In this essay I discuss the limited gain and potential harm of health development programs that are directed by the assumptions of Western ideologies surrounding the sickness domain. By contrast with the realities of medical practice in the West and the Third World, three aspects of the cultural model of biomedicine are examined: (1) the implicit assumption that biomedicine is a body of widely shared knowledge that directs sickness behavior, and that this knowledge and the institutions in which it is applied are objectively and intrinsically related to each other; (2) the belief in the effectiveness of biomedical techniques; and (3) the implicit model of the ideal rational patient. I argue that the effectiveness of health development projects is lessened if they are planned on the basis of this orthodox biomedical orientation. Furthermore, I suggest that the practice of viewing Third World health development in terms of biomedical ideology inhibits consideration of the influences of both the political and physical environments on the distribution of sickness. Health planners are advised not only to implement culturally appropriate projects but also to promote awareness of important influences on health that biomedical discourse helps obscure from consideration.

Like all systems of healing, biomedicine is a cultural product: it is formed in, reflects, and helps to create and recreate a social and cultural world. Biomedicine is socially constructed principally in terms of its subject matter, its epistemological basis, and its accepted mode of practice. Integral to the conception of biomedicine, however, is the belief that it objectively describes reality and is not influenced by social processes. There is, then, a discrepancy between the commonly accepted biomedical model and the reality of socially embedded theory and practice (Comaroff 1983). Yet the discrepancy between model and reality often remains unrecognized, and health planners act as though biomedicine is a socially neutral package that can be made to enter a medical “vacuum.” This failure to recognize the social accoutrements of technical practices frequently renders those practices incongruous with the beliefs, needs, and expectations of the people they were intended to serve. The result is often minimal benefit from expensive, well-intentioned plans. Acknowledgment of and accommodation to the socially embedded nature of biomedicine are necessary if appropriate aspects of it are to be used to improve the health of people in the Third World.
After a discussion of the social origins of biomedicine, I will present three aspects of the biomedical model: first, the notion that biomedicine is a body of specific, widely shared knowledge that directs sickness behavior within a fully differentiated institutional framework that is intrinsically related to technical practices; second, the implicit model of the ideal rational patient; and last, the belief in the effectiveness of biomedical techniques. Each of these aspects of the cultural model of biomedicine will be contrasted with the realities of the “medical” domain. The consequences of health planners’ acceptance of the hypothetical model for health development in the Third World will be indicated. I will conclude with some suggestions as to how health development can be planned more effectively.

The Social Origins of Biomedicine

Biomedicine must be understood in its cultural context. Bodies of medical knowledge and accompanying practices are symbolic systems: they have referents to other aspects of culture beyond their ostensible boundaries. Although diseases have biological correlates, how they are recognized (if at all), expressed as illness, classified, understood, valued, and treated varies greatly from culture to culture. These processes are facilitated by the medical symbolic system, which is embedded in and derives its signification from a wider cultural context (Comaroff 1983; Kleinman 1973). Biomedicine, like all other medical systems, reflects the dominant characteristics of the culture of which it is a part.

Although Western culture is not an ideologically homogeneous entity, it contains a dominant worldview, which is the product of the Enlightenment. Prior to that time, Renaissance Naturalism, or vitalism, had prevailed as a dominant outlook. Naturalism had emphasized the unity of spirit and matter: natural phenomena were manifestations and reflections of God’s essence. People, as part of nature, were believed to be best understood through reflection on God’s purposes rather than through experimentation and investigation (Osherson and Amarnath 1981:222). Two streams of thought converged during the Enlightenment to produce the groundwork of a new dominant ideology. The first was the widespread acceptance of the distinction between superstition and reason, including the belief that the former could be transcended by the latter. That is, the natural world was to be understood as an amoral realm that is subject to laws, rather than the caprice of gods and mysterious forces. The second ideological development of the Enlightenment was the emergence of positivism. According to this view, reason, based on “facts” attained through observation or measurement, was to be the foundation of knowledge. Positivist science rather than other forms of reason and imagination became the source of authoritative knowledge (Foucault 1966).

