

# **Applied Anthropology**

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## **Domains of Application**

**Edited by Satish Kedia  
and John van Willigen**

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## 5 Applied Anthropology and Health and Medicine

Linda M. Whiteford and Linda A. Bennett

### Introduction

Would you like to reduce the spread of HIV/AIDS? Help improve communication between practitioners and their patients? Unravel the complexities of alcohol or drug abuse? Assist local communities in fighting a cholera epidemic? These are all things that applied medical anthropologists do. Applied medical anthropologists do many more things as well: they teach in medical schools and in departments of anthropology, consult with international health organizations, and work with local governments and non-governmental organizations. In this chapter, we will share some of the excitement about applied medical anthropology that we experience and describe its historical roots and contemporary applications.

What is applied medical anthropology, and where does it fit in the field of anthropology as a whole? Medical anthropology is a relatively recent major addition to the field of anthropology, gaining momentum in the United States in the 1960s and 1970s, with critical pioneering studies a decade earlier. Some, however, trace the conceptual roots of applied medical anthropology to British colonial experiences and the use of social observers in India, Africa, and Melanesia. This chapter tells a story of the early development of the field, illustrates some of its current applications, and imagines some future directions its practitioners might take. Case studies from the authors' experiences are used to exemplify major concepts and applications of applied medical anthropology to the domains of health and medicine.

Medical anthropologists are often trained in the four-field approach of anthropology, comprised of knowledge from cultural, biological, linguistic, and archaeological studies. This provides medical anthropology with unusual breadth and depth, allowing medical anthropologists to build on findings from forensic biology, ethnopaleontology, historical reconstructions of disease, and the linguistic and cultural patterns employed in the social construction and understanding of disease.

In general, medical anthropology seeks to understand the interplay between culture and biology, particularly as that interplay is expressed in health and illness and in their associated belief and practice systems. By system we mean the conceptual framework that links variables together following particular and specific rules. As Joralemon notes (1999, 13), medical anthropology is not unique in attempting to understand the interplay between culture/biology and humans/disease. However, it can be differentiated from the other medical social sciences by two factors: first, by its wider geographic range and time spread because it builds on archaeological and paleontological research, and, second, by its explicit focus on the cultural and biological determinants of disease. We can think about the ways in which cultural rules about disease recognition and treatment intersect with germ pathology of disease; that intersection is what medical anthropologists refer to as the biocultural synthesis.

The importance of conceptualizing and analyzing this biocultural synthesis had led some medical anthropologists to acquire special training. While they are being trained in anthropology, often specializing in either sociocultural or biological anthropology, they often acquire additional expertise in allied fields, such as public health, nutrition, counseling, nursing, or medicine. Some graduate programs in anthropology offer specialized courses in medical as well as applied anthropology. Others now even offer students the chance to acquire two degrees simultaneously: one in applied anthropology, the other in public health. This dual training, combined with an in-depth education in anthropology, makes medical anthropology an immensely varied field, with practitioners studying such subjects as prenatal testing, genetic counseling, immigration laws and health policy, aging in a cross-cultural perspective, and even the forensic analyses of ethnic cleansing.

For this chapter, we conceptualize health as a state of being, an equilibrium of sorts in which one's physiological, emotional, and mental functions work in harmony. We also think of medicine as a cultural system of knowledge and practice designed to promote and maintain that harmony. Using these definitions of health and medicine as complex, interrelated, and constructed systems, we can see how necessary it is to employ what is referred to as a biocultural perspective or synthesis in medical anthropology. A bio-

cultural perspective is one that integrates knowledge of biological systems with knowledge of cultural systems. That perspective acknowledges the co-primacy and power of both biology and culture and recognizes that their interplay forms an integral part of biocultural analysis.

Current anthropological interests in health and medicine continue a history of analysis of the complex interactions of physical/ideational and cultural/biological systems, which has become known as medical anthropology. As if that were not complicated enough, most medical anthropologists are also applied anthropologists. Some might argue, as we do, that *all* medical anthropology is applied anthropology. That is, all research in medical anthropology has direct or indirect applications to human health and medicine.

Medical anthropologists now teach and conduct research in medical schools, in schools of nursing and public health, and in more traditional settings such as anthropology departments. They also work in state departments of health and national health agencies such as the Centers for Disease Control and Prevention (CDC), for international health agencies like the World Health Organization (WHO) and the U.S. Agency for International Development (USAID), and for nongovernmental organizations (NGOs) such as the Red Cross, to name a few. It is clear that anthropologists make contributions in numerous arenas in an effort to better our understanding of health and medicine. Knowledge that is generated by medical anthropologists, be they teachers, researchers, consultants, or practitioners, has applied implications and often results in changes in policies, programs, or practices. That is why we think that all medical anthropology is applied, whether in universities, international agencies, or local consulting.

Applied medical anthropologists come from a variety of theoretical, epistemological, and methodological orientations. That is, although they all may be interested in some aspect of the dynamic interplay between cultural beliefs, practices, and physical expressions, they approach the design of their research or analysis from a number of distinct bases. In this chapter we will discuss some of these perspectives. Regardless of approach, whether political/economic, interpretive, ecological, critical, or hermeneutic, applied medical anthropologists tend to share a commitment to the holistic perspective of anthropology, that is, a perspective that takes into account the larger nonbiological context. Such an approach takes into account multiple relevant factors rather than narrowing in on a single aspect. In medical anthropology, we draw heavily upon the biological and cultural facets of the human experience of health and illness. An ability to consider the cultural context in which actions occur and a capacity to bridge what is too often thought of as a conceptual chasm between culture and biology make the applications of a medical anthropology perspective of great utility not only

in anthropology but also in allied fields such as medicine, social work, nursing, addictions research, and public health policy and practice.

## Historical Overview and Current Theoretical Approaches

In all cultures, humans create systems of thinking and behavior to protect themselves from future possibilities of becoming sick, having bad luck, and suffering ill fortune. All people have beliefs and practices designed either to keep them healthy or to make them healthy if they fall ill. Have you ever taken vitamin C when you thought you were getting sick? Have you ever had a good luck charm, worn a lucky shirt, or saved a four-leaf clover? People in other cultures do similar things. In all societies people develop cultural systems designed to maintain health or restore individuals to healthy states. These cultural systems of beliefs and practices vary widely, and they may include patterns of dietary constraints, behavioral admonitions, recourse to spiritual or specialist guidance, and self-diagnosis and treatment. Going to a doctor, a midwife, a mental health counselor, a spiritualist, or a pastor are examples of relying upon specialists to help maintain or return to health. Neighbors, mothers, sisters, grandmothers, and other friends and family members also form part of the system of information and communication we use.

In the early part of the twentieth century, European colonial expansion into the Pacific islands, India, and Africa brought colonial administrators into contact with cultures radically different from their own. The Dutch, French, and British governments found themselves trying to control people whose cultural beliefs and practices were unintelligible to them. They turned to people they called social observers, whose job it was to observe and understand local rules, regulations, and cultures. In turn, these social observers were to help the colonial administrators understand and rule the colonies. Some of the social observers were members of the foreign office; others were physicians or educators; and many became what today we would call anthropologists. Anthropologists and social observers like E. E. Evans-Pritchard and W. H. R. Rivers were introduced firsthand to non-Western cultures in places like Melanesia, the Nuer, and the Azande through their government's activities in those areas. They became intrigued by how social relations and cosmological beliefs were tightly intertwined. They learned how people defined who was a member of their family and how those kin relations were shaped not by biology but by cosmology (religious beliefs). They noticed and described how systems of religion and social organization reflected and supported those kinship systems of beliefs and practices.

One result of the colonial expansion was the development of a rich body of literature describing beliefs and practices of non-Western peoples. Some of those early social observers, like Evans-Pritchard and Rivers, sought to conceptually link their analyses of non-Western systems of beliefs and practices used in magic and religion to those Western practices used to try to keep people safe and in good health. Magic, religion, and medicine, they saw, were all systems of thought based on assumptions with sometimes limited physical evidence. Rivers, who was a physician as well a social observer, found his experience with Melanesian practices to be directly applicable to the situation of the shell-shocked British soldiers. As a result of his field observations, he challenged the accepted wisdom of the time in Britain about how to "treat" soldiers thought to be suffering from shell shock.

The accepted medical practice during World War I (and in previous wars) was to treat soldiers who suffered from unseen or psychological wounds by forcing them back into the field of war immediately or by labeling them as cowards. Soldiers were not encouraged to speak about what they saw or their fears. Rivers, however, believed that their minds needed healing and that the wounded men were not necessarily cowards trying to escape the front lines. His decision to give soldiers time to recover from what they had seen and experienced and a chance to speak about the experience was almost prescient of what has come to be called post-traumatic stress disorder (PTSD) some 80 years later.

For many, medical anthropology is traced to a much later start—in the 1950s and 1960s—with two seminal books: Benjamin Paul's edited collection, *Health, Culture, and Community: Case Studies of Public Reaction to Health Programs* (1955) and Rene Dubos's *Man Adapting* (1965). Paul's book is a classic in both applied and medical anthropology. He presented a cultural "systems model" that embedded responses to public health medicine within the contrasting set of traditions and expectations of the clients' culture and community. His case studies are exemplars of cultural systems in conflict. The chapters are drawn from Paul's consulting work at Many Farms, Arizona, where the U.S. Public Health Service provided clinical health care to the Navajos. The clinic was new and well staffed, and the Public Health Service was particularly concerned when few patients attended. Diabetes, tuberculosis, alcoholism, and many other illnesses associated with poverty and isolation were common on the reservations, yet few people attended the clinic. Paul and several other anthropologists were asked to observe the clinic and help the Public Health Service administrators understand why the clinic was so underutilized.

The anthropologists found that a series of barriers existed. Cultural differences in expected behaviors and anticipated outcomes, in combination with

contrasting perceptions of modesty, manners, and time, created an almost insurmountable gulf between the practitioners and the clients they were to serve. The cultural expectations of the public health practitioners were based on their training with non-Navajo groups, and this led the physicians and nurses to expect their patients to come to the clinic at the appointed time, to look the public health official in the eye, and to declare a set of physical medical symptoms. The cultural expectations of the Navajos, on the other hand, were based on religious cycles related to weather, crops, and seasons in which time was fluid and based on complex rituals rather than on clocks and months. