied with as dominating and distorting the development of Third World countries' communication systems. Their reservations about the positive impacts of technologies under all settings is basically cosmetic.

Parker's case is an example. There is an apparent difference between Parker's writings in his early years and after his crossover from academia to industry (Shields, 1989). He now seldom touches on the issue of unequal power relationships as he did in the early 1970s. Most of his publications since 1978 have been concerned with the revolutionary potential of satellite communication to Third World rural areas. His advocacy research for USAID on satellites, and his subsequent corporate involvement in Equatorial and now part of Contel and his own consulting firm give him a vested interest.

Another factor is methodological. Mainstream scholars have a trust in empirical evidence based on quantifiable "facts and figures", and field research. How can the exercise of power that is invisible, mostly latent and non-quantifiable be studied ? Eventually, they dismiss power asymmetry.

Critical scholars conceive that power is not necessarily transparent, and that in most cases it is invisible as well as multi-dimensional. Power assumes the form of domination by one group over another. Power is relatively invisible in society, and embedded within a complex web of socio-structural relations. Therefore they develop conceptual tools to describe and explain power relations. This methodological problem will be dealt with in section 4.2.

Schiller distinguishes critical and mainstream research by a criterion -- the confrontation of the exercise of power (see Bolton, 1989). Since technologies are social constructions and reflect the capitalist structure, institutional analysis to examine the political, economic, social and information environments is undertaken by critical scholars.

Hamelink suggests that we examine, "Who benefits economically?... Who benefits culturally? Who is going to use the new technology? Who can exploit their prestige value? Which groups can communicate more effectively by adopting this technology?" (1983a, p.17). He concludes that past experience indicates that the benefits will accrue primarily to the transnational corporations which deliver the products, the transnational banks which finance the purchase of the products, and a "new class" of officials -- managers and military personnel connected with the ruling government who will be among the few able to use the products.

4.2. Epistemological and Methodological Differences

It is no doubt that most research is based on empirical data. But how these data are selected and organized depend on the epistemological and methodological approaches. Epistemology, theory and methodology are interrelated. Epistemological and theoretical approaches affect the methods employed, that in turn, limit what the theory can do. The mainstream perspective is underlined by the positivist-empiricist approach. The critical perspective identifies with dialectical-hermeneutical approach.

The positivists see the world as a homogeneous entity. It is understood as unchangeable and eternal. It exists as an objective reality "out there" that can be observed, verified, and refuted. The natural world is composed of real, universal objects, and that through our perceptive organs we have access to them, as "facts". Facts, since they are supposed to exist universally, are considered to be value-free. Observation of them is also supposed to be value-free and objective, and so are the theories based on observation. Science is defined as the observation of reality as problem. Reality is identical to what is experienced, and can be measured. Reality and our measuring scale are isomorphic, and it can be made predictable (see Krippendorff, 1989; Jones, 1987; Goonatilake, 1984).

Such an objectivistic conception of theory building presupposes that there is no suitable basis for evaluating

value-based statements about the world. Mainstream scholars do not suggest that societies "ought" to progress toward pluralistic political systems. Rather, it theoretically postulates that such progress is more or less inevitable, and this postulation is thought to be justified by empirical evidence (Jacobson, 1985).

The positivist approach to reality is reductionist. All phenomena can be broken down into fragments and comprehended by arranging these parts in terms of formal logic. Each fragment can be observed, operationalized, quantified and measured. By observing selected parts of elements of reality, a scientist could uncover the causal connections between them and establish universally applicable theories.

Change in the philosophy of science led to a change in the conception of science, that was less objectivistic (Jacobson, 1985). Social scientists do recognize the inevitablity of value-based decisions at all levels of inquiry. Parker admits that "there is no ultimate truth. So we must accept that there is no universal good that we can use to resolve all the value questions that must be faced" (Parker 1973, p. 542). But this recognition is not shown in Pool's work.

To the end, the core tenets of "traditional empiricism" is still practised, though few social scientists claim to be positivists. The reductionist approach of describing and explaining social reality still prevails. One type of analysis is field experiments, the result of which are

generalized across societies. Parker and Hudson, for example, predict the impacts of telecommunications on Third World rural communities based on the generalization of the field experiment in Alaska and Canada North (Hudson & Parker, 1973; Hudson, 1974).

Another type is the quantitative-statistical analysis of developing causal or correlational analysis. For Pool, this is the only legitimate way of doing scientific investigation.

> "The researcher may easily tempted into becoming a second-rate pseudo-philosopher pontificating on big questions of social needs instead of continuing his paintaking digging into empirical facts by technuques at which he is competent. ... hard empirical facts of science and economics are absolute pre-requisite to policy research...." (Pool, 1974).

To Pool, critical literatures that seek to describe, interpret and explain phenomena in their full contexts, are not considered social research, but polemical essays unlighted by facts. He criticized Nordenstreng and Schiller's (1979) "National Sovereignty and International Communication" by pointing out:

> "...that not one of the papers was a research study of the kind that social scientists normally do. A couple of the papers cited social science literature and reviewed some empirical examples, but use of social science or quotinq of empirical data is not the same thing as doing research. I say this not to claim that every book is obligated to be a social science research study; there are often legitimate attitudes in the world too. But I criticize this book since most of the authors are social scientists, and it is, I fear, typical rather than exceptional in the literature about international communication" (Pool, 1980, p.62).

Following this methodological position, manistream scholars tend to justify their claim by doing and citing quantitative-statistical analysis especially when they deal with the impacts of new communication technologies on economic development. Existing studies include comparisons of highly aggregated measures of telecommunications availability and use with aggregated measures of economic activity and development. The famous Hardy study (1980) is an example of this type of work. Parker and Hudson compliment Hardy's hypothetical model because it indicates the direction of causality of the positive impacts of telecommunications on economic growth of Third World countries. Such studies have lent support to the mainstream argument.

> A recent study by Andrew Hardy, using statistical techniques that were new, and as yet not well understood by most econometricians... by using time series analyses to determine the direction of the relationship between number of telephones and size of economy. His work confirmed what many of us intuitively believed, namely that there are two elements to the correlation between number of telephones and gross domestic product (GDP), one of which is the result of richer economies buying more telephones and the other is the result of more telephones contributing to economic growth.... What Hardy's analysis did for the first time was to sort out statistically which component of GDP was a result of telecommunications investment, without confusing this by the relationship between increased GDP and consequent increased 'consumption' of telephones" (Parker, 1984, p.176).

4.2.2. Critical Perspective

For the critical perspective, the universe is not made up of fragmented parts, but is a totality of processes that are interconnected. Such scholars (like Hamelink, 1980;

Schiller, 1981; Teheranian, 1977; Smythe & Van Dinh, 1983; and Mattelart, 1979) identify clearly with the dialectical approach to social reality, and assert that truth always emerges from the dialectical process of change. In the dialectical process, contradictory elements in all forms of life try to overcome each other and produce transformations that change from their predecessors quantitatively and qualitatively. Whether scholars identify themselves with the dialectical view or not, they tend to intepret and analyze the phenomenon in its totality, its full contexts and in its interconnections (Servaes, 1988c; Jayaweera, 1987; Mody, 1985, 1987, 1989). Instead of using quantitative-statistical research that reduce the totality into fragmented units, the scholars tend to favor qualitative studies that focus on revealing the interconnection of phenomena in their full contexts.

Qualitative studies do not rule out quantitative techniques (Servaes, 1989a). Critical scholars do use figures and empirical data. However, they do not see the quantitative findings as the end products, but as posing questions needed to be answered in other ways (Murdock, 1989). They do not just pile up the data but organize them to make a social scene, by employing certain critical theories. For example, Schiller (1981) and Hamelink (1985, 1986b, 1988) also analyze economic development. But they do not conceptualize it as the rise and fall of GNP. They

analyze the economic structure, and the structural forces -- the monopoly, and the conglomerate. They analyze the ownership, and the international trade pattern in the context of the international division of labor. They also deal with facts and figures related to these phenomena, but their way of organizing and interpreting them is systemic.

Hamelink (1985), in dealing with the technology transfer issue, combines empirically based information that seeks to answer questions like, "Who dominates the market"? "Who has the greatest share of the market"? "And which countries constitute big imports market"? All these involve quantitative data. He then analyzes the sources, forms, and the financial terms of transfer, gathered empirically, and theorizes about the actual practice of technology transfer and application by including information available in policy statements of national governments, transnational corporations, and inter-governmental organizations. The invisible power relationships they conclude are interpreted from the data collected, not through speculation based on any conspiracy theory.

With regard to the conceptualization of phenomena, qualitative researchers are concerned with concepts that yield portraits and not statistically precise formulations derived from fixed conditions. I employ here Blumer's (1954) useful distinction between sensitizing and definitive concepts. Quantitative research traditionally produces law-like abstractions through fixed procedures designed to

isolate concepts. Concepts have to be defined and operationalized in figures in the mainstream literature -- energy consumption, and GDP are the operational definition of economic development. The establishment of sensitizing concepts offers a different device for ordering empirical instances -- expressions that develop an insightful picture which distinctively convey the meaning of a series of events (see Christians, 1989).

One example is Schiller's concept of "media imperialism" or "cultural imperialism." It is based on the observation of the empirical phenonmena in Third World countries. It is not statistically operationalized in any way. It conceptualizes the process whereby the ownership, structure, distribution and content of the media in Third World countries are subjected to substantial external pressure from the media interests of First World countries. But the influence of Western media can be both direct or indirect. Therefore, Hamelink (1983a) gives preference to the concept of "cultural synchronization". In his opinion, cultural imperialism is the most frequent but not exclusive form in which cultural synchronization occurs. Cultural synchronization can take place without imperialistic relations constituting the prime factor, or even without overt imperialist relations. Clarification in turn improves the quality of further observation. Sensitized concepts are also continually subjected to test, improvement, and different illustrations, and refinement by further encounter with the situations they

presume to cover. For example, Servaes (1986a) points out that we should research on the qualitative impact of Western media influence on Third World realities.

Qualitative research also relies on reliable data, not to test hypotheses statistically but to gain sensitive understanding. While it may lack the elegance of statistical tests, it does not imply a lack of rigor (see Christians, 1989).

4.3. Are the two perspectives compatible?

The differences between the two perspectives are not technical. They differ not in methods, but in constrasting theoretical, methodological, and epistemological positions. The set of positions chosen tend to support and reinforce one another. For example, mainstream scholars start with the assumption that access to information and reliable communicaton channels is essential to Third World development. The question they pose to themselves is regarding the positive economic and social benefits of the new communication technologies. To verify their claims, and to gain support of various institutional forces, they tend to do quantitative-statistical analysis or field experiments to search for hard facts and figures. It is therefore understandable that they tend to ignore the exercise of power, and the social contexts and origins of technologies.

Critical scholars insist that revealing and confronting the power structure is central to their analyses, as they see the rootcause of underdevelopment in the Third World to

be the deprivation of the underprivileged majority of their access to power and resources. They therefore pose a completely different set of questions. For example, what are the forces that shape the inventions, character and applications of the technologies? And who benefits and who loses, given the existing structural constraints?

Different ideological orientations drive them to pose different questions, and take different theoretical, epistemological and methodological positions. Certainly, their research results and policy recommendations are very different. As the perspectives are propagandistic to each other, I do not see any reason to justify a compromise.

Which perspective offers a better explanation? I will substantiate my choice with a documentation of results of using new communication technologies in Third World countries.

Satellite application has been experimented for one and a half decades (Jayaweera, 1985). It is one among the most well received new communication technologies by national governments and by academics. As compared to the computer, telephony, and the like, it is more welcomed and believed to usher in positive changes.

According to Hudson and Parker, satellites promote national integration and administrative efficiency, enhance the provision of medical health care, prevent natural disasters, facilitate agricutural extension and the supply of

market information to remote locations, and enhance political and social pluralism and social participation.

Jayaweera (1985), by evaluating the use of satellites in Third World countries over the years, raises a number of counterarguments. He points out that the lack of integration is a symptom of the problem far more complex than is suggested by territorial size or the incidence of islands, mountains and deserts. Very often the lack of integration indicates the need for more autonomy to constituent national entities. Satellites may be used either as instruments of coercion, or as a substitute for more human forms of achieving integration.

Bureaucratic concentration in the metropolis, which is largely responsible for administrative inefficiency in Third World countries, is likely to be aggravated through satellites. The majority of Third World population still live in villages. What administators need to do is to go to the communities to get to feel the problems of their nationals, and not stay in the capital city to decide top-down policies. They need to have a face-to-face encounter with their nationals, not an electronic interface.

The fundamental issues of medical care in the Third World are not related to a lack of communication, but to a lack of clean drinking water, proper food, and of basic medical facilities. They are not diagnostic, but stem directly from poverty. The preoccupation with using satellites will help broaden and pave the escape route to the

unwillingness of the governments to undertake structural changes.

To cope with natural disasters is less a matter of information than a matter of basic infrastructure. What does a community living in a seacoast town do even if adequately warned of an impending cyclone? The people are poor and their houses are fragile.

The problem of rural poverty is more a question of access to information (e.g., knowledge of new farming methods). It is primarily a question of land tenure, the lack of credit, exploitation by landlords and middlemen, the lack of irrigation facilities, and the high cost of inputs. Most of these are structural and political questions.

Isolation from marketing information is more a disability peculiar to transnational corporations and national capitalists in the metropolis, and not a need among small, subsistence farmers and village cooperatives who constitute the majority of the rural sector.

Pluralism and participation are related to political consciousness and not a question of technology. The political, social, and economic structures are built to benefit the few privileged minority at the expense of the underprivileged majority. What can technology do to enhance pluralism and participation? In the hands of centralized and dictatorial governments, satellites function as powerfully as the military and the police that threaten the voluntary organizations of the poor and the underprivileged.

In Indonesia and India, satellite TV brodcast, that was amenable to centralized control and used as a political tool in Indonesia and India to strengthen the ruling polical forces under the ostensible objective of national integration (Singh, 1987). Moreover, the Indian satellite system was finally dominated by commercial interests (Mody, 1987).

Hudson and Parker advocate the use of satellites in Third World countries based on their field experiments in Alaska and Canada North (Hudson & Parker, 1973; Hudson, 1974). As a matter of fact, there is a serious methodological flaw in the generalization across societies. Alaska and Canada North are sparsely populated, with resources extracting camps and small communities of natives scattered across harsh terrain. These communities are very strongly integrated to the metropolitan centers. Resource extraction is carried on by those from the metropolis for the benefit of the metropolis. The communities of natives are survivors, and are dependent on support payments, food and other resources from the centers (Shields, 1989, p.50). The extensive use of telecommunications in these localities arise from specific circumstances. Many Third World rural areas are at quite different levels of integration to urban-based market economies and do not share the same demographic characteristics. It is a mistake to generalize these experiments to the communication pattern in Third World rural areas.

Regarding the use of telephone, Hudson and Parker in the early phrase of their career actively promoted it to strengthen horizontal communication among people, and facilitate transmission of market information to rural areas. But given the reality of poor financial resources of Third World governments, decision-makers tend to respond to market signals and popular demands. The groups indicating their preferences are also capable of exerting direct pressure on government decision-makers. In the case of Papua New Guinea, the telecommunications system is heavily biased in favor of serving the productive needs of the export-oriented economy, a situation symptomatic of the urban/rural dualism in many Third World economies. Only 0.6% of the total indigenous population had telephones, compared to over 30% expatriates who had telephones (Karanatathe, 1982). Costly telecommunication lines are drawn to the most inaccessable rural areas to serve plantation and mining industries. The urban poor and lower middle classes in the urban areas are completely excluded from access to residential telephones (Samarajiva and Shields, 1988). These phenomena are not uncommon in Third World countries.

Even if one were to unquestioningly accept the proposition that telecommunications make a positive contribution to development as measured by GDP (e.g. Hardy's study), that would still have marginal relevance to the decision to allocate public resources to telecommunications as opposed to other services. The decision must rely on

opportunity cost. The facts remain that capital investments in telecommunications take away funds that could be used to provide basic needs to the majority (Samarajiva & Shields, 1988).

To cope with the "computer revolution" in the West, many Third World countries started all kinds of training of computer scientists, technicians and engineers. Evidence shows that these brains (from India, Brazil, etc.) have fled to the research laboratories of First World countries.

The agrument for the use of computer -- enhancing efficiency, productivity, and attracting foreign investment -- is just the same as that advocated for the importation of machines for agricultural modernization and industrialization in the past decades. Has the policy succeeded as expected? Has the benefit trickled down to the majority, even if there was economic growth? If not, what makes the computer different?

Even worse, indication of the use of computers in systems of control and repression are increasing. Police patrol cars in Chile and Argentina are equipped with computer terminals. Under the military junta, anyone questioned in the street had to produce a magnetic identity card which gave instantaneous information of that person's past history. On the pretense of national security, dictatorial regimes can intrude the privacy of individual citizens (Mattelart, 1985). One has to remember that many Third World governments are dictatorial.

Let me also examine the policy environment for the adoption of these technologies. No government has yet drafted a coherent policy in the field of new communication technologies (Hamelink, 1986b). These countries are also increasingly affected by an economic recipe proposed by donor countries (such as the US, the UK and the Netherlands), and the donor agencies (such as the World Bank, and the IMF) that implies the retreat of the state in favor of privatization (Hamelink, 1986b).

There is also a general anxiety about missing the information revolution. Policy making on social development tends to be driven by technological development rather than adapting technologies to social priorities. This is corroborated by the fact that in many cases the actual decision-making is in the hands of a few technocrats.

The structural nature of the Third World problems, and the political, economic and social reality have not changed. Parker's reliance on technologies to bring about redistribution of power, to me, is either a pretense or at best wishful thinking. Historical evidence shows that technologies have strengthened rather than weakened the dominant powerholders. The importation of new communication technologies, which require the allocation of substantial resources, is more amenable to control by dominant interests.

It is, therefore difficult for me to believe that the policy prescription of the mainstream perspective will work.

I argue that it tends to repeat the failures of the communication strategies of the 1950s and 1960s. It is the critical perspective that addresses the root cause of Third World problems -- the unequal distribution of power -- and attempts a structural solution that I find much more convincing.

Rogers argues for more dialogue and the maintenance of pluralism. Pluralism in the field cannot be achieved unless its supporting assumption -- every force has equal power, is a reality. The mainstream perspective has very strong institutional support from professional journals, academics, national governments and funding foundations. Critical research has attracted only a small group of adherents. They are struggling for the survival of their ideas. Their positions are very marginal in the establishment, and thus are also vulnerable (Halloran, 1973, 1981, 1987; Smythe & Van Dinh, 1983). AS J.D. Halloran (1973) says, "We are surviving, but we do ask ourselves from time to time how long we are going to be allowed to continue with our sort of work." To seek compatability between opposing perspectives will result in the cooptation of the marginalized and the weak by the dominant and the strong. Pluralism could hardly be maintained. I therefore agree to Hamelink's (1983b) proposal to seek a radical departure from the mainstream perspective.

Often, anyone who strongly advocates a position, is accused of being biased; one-sided. There is no doubt that I have a bias, probably no more or no less than those who

would accuse me, since all of us have some worldview or other. According to J.A. Blair, "bias means a kind of leaning, or an inclination, or a predisposition" (1988, p.101). He further states,

> "We have to distinguish three senses of the word 'bias.' Firstly, bias may be an unfair slanting of material, violating a norm of fair representation. This type of bias is harmful and avoidable. Secondly, bias also may be the selection of facts and aspects of reality from some particular point of view. This kind of bias is inevitable, it is neither avoidable nor harmful. Thirdly, a rare use of bias can be a good thing. In this sense, we speak of people as being biased toward the good or toward truth" (1988, p.93).

I believe that I have given a fair account of the mainstream perspective in terms of avoiding overgeneralization, by citing the literature, and by using relatively neutral language[4]. My choice of critical perspective is based on theoretical and empirical grounds. I therefore argue that "I have a bias", rather than "I am biased", in the sense that my commitment to the critical perspective blinds me to evidence against it, if there is any, and to the weaknesses of the critical perspective. I will comment about it in the following chapter.

5. TO CONSTRUCT A THEORETICAL MODEL

Critical theories are very diverse. They are nowhere near the point of internal coherence that is achieved by the dominant mainstream perspective. I cannot defend them on the basis of either their internal coherence or the character of a finished and completed critical project. What we can do instead is to advance their alternative theoretical points, conceptual tools and explanatory frameworks, and defend their oppositional thrust. By so doing, we can contribute to reaffirm the lines of countertendency, the essentially and necessarily oppositional set of positions (Hall, 1989).

Critical scholars do share "the war of position" in terms of deconstructing the simple linear causality, the technocratic rationality and the control motive and ethnocentricism of the mainstream perspective. However, in the place of the mainstream perspective, we must not only deconstruct but also offer alternatives. It is important to note that we are facing the revival of the technocentric modernization paradigm that is supported by the majority of communication scholars, transnational corporations, national elites, and intergovernmental organizations. We are living in a technology-biased environment. We are opposing a perspective that has become conventional wisdom.

I would posit that we need to advance a theoretical model on the use of new communication technologies in Third World societies. The model would offer an analysis of the

relationship of the new communication technologies and Third World societies, and propose strategies of technological intervention that is distinct from that offered by the mainstream.

The critical scholars I have discussed have already contributed certain alternative theoretical points. The major differences are the conceptions of causality of technologies and society, the underlying theoretical approach to studying Third World society and technology, and strategies for technological intervention. I consider an attempt to synthesize their various theoretical points and resolve these differences as a step toward advancing the theoretical model. A theory offers a model and conceptual tools to help grasp the phenomena. It has to be clear and coherent, and I see that is a crucial criteron for a compelling theory. Therefore, I shall also discuss which type of theorizing best serves this purpose.

5.1. New Communication Technologies and Third World Society: the Conceptions of Causality:

All critical scholars account for the social forces that shape the application of new communication technologies in Third World countries. They differ in the estimation of the outcome. Teheranian (1988) criticizes Schiller and Hamelink for overestimating the power of technologies and the transnational corporations. Teheranian posits that the impact of the use of technologies is always mediated through

institutional arrangements and social forces, of which technologies are an integral part. In other words, technologies have their relative autonomy, partially independent of the monolithic control system. Technologies, as an integral part of the social forces, can also exert their impacts on society. The outcome is not predetermined. Servaes (1988) prefers having an appropriate mix of technologies and not just "home-made" technologies. Servaes claims that international and national policy making may help safeguard the beneficial uses of technologies. Jayaweera prefers to harness the new technologies' productive use.

Those who disagree to the predetermined outcome of the use of technologies argue that there are multiple forces rather than a single force (like the transnational corporations), and internal forces in addition to external forces that determine technology adoption and transfer. The particular outcome of the use of technologies is determined by the interaction of various forces, rather than a single force.

In other words, the conceptions of causality of the relationship between technologies and society is determined by the theoretical approach to the study of society and the study of technology. The conceptions of causality in turn affects the strategies of technological intervention.

5.2. Different Theoretical Approaches to the Study of Third World Societies:

Schiller uses the political-economy approach to study society. A political-economy approach focuses on the capitalist institutions, and their relations to the economic policies and actions, as the major determining forces in shaping social phenomenon (Symthe & Van Dinh, 1983). Schiller claims that transnational corporations are the predominant force in the global capitalist system.

Schiller does not exclude the historical specificity of each Third World country, and the role of their governments and other internal forces in explaining their technological policies and the impacts of the technologies on these countries (Schiller, 1978, 1979; Tsui, 1990). But he argues that the historically particular national development process must be put into the context of the evolution of capitalism, and its local and national manifestation. At present, he thinks transnational corporations are the major determining institutional forces common to most Third World countries, that shape the economic, social, cultural and ideological phenomena of these countries. The existence of the transnational corporations is the "common denominator" that can be applied in analyzing most of the Third World situations (Tsui, 1990).

Teheranian's theory is an elaborate analysis of the space existing between the contradictions of global capitalism that allows counterforces to work against the domination of the

transnational corporate system. Though transnational corporations are dominating, they are not overwhelming. Many other actors like Third World governments, non-governmental organizations and grassroots communities do have the relative autonomy of their own to maneuvre in the system.

In sum, the questions are: Is Schiller's theory too monolithic? Does it only account for the single force, the transnational corporations, and ignore the others, and fail to explain the realities? Does Tehranian offer a better approach to the study of Third World society?

Some accuse that such a political-economy approach to realities is too deterministic[1]. The power of the capitalist system is so overwhelming and its ideological control so hegemonic that it seems impossible to perceive any possibilities of change. Such theory fails to illustrate the possibilities of social change. While it has contributed significantly to our understanding of the overwhelming control of the major force of the politico-economic environment Third World countries face, it has given little attention to analyzing the factors leading toward social change. The political-economy approach as such leaves no emancipatory space for resistance to the dominant power structure. They posit that the explanation of the social rigidities imposed by the politico-economic environment is necessary. But more important is the continual social analysis of the possibilities for change within the contexts of social rigidities (White, 1984).

I think Schiller definitely agrees to these principles. Schiller (1976a, 1981) has consistently reflected upon the continual research on the transnational corporate system, revealing its vulnerability, and attempted to offer theories to confront it so as to help progressive forces seek for change. His attention to transnational corporations is influenced by the intellectual climate of his early career, personal reasons, as well as the empirical reality.

Schiller evolved his own analysis at a time when the dependency paradigm was emerging in Latin America, and the world system theory in the US[2]. Both schools attribute external factors (manifested by transnational corporate system) to the underdevelopment of the Third World. This also explains part of the reason for Schiller seeing external factors as more crucial in shaping Third World realities.

Schiller is fully aware of the personal factor (i.e., his physical location in the US where most of the powerful transnational corporations originated) permeating his research, and admits this in the preface of his book (1981):

> "A possible consequence of this emphasis (the emphasis on the overwhelming power of transnational corporations) may be that there is an overestimation of the power of the transnational and national business system surveyed. If indeed there is, it occurs partly because of geographical and personal considerations. It is difficult not to be influenced by the very tangible evidences of power and its still relatively uncontested position in the domestic field" (1981, p.xvii).

Nevertheless, I argue that the manifestation of sober Third World realities support Schiller's argument. The

transnational corporate system is very much in power. The adoption of new communication technologies has tended to subject Third World countries to more economic and technological dependence on First World countries than before. Many Third World countries, like the Philippines, Malaysia, Jamaica, and Mexico have become off-shore data entry locations that offer cheap women labor for the production of fragmented parts of high-tech for transnational corporations (Brown, 1986; Hamelink, 1983a).

The Indonesian Palapa satellite system manufactured by Huhges Aircraft, can be switched off when so requested by Huhges or by the US Defense Department (Hamelink, 1981, 1985; Schiller, 1981). The national sovereignty of a nation dependent on transnational corporations of space communications is uncertain.

The political independence of Third World countries do not presuppose economic and cultural independence. Given the compelling ideology of progress propagated, and the persuasiveness of the new technologies packaged and promoted by transnational corporations, it is hard for Third World governments to resist the technologies. Time has changed. Giant information technology transnational corporations have become principal actors in promoting modernization. The 1960s saw the peak of a wave of studies and social experiments financed by the Ford and Rockefeller Foundations, and U.S. aid programs that sought to find the social uses of media technologies. These served as the vanguard in the

creation of Third World markets. In the 1980s, transnational corporations like IBM seem to have taken over all other international organizations in prospecting for markets and in offering solutions, especially in Latin America. "Solving problems is what characterizes the basic activity of IBM" (IBM advertisement). Its reasoning is based on one prerequisite: the computer is the best solution to all problems, and IBM, more than any other firm in the world, is the vanguard of this type of solution (Mattelart, 1985, p.140-1).

The dependency theorist, Peter Evans (1985), has conducted vigorous research on the role and relative autonomy of Third World state vis-a-vis transnational corporations. His argument is based on the past decades' experience of Third World states taking over the mining and manufacturing industries established by transnational corporations in their countries. He concludes that internationally, the transnational corporations remain largely unchallenged. "If Third World states have increased their power, the extent to which this increase has been at the expense of the transnational corporations remains ambiguous at best... The constraints imposed on the state by the necessity of relying on global markets remain no less powerful" (p.201). The technologies employed in these industries are rather stable, not quickly obsolete. Still, it is not easy for Third World governments to gain a controlling position. Therefore, I argue that new communication technologies with their

technological complexity and changing nature, make Third World governments weaker when they deal with transnational corporations.

Instead of fantasizing the strength of nation-state, Schiller detacts that the transnational corporate system itself creates its own vulnerability that lays the basis for the social transformation and replacement.

> "Potent as it is, the system is beset by crisis which is intensely reflected in the communications field: growing unemployment, energy shortages, vast arms expenditures, inflation, political turbulance around the globe, deepening rivalries between industrialized capitalist states. A large part of the world's population has vocally demonstrated that they have had enough of exploitation and misery, and the transnational business system can no longer supply the unmet needs it has created.
>
> The transnational system's requirements contribute increasingly to its vulnerability, and no where is this more clear than in the communications field. The system needs instantaneous communications for its daily operation. It needs massive sales of equipment and programming to maintain profit margins, and must have increasing access to spectrum space to transmit its messages. It has become overwhelming dependent on unimpeded access to its farflung facilities and to global audiences of potential consumers" (1980, p.65).

Schiller does not succumb to defeatism. He sees that people can be determining in bringing about change. Therefore, he continues to reveal the system, to help people understand the reality, and to seek for change:

> "All of the developments that are reviewed in this work are the outcome of complex interactions of economic, political and cultural forces. People are either directly or indirectly involved in all of them ... people can be determining in the creation of their own technological and informational space, if along with the pretense of

> other circumstances facilitating change, they know what their realities actually is" (1981, p.xviii).

Teheranian's analysis is based on visions rather than empirical reality. It is true that the present political system is organized in the forms of nation-states. But this does not necessarily imply that nation-states are economically and culturally independent to resist the unfettered transnational corporations.

There is of course the occurrence of grassroots movements. The several successful cases presented by Teheranian are not enough to justify that grassroots movements can make use of the technologies to propel social changes. I am afraid that Tehranian, like many other researchers, offer modes of social change and democratization that are far too utopian and urge a radical revolutionary change more rapid than the social process permits. While Teheranian (1988) promotes the use of small media and computer networking to advance communitarian movements, he has not clarified how these are realized in specific socio-political contexts. Various Latin American studies of community radio and public access channels indicate the general tendency toward cooptation by commercial structures and elites (White, 1984)[3].

Nevertheless, Teheranian's contributions in defining social transformation, and formulate strategies of social intervention are very important. Schiller and Hamelink do not offer them. What Schiller does is explain the reality,

and help us understand it rather than offer us concrete strategies of intervention. Hamelink (1983a) devotes some efforts in formulating the principles of a national information policy together with his dissociation strategy. He suggests national control vis-a-vis transnational control, and decentralization and avoidance of control by the professional elite. He also recognizes the alliance of Third World ruling classes and transnational corporations. What is the mechanism to push for the realization of his principles?

Teheranian's theory is the most insightful in this aspect. He clearly identifies that the actors for social change are the grassroots communities and non-governmental organizations, not the national governments and the elites. He focuses on social movements, rather than national technological policy making. He emphasizes community rather than nation-state, monistic universalism rather than nationalism, and on spiritualism rather than secular universalism (Communication Research Trends, 1988/89). Clearly, he is apparently influenced by the Islamic world view of the concept of "ummah" (community) fundamental to the West Asian culture. His communitarian approach is inspired by Gandian philosophy and the experiences of grassroots movements. It aims at a socio-cultural transformation of "spirit and human tradition of civility" (1988, p.28). He recognizes not only the economic exploitation by capitalism but also the political oppression by communist regime (Teheranian, 1986, 1988). He therefore proposes that we seek

for socio-cultural transformation rather than only a social structural change, as an alternative to the existing capitalism.

Teheranian's theory captures the possibilities of change in the social rigidities of the political-economic conditions. However, to offer models of social change without recognizing the social rigidities of the political economic environment would be too utopian.

I suggest three questions that advocates for the use of new technologies by communitarian movements need to consider:
1) How do communitarian movements emerge and develop within situations of high concentration of social power and hegemonic control in a way that permits autonomous communication channels?
2) What political-economic conditions are necessary for the survival and growth of democratic institutions once they have begun to take shape?
3) How can the communitarian groups avoid being trapped in the dominant commercial structure and professionalism when they employ the new communication technologies?

Schiller offers is a political-economy analysis of the global capitalist system, in which Third World countries is situated. He does not address particularly to Third World countries. Regarding how the internal forces within these countries are articulated to the external forces, Third World scholars with the understanding of the distinct culture and social structure of their societies, would be the best to

contribute to this part of the theoretical work. Jayaweera's (1987) examination of the internal forces and traditional cultures of Third World societies is a good starting point.

I think the major inadequacy in Schiller's theory lies not in the political-economy approach, but in the lack of refinement of certain claims. Schiller does not clearly explain how the foreign media products extend cultural imperialism. He draws direct relationship between ownership, structure, distribution, and content of media products, and the impacts on Third World audience. It is justifiable for a political-economist to trace the ideological force of the media back to the transnational corporate system in general. Yet, how does economic structure affect or determine the communication-cultural practices? And how do these processes affect the day-to-day consciousness of Third World peoples?

Schiller is seen as adopting the simplistic notion of a superstructure (communication practices) being the reflection, expression or reproduction of the base (economic structure) (Slack, 1984a). His political-economy approach is mistaken as a positivist, linear-causal mechanistic approach. But I see the problem as a lack of theoretical refinement, not bad theory.

I think Raymond Williams' statement is very apt for Schiller to reflect upon.

> "We have to revalue 'determination' towards the setting of limits and the exertion of pressure, and away from a predicted, prefigured and controlled content. We have to revalue 'superstructure' towards a related range of cultural practices, and

> away from a reflected, reproduced or specifically dependent content. And, crucially, we have to revalue 'the base' away from the notion of a fixed economic or technological abstraction, and towards the specific activities of men in real and economic relationships, containing fundamental contradictions and variations, and therefore always in a state of dynamic process" (1973, p.6).

Graham Murdock (1989) points out that critical research has been hampered by Marx's famous proposition that the mode of production "determines in the last instance." I see Schiller's theory hampered similarly. Schiller posits that "structure is ultimately dependent on economics" (1976b, p.8). Murdock states, "The 'last instance' implies that however far we move from analysis of economic forces and relationships it is always possible to trace a direct line back,... This way of conceptualizing the problem has the effect of encouraging a research for one-to-one relationships between the economic and symbolic dimensions of communication" (1989, p.229). Murdock suggests that we revise "the last instance" of the original formulation to "the first instance." Economic dynamics is thus "a necessary starting point for analysis but not a destination. Economic dynamics are crucial to critical inquiry because they establish some of the key contexts within which consumption takes place, but they do not negate the need for a full and separate analysis of symbolic determinations" (1989, p.229-300).

By clarifying the relationship between economic structure and other practices in this way, Schiller's

political-economy theory can accomodate the practices like the organized cultural resistance in Teheranian's communitarian movement approach. In addition, his theory would not convey a deterministic and monolithic impression.

5.3. Differing Approaches to the Study of Technologies and Strategies of Technological Intervention

Hamelink criticizes the critical scholars who advocate the alternative use of new technologies. He argues that their problem is that they see the study of technologies as a sociological issue, and that they fail to go further to the root cause -- the inherent epistemological grounding of the technologies.

Hamelink finds that even Schiller concedes to the view of alternative use: "...even Schiller concedes that 'The possibility of alternative uses, in some cases, of a technology, whatever its origin, must be admitted' (Schiller, 1976a, p.55)" (Hamelink, 1986a, p.19). To Hamelink (1986a, 1988), the origin of the technologies exactly defines their principal application, which will inevitably outweigh any alternative use in terms of volume and impact. He analyzes that the new technologies rest on the Newtonian tradition that has created mechanistic knowledge, characterized by its interest in mastering and controlling nature. Therefore, Hamelink posits that "the thought that the quality of technological applications depends upon the social groups which utilize them distracts from the attention for technologies' inherent bias (1986a, p.19).

Hamelink (1986a) posits that there is an additional problem with alternative uses of computer technology -- by training more people to be computer literates, and allowing more participation of individual users, technologies can be neutralized. The "fallacy of computer literacy" to him is that it teaches people to cope with the machine and confuses this with an understanding and control of technology.

Hamelink (1986a) criticizes that Schiller, by focusing on the social structure as the exclusive deterministic agent, leaves open "the possiblity of a reductionist social model" and establishes "a sociological fix". For every technological problem, one then looks for a sociological answer. It does not answer the persistent question of why different social structures (like the USSR and US) worship technologies.

I think Hamelink's challenge is very valid. By examining the issue as a sociological one, and offering a sociological answer, one does not provide a correct strategy of technological intervention. Without examining technologies from the epistemological side, Schiller's vision of social change is still limited in the form of structural transformation -- the replacement of the capitalism. What Hamelink implies is even if the capitalist system is replaced by a new social system, the new system may still worship high-tech, and adopt the same technological policy that is biased toward the superiority of mechanistic knowledge.

According to Hamelink, only through this recognition, one would transcend the question of the principal versus alternative uses. This, to Hamelink, is particulaly relevant to Third World countries, "to which it is repeatedly suggested today that the developmental application of information is a short cut to social progress. This progress, as it is inevitably accompanied by large scale importation of information technologies from the industrialized countries, discourages the development of their own potential for knowledge generation" (1986a, p.19).

However, I disagree with Hamelink's comment that Schiller's analysis would establish a sociological fix. A political-economy analysis that identifies the capitalist institutions (or in Hamelink's term, the social structure) as the major determining force, does not in itself necessarily exclude the recognition of other forces or factors. Schiller expresses that the inherent characteristics of the new technologies is a product of capitalism (Tsui, 1990). In other words, a political-economy analysis can incorporate an epistemological analysis of the nature of technologies.

Hamelink's epistemological analysis is theoretically sound but practically not convincing. Third World countries have already rushed to adopt new technologies. Even Schiller recognizes that it is very unlikely that Third World governments would adopt the strategy of dissociation, though it is a wise and desirable strategy. Hamelink's analysis is functional to the critical perspective, as a theoretical

critic. It presents an epistemological analysis of the inherent bias of the technology that few critical scholars have paid attention to. This is important for those who advocate alternative use of technologies to reflect upon.

Servaes (1988) advocates striking a balance between the integrationist and dissociation model. Jayaweera (1987) posits that the adoption of technology, and the simultaneous pursuit of structural reforms are not mutually exclusive options. But these are expressed as proposals and hopes rather than proved by historical evidence. Both Servaes and Jayaweera have to research on how the mechanisms (national and international) work within the existing social rigidities of Third World countries, to allow the beneficial use of new communication technologies.

Schiller says, "If leaders distance themselves to a certain degree from the control of the transnational corporate system, and their country enjoys national independence, they can play a larger role" (Tsui, 1990). Given the structural constraints he detects in Third World countries -- the elitist control, and the alliance of Third World classes with the transnational corporate interests, what is the mechanism to push for the realization of his strategies? There seems to be a gap between vision and reality that he has not addressed.

5.4. What type of theorizing serves best as an alternative theoretical model?

A theory claiming to explain everything actually explains nothing (Saunders, 1981). To build a theory, one has to organize the empirical evidence, sum up the core commonalities, regularities, and inevitablities, and drop irregularities or exceptions. To build a theoretical model of communication technologies and Third World development, it is inevitable to generalize Third World realities and simplify the diversities.

To build a theory is different from conducting a case study. A case study permits a detailed description of the interaction of various social forces and technologies (Mody, 1989; McAnany, 1989; Sussman, 1982; Mattelart, 1985). A theory offers a model, a framework, conceptual tools, and lens to help grasp the phenomena and examine particular cases. A coherent and clear theory would not list all the forces and contexts, without setting priorities. A linking force of the multiplicity of contexts is required, otherwise the theory purporting to explain everything actually explains nothing. To conclude, to build a theory, one has to strike a balance between generalizability and specificity, and complication and precision.

Schiller's political-economy analysis that identifies clearly the major determining force in shaping social phenomena serves best as a coherent, compelling theory. A theoretical refinement incorporating the points advanced by

other colleagues -- that enable the articulating of the internal and external forces affecting development of Third World societies, accounting for the dialectical relationships between economic structure and communication-cultural practices, the actors and possibilities of socio-cultural change, and the inherent characteristics of new communication technologies -- can serve as a theoretical model I aspire for.

6. CONCLUSION

> "One wonders also those who were till yesterday talking most forcefully about freedom from dependence are creating new avenues of dependence for themselves? And for what? ...
>
> Despite knowing all this we seem to be trapped within some established myth which neither history nor experience can corraborate. We are not moving toward a global village, or international understanding, and the mass media technology has not proved to be a salvation to the third world masses although it may be increasing the business of some multinational corporations.
>
> We are still using terms which have long since been discarded. We are still working within the framework of myths that have been exposed. What is the cause of this blindness?" (Communication, 1986, p.2).

The above quotation is from an editorial in the quarterly journal, Communicator, of the Indian Institute of Mass Communication. It is a reflection of an Indian scholar on the rush to adopt new communication technologies of Third World countries. The development experiences of the past decades have shown that the introduction of productive technologies (agricultural/industrial machinery), and consumption and culture (media technologies) have not only failed to generate development, but has instead subjected Third World countries to more economic, technological, and cultural dependency. These technologies have also been propagated as unique and advanced (like the "green revolution" package) when they are newly discovered, invented and promoted. Why are so many intellectuals and policy makers sill working within the framework of myths which neither history nor experience can corraborate?

The myths are supported by a set of mainstream theories that are propagated by an alliance of academicians, national elites, intergovernmental organizations and transnational corporations, intentionally or unintentionally. The mainstream theories incorporate newly emerging principles like popular participation, provision of basic needs, growth with distribution, and respect for traditional cultures, and undermine them by going the traditional route.

Through a historical documentation and discourse analytic method to uncover their theoretical, methodological and epistemological positions, I find that their theorizing has not changed one iota. The perspective retains the technocentric modernization paradigm. This perspective does not have the tools to conceptualize totality in its full contexts. It tends to negate the unequal power arrangements. It assumes a simple linear or symptomatic causality to explain the relationship of technologies and society. By so doing, the technological analysis is ahistorical and apolitical, and tends to consolidate the dominant powers that continue to create and support the myths of progress through the use of advanced technologies.

The mainstream perspective is guided by positivism epistemologically, and empiricism methodologically. Their intellectual positions are biased toward the objectivistic conception of science, and the research they support is oriented to analyzing fragmented units, not the totality, and the visible and explicit, not the invisible and implicit.

What they end up doing is use the research results, arrived at by conducting reductionist quantitative-statistical analyses and field experiments, to justify their claims.

Critical scholars try to debunk the myths propagated by the mainstream perspective. They address the important question of unequal power arrangements in the existing capitalist system. These scholars examine technologies in their full contexts. They base their arguments on historical, cultural, socio-economic, and political analyses. They tend to favor qualitative studies that examine the phenomena in their full contexts. But such a perspective that is antagonistic to the dominating power is marginalized in the academia.

By not placing epistemology, theory and politics in the center of the discussion of communication technologies, it is no wonder that a scholar like Rogers can propose that both perspectives can learn from each other, and that the mainstream perspective can adopt some aspects of the critical perspective. Such a convergence fails to acknowledge the fundamental differences of the contrasting perspectives and would probably result in the cooptation of the critical perspective.

I therefore agree with Hamelink's call to critical scholars to seek a radical break from the mainstream perspective. However, it is not enough for critical scholars to deconstruct the mainstream perspective. They need to construct a theoretical model. This theoretical model should

fulfil the task of offering an explanation of the relationship of new communication technologies and Third World society, and a strategy for technological and social intervention. The critical scholars discussed have already contributed to some theoretical strategies and frameworks, that can be synthesized to build such a model.

Schiller's political-economy approach describes the politico-economic environment in which technologies are applied. He identifies transnational corporations as the dominant force in determining the process of technology transfer and its application. While Schiller's analysis confronts the power structure, Hamelink's epistemological analysis of technology confronts the ideology of progress through technological growth. Hamelink uncovers the problem of the inherent characteristics of the mechanistic knowledge the new technologies rest on. These technologies are oriented toward manipulation, not liberation. The importation of these technologies along with Western knowledge is the greatest obstacle for the generation of indigenous knowledge.

This model should not end with description and explanation, but also empower people to seek for self-determination. Teheranian's communitarian approach identifies grassroots communities and non-governmental organizations as the major actors propelling social change. Tehranian offers the conceptual tools to capture the possibilities of change in the social rigidities of politico-economic environments.

While Teheranian offers strategies of social intervention to actors at the grassroots level, Servaes and Jayaweera offer a picture of social reality that has to be faced by the national policy makers in designing strategies of technological intervention.

By explicating social reality, and expressing caution over the use of new communication technologies, critical scholars are often characterized as pessimists. Given the past decades' development experiences, it is understandable that they are intellectually pessimistic, though, I see, they remain spiritually optimistic (a rephrasing of Gramsci's words). Hopefully, the theoretical model will not only explicate social reality, but also illuminate the possibilities of social changes that help reassert the hopes of the oppressed majority in our world. This will depend on the future changes brought by social movements, and the practice of technological intervention oriented toward genuine development.

The pathway to accomplishing this critical project is long and hard. The following quotation would apply to all of those who are part of this collective effort.

"Behind every 'no' lies a passion for 'yes"[1].

FOOTNOTES

Chapter 1:

1. I use "perspective" rather than "theories" to categorize the differing views on the issue discussed. I see theory as a coherent body of knowledge that attempts to organize and explain some phenomena. A perspective on a topic can suggest both an organized and coherent body of knowledge and one that is less organized. Not only is "perspective" more encompassing than "theory", the notion of perspective is an important one. To say someone takes a "perspective" on a topic is to say that the person has a particular way of intepreting that topic. A perspective denotes a set of conceptual lens through which a person views the phenomena. I see not all critical researchers have coherent theories of their own, but they do share similar conceptual lens to view the issue. Within each perspective, I shall choose several scholars who have formulated rather coherent analyses. I shall label these analyses as theories.

2. "Discourse" is a term used to convey different meanings by different scholars. I adopt the most open definition (by Gilbert & Mulkay, 1984) that covers not only spoken interaction but also written texts. I see discourse analysis (the underlying theoretical and epistemological structures of the texts) as different from text analysis (actual linguistic performance). I define discourse analysis as a way to uncover the underlying theoretical and epistemological structures of the theories discussed.

Chapter 2:

1. Administrative communication research is characterized as the research "carried in the service of some kind of administrative agency of public or private character" (Lazarsfeld, P.F. 1941, "Administratve and critical commmunications research", Studies in Philosophy and Social Sciences.

Chapter 3:

1. Hudson and Parker, by their specialized knowledge of telecommunications and rural development in North America, spearheaded the social science community's response to the call by the ITU, the World Bank and other agencies for telecommunications policy research.

2. Rogers admits that the modernization paradigm he has adopted before, was biased toward economic growth, and ignored the inequitable access to resources of the majority in Third World societies as the main obstacle for genuine development. He recognizes the endogenous bias of the

modernization paradigm and the existence of external constraints on Third World development. He perceives that he himself, together with the recognized critical scholars like Tehranian, Golding, Jacobson and others now contribute to the rethinking and making of a "new" paradigm for development.

3. I interviewed Schiller regarding his theoretical and methodological positions, and his perspective on the use of new communication technologies in Third World countries (Nov. 23, 1989). The interview is recorded in "A Critical Review of Herbert Schiller's Perspective", Unpublished manuscript, Department of Telecommunication, MSU, 1990.

4. Schiller defines "cultural imperialism" as "the sum of the processes by which a society is brought into the modern world system and how its dominating stratum is attracted, pressured, forced, and sometimes bribed into shaping social institutions to correspond to, or even promote, the values and structures of the dominating center of the system" (1976a, p.9).

5. The technophiles are the optimists who believe that the present "technological revolution" will finally trickle to the peripheries. According to this definition, I suspect he would put Pool, Hudson and Parker in this category. The technophobes are, by contrast, rather pessmistic about such promises, and they point to the danger of cultural homogenization of national civilizations and further dependence of Third World countries on First World countries. He puts Schiller and Hamelink into this category. Technoneutrals are the consultants who have little theoretical background but have considerable economic interests at stake. They often assume a neutral position with regard to the question of effects.

Chapter 4:

1. During the mid 1970s, Parker provided technical assistance and consultancy to Iran, Alaska and the United States Agency for International Development (USAID). Hudson was Parker's student at Stanford. After graduation, she was heavily involved in various projects funded by the ITU and OCED (Hudson 1981, 1982b; Hudson, Hardy and Parker 1981). She continued to consult for the ITU USAID, UNESCO and the World Bank. Her growing reputation as a leading policy researcher in the field of telecommunications and development led her appointments as a member of the US Space WARC Advisory Committee and as a special advisor to the International Commission on Worldwide Telecommunications Development (the Maitland Commission).

2. I was a panel member in a conference organized by Rogers (Annerberg School of Communication, University of Southern

California), on "Information Technology in Developing Countries" (Nov. 29- Dec. 2, 1989), sponsored by Apple Computer. From the personal conversation with Rogers, I got to know that he is eager to obtain technical support from Apple Computer, and financial support from the World Bank, to continue an experimental project of using cumputer communications in some villages in Bali, Indonesia.

3. In 1979, Parker made the cross-over from academia to industry. He co-founded the Equatorial Communications Company, an entrepreneurial concern with object of developing very small aperture terminals (VSATs) for data communication via satellites. In the years that followed, Parker's company successfully pioneered the new product and was largely responsible for the creation of the low cost micro earth industry. In 1987, Equatorial was aquired by Contel ASC. Parker served as President of the Data Networks Division of Contel for one year. In 1988, he left the industry to set up his consulting firm, Parker Telecommunications. While he established Equatorial, he continued to work on research projects funded by the ITU and USAID.

4. As compared to Pool, a social scientist who claims the importance of objectivity, I use much more neutral language in labelling and describing those I disagree with. Pool, in his research paper, labels his opponents as "unhappy nationalists, guilt-ridden Westerners, worried reactionaries, and angry radicals" (1979, p.128).

Chapter 5:

1. Most of the challenge is from the critical scholars doing cultural studies. There is a continuing debate between the political-economy approach and cultural studies, on the relative autonomy of culture vis-a-vis economic institutions. Scholars doing cultural studies tend to see the political-economy approach as reductionist and economic-deterministic (Communication Research Trends, 1987).

2. The world system theory, developed by Immanuel Wallerstein, retains the tenets of the Latin American dependency theory: to see the external factors,i.e., the transnational corporations and First World countries are the major actors to subject Third World countries to dependence. According to the theory, the world economy is characterized by a geographically differentiated division of labor among the internationally stratified core (First World countries), semi-periphery (NICs) and periphery (Third World countries). They are tied together by a world market of commodities and a system of "unequal exchanges" (dictated by the core-countries) through which the peripheral countries are exploited. The possibility of a change in the structural position from a peripheral country to a semi-peripheral

country is open only to a few. A genuine transformation of the world system into a socialist world system.

3. In Latin American popular radio, the "Voice of the Voiceless" has attempted to support itself with selected advertising, and thus some dependency on advertizers inevitably develops (White, 1984). Community radio stations in various parts of the world, which are manned by volunteers and supported by direct subscriptions, find that the pressure to compete with other stations places ever greater demands for a wider range of financing that can compromise responsiveness to the continuance of their initial objectives (White, 1984).

The technological and financial requirements of some media allow greater freedom. For example, small offset presses and cassette recordings make it possible for small groups to maintain control. Radio licences, however, are regulated by governments, and only those recognized as having a cultural or public function can get these licences. Record reproduction (especially discs) is costly, and groups must rely on commercial producers who can mobilize the necessary capital (White, 1984).

Chapter 6:

1. This is a single quotation from Daniel Berrigan, used by Michael Real (1984).

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