Weber and, more recently, Habermas and Marcuse argue that this worldview dominates Western society. The result, according to Weber (1968[1922]), has been the extension of means-end rationality to the conduct of all aspects of life and, according to Habermas (1970) and Marcuse (1964), the rise of scientism or technocratic consciousness. Because of its basis in positivism, scientism only permits “facts” derived from observation and measurement to be counted as knowledge. Consequently, conclusions or judgments based on alternate reasoning processes (ethical judgments, for example), can never be considered as valid as “sci-
entifically’’ derived knowledge. Furthermore, since scientism does not admit that non-‘‘scientific’’ reasoning can yield knowledge, in this way of thinking there are no valid grounds for denying the authoritative preeminence of scientific reasoning. Thus, in a society dominated by scientism or technocratic consciousness, scientific ‘‘objective’’ reasoning predominates over and cannot be questioned by other forms of reasoning. This was part of the intellectual milieu in which biomedicine emerged in the West.

Also integral to biomedicine from its inception has been a conception of the body as an entity separate from mind. From the 17th century onward, this dualistic image of humans has predominated in Western culture (Osherson and AmaraSingham 1981; Scheper-Hughes and Lock 1987:8–13). In addition, the body itself is seen in parts, not as a whole. Cartesian dualism, combined with the emerging mechanistic orientation, laid the basis for biomedicine. The resulting ontological model of disease views the individual mechanistic body as host to disease, which is perceived in turn as a specific entity independent of the patient’s social circumstances and personal characteristics. Sickness in this model is an entirely biological phenomenon situated within individual bodies as a completely natural process.

Reflecting this view of disease, medical perceptions and treatment have until recently been modeled largely on the acute bacterial model, which focuses on the ‘‘final common pathway,’’ the biochemical process that takes place within the human body (Foster 1976). Some disciplines, such as public health, family medicine, and psychiatry, have always explicitly taken into account social and psychological, as well as physical, variables in disease etiology. In general, however, multicausal awareness has usually been replaced, in the exigencies of practice, by a model that emphasizes a single etiological cause of disease. Social factors have been assumed to be self-evidently distinct from medicine or, when considered at all, reduced to immediate factors, such as ‘‘lifestyle,’’ for which the individual can be held responsible.

Treatment is generally viewed as technical intervention in an essentially mechanical problem. This technical orientation is learned in medical education, which begins with the study of the structure and function of the body and then proceeds to the examination of selected malfunctioning bodies (McKeown 1971). Doctors are taught to view patients as a ‘‘case,’’ the ‘‘mere physical situs of warring bodies and antibodies’’ (Worsley 1982:321). The clinician’s job is usually taught as an objective process of ‘‘decoding’’ the patient’s complaint—a process of converting observed evidence into named disease entities and implementing technical treatments based exclusively on causal biological processes (Feinstein 1973).

Though the practice of biomedicine today is very much influenced by this mechanical model of disease, its limitations are coming to be recognized, to some extent through the criticism of patients and other laymen but also through the increasing awareness of practitioners themselves that the model is inapplicable to chronic ailments, treatment of the elderly, and psychosomatic sicknesses. During biomedical training some medical schools (for example, Case Western Reserve and McGill) now try to raise students’ awareness of social and cultural aspects of sickness.
These assumptions of the biomedical orientation toward human sickness are by no means universal. Other medical systems, also bearing the imprints of the cultures in which they are embedded, contrast with biomedicine in fundamental ways. Western mind-body dualism, for example, can be compared with the Chinese *yin-yang* concept, which holds that elements of opposing phenomena—rather than being separate and distinct (like mind and body)—each bear within them the characteristics of the opposite. The body in this system is composed of *yin* and *yang*, as is the rest of the universe. Our biomedical discourse, which internalizes disease in the individual, contrasts with a widespread “externalizing” discourse, in which the body is almost disregarded and attention is centered instead on the social and symbolic aspects of sickness (Lewis 1975; Young 1982). Indeed, the biomedical emphasis on physical etiological agents in explaining and treating sickness seems questionable to those who explain suffering in ways that assign a minor and peripheral role to the physical realm.

Obvious differences in thinking about the nature of sickness permit us, as participants in the biomedical worldview, to see non-Western beliefs as “superstitious” or socially based and certainly nonobjective. Yet we hesitate to draw the same conclusions about our own beliefs, in large part because of the assumption that biomedicine is free from the influence of symbol and value (Comaroff 1982) and is therefore “objective.” This self-definition of biomedicine ironically precludes consideration of those of its aspects that would allow an objective evaluation of its scope and weaknesses. As products of positivist influence, science and medicine by their own conditions of objectivity are freed from scrutiny and criticism from other domains of knowledge.

Over the past few decades, however, it has been argued that the privileged epistemological position of science rests on social consent rather than intrinsic validity. Kuhn (1962), a major proponent of the post-empiricist philosophy of science, argues that contrary to the logical positivists’ view science is not a structure of objective knowledge, grounded in the certainty of sensory input and expressed in theory-independent observational language. Science does not grow by the induction and verification of theories. Instead, says Kuhn, what counts as knowledge is institutionally defined, and major changes in orientation are effected by psychological and sociological factors (within scientific institutions), rather than by rigorous experimentation alone. Viewed this way, science is not primarily objectively grounded, and the form of any current paradigm is taken from wide social values, institutions, and beliefs (see also Barnes 1977; Foucault 1966; Woolgar 1976).

If medicine claims its objectivity and freedom from social influence by its association with science, it is thus calling on a weak ally. For, like Kuhn’s science, what counts as the objects of medical scrutiny, what its theories include and exclude, and how it is practiced are inextricably integrated with wider values, interests, and worldviews. The biomedical orientation, then, is part of a larger worldview. Despite explicit claims of objectivity and freedom from social influence, the reality of biomedicine is actually a complex web of socially embedded theory and practice.

**Systems of Thought and Systems of Practice**

Health care projects in the developing world are often based on false assumptions about biomedicine both as a theoretical system and as a social system.
I will discuss two such assumptions and their consequences for health development. The first is the belief that orthodox biomedical knowledge is widely shared and similarly interpreted by all, or at least most, members of Western society. The second—derived from the implicit acceptance of biomedicine’s objectivity, as discussed above—is that the technical core of biomedicine and the social system of institutionalized roles and organizations in which biomedicine is practiced in the West are intrinsically and objectively related. It will be argued that basing health projects in the Third World on these assumptions has limited the effectiveness and use of available and potentially efficacious biomedical technology.

By conceiving that the biomedical and medical delivery systems exist and have a degree of mutual coherence, Western social scientists and health planners may well be reifying an artifact of our own social organization and thought. Since Western institutional forms, so far as they actually exist as discrete entities, cannot be assumed to have parallels in other cultures, we cannot assume the existence of a “medical system” with a distinct domain of institutions and meanings wherever we go in the world (Comaroff 1983). In contrast to biomedicine’s predominantly technical, instrumental orientation and explicit denial of its embeddedness in a larger cultural-social milieu, the healing enterprise in other cultures is often explicitly integrated into an all-pervasive sociocultural system. Although the physical aspects of sicknesses may be recognized, these are seen as just one part of a wider condition needing treatment. Lewis (1975), for example, reports that the Gnaou of New Guinea have no separate domain of knowledge and practice concerned with the understanding and treatment of physical sickness; sickness in general provokes an examination of social relationships either in lieu of or in conjunction with treatment of the physical state of the patient. For the Azande of Africa the perception of sickness is bound up with ideas about witchcraft and social misconduct, divination, and propitiation (Evans-Pritchard 1937). From these examples it can be seen that many diverse things are associated with healing in different cultures. Accordingly, the existence of a discrete medical institution with a corresponding narrow sphere of action cannot be assumed.

As stated above, health planners often implicitly assume that the Third World people they aim to help have an understanding of the biomedical system of knowledge. Yet, it is not even clear who in the West shares in this system. There exists an orthodox body of current medical knowledge that is presented in accredited medical schools. Although medical professionals share an orientation, and some common specific knowledge, it is doubtful that most physicians practice with the current orthodox system in mind. Upon graduating from medical school, most students have not mastered this body of knowledge. Three years later, because of specialization and the constant production of new medical knowledge, they are already out of touch with the most recent developments in specialties other than their own (Lock 1982:267). It is also doubtful that the lay population or the average patient shares the biomedical orientation to any significant degree. For the layperson, “medical” knowledge is derived from numerous sources besides biomedicine, folk beliefs from a variety of traditions (see, e.g., Helman 1978; Snow 1978), heterodox medicine (such as homeopathy), and reflected-upon personal experience all exert a strong influence. That the Western layperson responds to illness with only biomedical ideas in mind is a myth; in practice we are pluralistic.
Despite this social distribution of biomedical orientation and knowledge in the West, it seems that a belief that patients share the physician’s viewpoint has been carried into the Third World. It has been shown in the West that inadequate communication between physicians and patients who do not share a common background and mutual expectations directly contributes to low rates of patient compliance (Stimson 1974; Zola 1981). Such problems are greatly magnified when Western-trained physicians practice in the Third World with patients who do not understand biomedicine and may operate with a plethora of other theoretical systems and expectations. Non-biomedical versus biomedical interpretations and classifications of illness have proved to be a major cause of miscommunication in Tunisia (Creyghton 1977) and India (Djurfeldt and Lindberg 1975), for example. Sometimes differences in assumptive worlds are so great as to preclude the patient’s even formulating questions in the biomedical idiom (Boesch 1974). In short, people in the Third World cannot be assumed to seek health care with an orthodox biomedical model as their guide. Furthermore, knowledge of underlying theoretical systems cannot be assumed in interaction and treatment. Health development planning based on these assumptions will have only limited success.

Biomedicine as an institution—a clustering of social relations—can be clearly delineated in Western nations. It is through this institution that what I call the technical core of biomedicine is implemented. Like other Western institutions (political, legal, etc.), biomedicine consists of hierarchical, bureaucratic organizations. A variety of practitioners (including orderlies, nurses, pharmacists, doctors), as well as administrators and actual patients, all have clearly defined and regulated positions. Above all, most medical organizations have the specialized function of treating individual patients through biomedically accepted procedures.

The existence of the institution of biomedicine is of course no myth. However, some points must be noted about the way in which it functions. First, in general bureaucracies are not the efficient machines Weber had in mind (Blau 1967; Crozier 1964; Weber 1958[1922]). Accordingly, the hierarchies of hospitals and government health departments may often actually impede the provision of medical care. Second, much of the practice of medicine is dictated by broad cultural expectations and beliefs, rather than the requirements of the technical practice of medicine (Hahn and Gaines 1985). Third, despite the existence of an orthodox medical system, patients are pluralistic in the treatment of sickness. Assuming that an individual controls his own therapy (although in fact family and friends may), from the time the potential sickness has been recognized the patient will follow a treatment path that often includes therapy outside the biomedical institution. Home remedies, “common sense,” and alternative medicine may all be used with or without the concurrent use of the orthodox system (Kronenfeld and Wasner 1982; Riley 1980). In short, the technical core of biomedicine is not intrinsically related to the social institution by means of which it is implemented.

The problems that arise when the social relations of biomedicine, as practiced in the West, are introduced along with its technical core can best be understood in the context of a description of a few common characteristics of sickness behavior in other parts of the world. The treatment of sickness in the developing world, for example, involves a pattern of healer consultation that is usually explicitly pluralistic, with many types of healers considered to be legitimate. As
discussed earlier, externalizing discourses of sickness, with referents outside the purely physical realm, are common in the developing world, and medical pluralism is often a means of dealing with all aspects of sickness. During a sickness episode a patient, either of her own volition or under the direction of a ‘‘therapy managing group’’ (Janzen 1978), will often consult all available systems of therapy for a single affliction. Biomedicine becomes just one stopping place in the round of treatment, seen pragmatically as useful for treating symptoms (Gould 1965), while the shaman treats the perceived social or spiritual cause of the sickness (Gonzalez 1966). Medical pluralism is a world-wide phenomenon documented, for example, in Tanzania (Feierman 1981), India (Colson 1971), Ecuador (Pederson and Coloma 1983), and Zaire (Janzen 1978). There is no pathway along which patients are channeled. The varieties of healers are not generally organized or controlled by official bodies, and healing institutions often converge with other social realms, such as the political or religious. Whereas in the West this convergence is generally denied, elsewhere the interrelatedness of what we assume to be separate domains is an intrinsic part of health care practice.

In contrast to the dyadic private interaction between patient and healer in Western medical practice, a traditional healer in the Third World often deals publicly with an entire ‘‘therapy managing group,’’ as found by Janzen in Zaire (1978) and Feierman in Tanzania (1981). Sometimes the patient is even ignored in treatment, as Lewis observed in New Guinea (Lewis 1975). The traditional healer’s authority might be derived from the religious world, and the approach to the patient is expected to be clairvoyant rather than inquiring (Marriott 1955).

In Western society the biomedical practitioner is preferably unrelated to the patient, and treatment is a transaction in some ways like other services offered and purchased in the market economy. In contrast, non-Western healers are often (though not always) integrated members of the community in which they work. Treatment often takes place within a web of interpersonal obligations and trust (Marriott 1955; Gould 1965).

A considerable body of literature indicates that the presentation of the technical core of biomedicine with the social accoutrements of the West has impeded its reception in the Third World. Furthermore, such practice has delayed consideration of how biomedical technology can be presented in a socially more acceptable manner. Gould (1965), for example, describes the problems that arose from the construction of Western-style clinics in India. He found that although people sometimes wanted biomedicine, their previous experience with the institutional structures within which it was presented to them was sufficiently negative that they avoided further visits. On the interpersonal level, problems have also arisen from incompatible role expectations for healers: Marriott (1955) contrasts villagers’ perceptions of traditional healers as active and trusted members of a lineage or community, sometimes with religious authority, with perceptions of doctors as distrusted outsiders of low status, of dubious motivation and credibility (see also Boesch 1974; Gould 1965). (Of course, the reverse situation can exist; doctors can be assigned high status and some indigenous healers may be, or are thought to be, lacking in integrity.)

Though today traditional healers and local people are frequently recruited as purveyors of biomedicine, even elaborately planned and expensive programs continue to be based on a very limited consideration of social role expectations. Ne-
pal’s auxiliary nurse-midwife program illustrates this problem well (Justice 1981). The program trains young Hindu women from urban areas to work in villages, where their primary duties are to assist in childbirth and educate villagers in hygiene and contraception. The program has had very limited success, and most of the women quickly return to Kathmandu. There are two major reasons for this failure. First, the role of birth assistant, based on Western ideas about the objective nature of medical practice, is incongruent with local expectations of the characteristics of a birth attendant. Traditionally, a young, inexperienced, childless woman does not even witness a birth, let alone advise or try to supplant the authority of older women. The role of the nurse-midwife thus requires culturally inappropriate behavior for the young unmarried Hindu women who are training for the job. Second, living alone in rural communities leaves these women sexually vulnerable and diminishes their chances of a good marriage.

In summary, two assumptions about biomedicine have limited the effectiveness of health development projects in the Third World. The belief that patients and doctors in the West share common knowledge that they express in a mutually comprehensible idiom has been extended to include potential patients in the Third World, with negative consequences. Second, the social institutions by which the techniques of biomedicine are applied have been treated by health planners as essential to its functioning: the assumed objectivity of the technical has lent an aura of objectivity to the social. The result of using these assumptions to guide health development in the Third World has been reduction in the benefits obtained from the available resources.

**The Assumed Rationalities of Sickness Behavior**

Discussion of behavior during the treatment of sickness generally assumes an ideal, rational actor, whom I call “health man.” Along with his counterparts “political man,” who operates to maximize his political influence, and “economic man,” who seeks to gain in the marketplace, health man is conceived as similarly single-minded. He is motivated in the pursuit of health, has a clear idea of what constitutes health, and promptly consults orthodox practitioners and follows their orders when he becomes sick. The biomedical institution is built on the assumption that the patient is rational in Weber’s means-end technical sense.

The health man assumption does not closely reflect actual behavior, and incorporating this image into any health planning is problematic. I shall discuss the “rationality” of health man first by considering whether or not such behavior is likely to exist, given the nature of action in general, and second by indicating that the Weberian concept of rationality, though prevalent in our thinking, is culture-bound and excludes consideration of nontechnical action as rational. To the extent that health seekers in the Third World or elsewhere pursue other rational interests beyond the technical in their approach to the treatment of sickness, biomedicine will never completely supplant other approaches to curing. Thus, to be realistic, health planners must expand the model of health man beyond that of the rational technical actor.

Health man, the rational actor, does not exist even among the most consistent users of orthodox biomedicine, the middle and upper classes of the industrial West. Individual people are not consistently rational, and there is no consistency
of rationality among members of a population. As noted before, biomedical knowledge is not widely shared; people act in accord with many ideas about health care. Even a fair degree of knowledge and belief in the efficacy of biomedicine does not ensure compliance. Many factors, such as emotion, taste, and habit, can intervene between knowledge and action (Stoner 1985; Young 1981).

I suggest that even if members of a population were always to follow the advice of biomedical practitioners, this would not necessarily stem from universal rationality of thought processes or even rational minds. I suspect that many people are vaccinated against smallpox, cholera, and rabies because of traditional adherence to norms or law, rather than because of their own knowledge of viruses or immunology. Yet according to the model of health man, consciousness of reasons and understanding of process are important in assigning rationality to actions. In short, even Western users of biomedical services do not always conform to the health man model: people are just not consistent in behavior or theoretically knowledgeable.

Most people’s actions are nonrational, however, only in terms of Weber’s very narrow definition of rationality, which expressed the sentiment of his and our age that the most technically efficient action is the most rational. Weber argues that with the development of means-end rationality, particularly in the marketplace and in science, other forms of rationality (such as ethics, esthetics) greatly declined and came to be viewed as logically inferior bases of knowledge. In opposition to this claim, Habermas (1971) believes that other forms of rationality have persisted and speaks of them as “quasi-transcendental human interests.” These interests are primarily communicative (including all social interactions) and emancipatory (although Habermas uses this term with a political meaning, I shall apply it as well to spiritual concerns).1

Though the ontological status of these interests may be questionable, Habermas has a sound point: we have many goals. These may be pursued simultaneously or separately. And these goals are as rational as technical goals. In this light, the medical pluralism described earlier may be seen as the result of the rational processes of many individuals, all seeking a full understanding of their sickness experience as it relates to their many diverse interests. It is, then, perfectly rational for an Indian villager to visit a series of curers, especially if beliefs about sickness involve both social relations and spiritual matters. It is reasonable to seek help for different aspects of a sickness and thereby pursue different interests. We in the West often seek technical help for sickness, but we, too, want a social interpretation of our condition. We want to know what it means and what its social repercussions may be. In consulting medical professionals, our friends, employers, alternative curers, or others about our ills, we pursue multiple goals, only one of which may be to attain technical help.

Both medical anthropologists and health planners often assume the health man or “rational man” model of the human subject as the basis of their research or planning. If health man is an inaccurate model of health-seeking behavior, then a health program that assumes the health man model is essentially misguided and may well be an inefficient use of resources. For the upper and middle classes of the industrial West, who have more completely cut off the experience and definition of sickness from social conditions and who to some extent go health seeking with technical goals in mind—consequently a category for whom the health man
model applies to some degree—medical practice built around the health man assumption is likely to (and does) have some success. However, when people do not share the biomedical worldview, do not even think they are characterized by health-man rationality, and explicitly pursue more than one interest when seeking health, they are unlikely to make exclusive use of biomedicine, and traditional healers will continue to thrive. Under such circumstances planners must develop more sophisticated models for health care systems.

The Effectiveness of Biomedicine: Technology or Politics?

The appropriate role for biomedicine in the Third World is to provide effective services for treating physical aspects of sickness. Providing ineffective services both squanders resources and erodes faith in biomedicine. Given the present environmental, economic, and political conditions of the Third World, the effectiveness of these services can only be very limited for the majority of the population.

Biomedicine is widely believed to be effective in the cure of sickness. A corollary of this is the belief that if adequate facilities could be provided in the Third World, and "native" irrationalities and cultural obstacles could be overcome, the health problems of the people in the Third World would largely be eliminated (see, e.g., Grant 1987). However, this belief is not true, because the effectiveness of biomedicine is limited in three ways. First, many conditions within the accepted defining properties of biomedicine (i.e., physical diseases) cannot be treated effectively. Second, by concentrating on the purely physical, biomedicine simply cannot treat the social aspects of sickness (i.e., illness). Third, cures can only be achieved under favorable environmental and political conditions: if these are not present, biomedicine will be ineffective. Recognition of these limitations by health planners would allow for greater investment of resources in those aspects of sickness for which biomedicine is effective.

The Scope of Biomedical Effectiveness

Certain acute conditions, such as appendicitis, can be cured, antibiotics and vaccinations generally work, and symptoms can often be relieved. However, biomedicine cannot deal effectively with many complaints: cancer, diseases of the musculoskeletal system (rheumatism, arthritis), and other chronic conditions, as well as the common cold and many other viral diseases. All of these ailments generally run their course unhampered by the physician's efforts (Comaroff 1982; McKeown 1979).

Furthermore, many established procedures of biomedicine that are believed to be effective and are routinely applied have never been tested (Cochrane 1972). Indeed, some that have been tested have been found to be ineffective. For example, Mather's (1971) assessment in Bristol, England, of hospital versus home treatment for acute ischaemic heart disease indicated that there is often no medical gain from admission of patients to the hospital. Similarly, Knatterud et al. (1971) carried out a multicenter trial that tested the value of oral antidiabetic therapy, insulin, and diet in the treatment of mature asymptomatic diabetes and found that standard treatments were disadvantageous for some cases: patients administered phenformin (a standard therapy) had higher mortality rates than patients whose
treatment consisted of insulin and diet control. Yet many untested treatments persist. Many are institutionalized and even legally required to satisfy the "average competent physician" requirement. Despite appearances and dogma, biomedicine may well be of limited effectiveness, even on its home ground.

The control of infectious diseases is often held up as one of the resounding successes of biomedicine. However, the actual contribution of medical technology to the control of these diseases both recently and in the past appears to be small. McKeown (1971) argues that during the past 150 years the limitation of family size, the increase in food supplies, and a more hygienic environment were far more important than specific preventive measures in contributing to health improvements in England and Wales. Trends in mortality show that the decrease from communicable diseases was correlated with improved nutrition and the introduction of hygienic measures (effective sewage disposal, pure drinking water) and not with the later identification of causal organisms. McKeown concludes that no specific medical measure can be shown to have influenced mortality from communicable diseases, except for smallpox vaccination and a few other treatments. Here again, by decontextualizing medicine and viewing sickness purely in terms of a condition in an individual body, the wider social determinants of health have become obscured, and the results of political and economic change have been interpreted as a triumph of medical technology.

Research on patterns of healer usage indicate that many people in the Third World have a realistic perception of the limitations and effectiveness of biomedicine. The differential choice of traditional and biomedical practitioners for chronic and acute conditions respectively is a commonly reported pattern (Gould 1965; Kleinman 1980). With chronic conditions for which biomedicine can do little but provide symptomatic relief, patients go to traditional healers. Illnesses with a significant social component are also taken elsewhere, because doctors are (accurately) seen as ill-equipped to deal with them (Erasmus 1952; Lieban 1967).

This reasonably accurate assessment of biomedical effectiveness is perhaps the best one can hope for. For, given the conditions of life of many people in the Third World, biomedical treatments that are generally effective in the West are often not effective in those circumstances. By definition the Third World is poor. Malnutrition and lack of even rudimentary hygienic measures are the norm. In such situations resistance to disease is low, and medications, such as antibiotics, are often only temporarily effective. For example, they may be administered to a child suffering from a gastrointestinal infection, who recovers only to return to unsanitary surroundings and becomes reinfected and debilitated a few days later. Similarly, if a malnourished patient takes medication for tuberculosis, she may not show any signs of recovery. Djurfeldt and Lindberg (1975) show that more than 70% of patients reporting to a clinic in south India had conditions directly attributable to their poverty. World-wide nutritional deficiencies and other aspects of poverty are the primary cause of death in children less than five years of age (Puffer and Serrano 1973). In general, an individual's health status is determined more by his or her socioeconomic situation than by health services (Heggenhougen 1984).

This perception of the limited effectiveness of biomedicine is further compounded by the actual standard of services provided. Often clinics are poorly equipped (Djurfeldt and Lindberg 1975), and minimal treatment is given (Banerji
1979). As a result, a condition may persist, even though it has been treated. The failure of treatment in conditions of poverty undermines faith in cosmopolitan medicine’s ability to cure. Health planners must recognize the limitations of biomedical care in Third World situations and plan to provide only what is effective in the given circumstances. Contrary practice wastes resources and is probably counterproductive in the long run, as a general lack of faith in biomedicine may lead to rejection of even its effective aspects.

Viewed in this light, health becomes not a biomedical matter but a matter of both the division of resources (food) and the provision of adequate sanitation facilities, including a clean water supply. It is thus dependent ultimately on a political will aimed toward developing economic and environmental conditions that promote physical well-being (Marchione 1984). However, even with political backing, the best of intentions can be misdirected by inefficient bureaucracies (Justice 1981). Thus, once again we see that the prevalence and distribution of sickness is heavily dependent on wider social patterns.

Conclusion

‘‘Medical’’ knowledge and practice are created by, and help to recreate, the cultural context in which they are embedded. The biomedical domain concerns primarily physical aspects of sickness. This emphasis in both theory and practice reflects the social and ideological context in which biomedicine emerged. Decisions about how to use the technical core of biomedicine in other cultures are influenced by nontechnical, cultural beliefs about the ‘‘medical’’ domain. Like most beliefs, however, their cultural origins are not always apparent; moreover, the obscurity is compounded in the case of biomedical beliefs, because they are explicitly believed to be asocial.

Many orthodox beliefs about our Western orientation toward sickness are myths: the model of rational health man, the belief in a widespread awareness of biomedical knowledge, the belief that there is just one medical system, and the belief in the efficacy and effectiveness of biomedicine. These beliefs belie the great diversity in our beliefs and motives for action. They also ignore the social determinants of sickness. Biomedicine may flourish in the West in large part because patients share these myths and have faith in them. In the Third World this is not the case. Not only are the myths not shared, but they are also less applicable to the realities of disease and medical care delivery. Biomedicine with its strengths and weaknesses can be seen more realistically in light of the consequences of its introduction into non-Western social contexts. The emerging picture of its limitations and possibilities should allow for more successful planning of health projects.

Throughout this essay I have argued that there is a core of biomedicine that can be used effectively in the Third World. The maximization of possible benefits requires a willingness to discard unnecessary social baggage in favor of more culturally appropriate practices. Many health planners are aware of this necessity, and many international health organizations (e.g., WHO, UNICEF) commission research to assess the cultural appropriateness of proposed projects. It is uncertain, however, how much of this information is actually used in practice (Foster 1987:711).
I suggest that if health development efforts are going to improve the health status of people in the Third World significantly, planners should, besides promoting consideration of local-level obstacles to the use of biomedical techniques, also promote consideration of the wider environmental and political context of health. For many people in the Third World, the conditions necessary for sound physical health do not exist. This is well illustrated by the high rates of infant mortality (Puffer and Serrano 1973). Foreign aid is given to the governments of Third World countries to help create the conditions for improved health—for example, to construct water supply systems or improve crop yields. But the effectiveness of these programs depends to a large degree on the willingness of all involved—from donor agencies and their personnel, to governments, local-level politicians, and administrators (Bossert and Parker 1984; Justice 1986; Marchione 1984; Seddon 1987)—to confront the problems raised by the political context of development.

Confronting the problems of the cultural appropriateness of health development projects is important, but it has a negative side. Locating the problems of health development in the beliefs and lifeways of the to-be-developed populations draws attention away from the effects of physical and political environments on the distribution of sickness. Focusing exclusively on local-level obstacles to health development may impede the more far-reaching changes necessary for health development.

NOTES

Editor’s Note: Ms. Hepburn’s paper was awarded the Rivers Prize at the 1986 Annual Meeting of the Society for Medical Anthropology, Philadelphia. Delay in publication was due in part to her absence from the country until April 1987.

This essay was written while the author was a student at McGill University under a Social Sciences and Humanities Research Council of Canada scholarship. Correspondence may be sent to the author at the Department of Anthropology, McGraw Hall, Cornell University, Ithaca, NY 14853.

Habermas’s categorization reflects the secular, political-economic orientation of most current Western non-theological academic writing. I expand his category of emancipatory interests to include spiritual (“religious”) cosmological concerns, as these are common motivations, both throughout the world and in the past, for those engaged in sickness behavior.

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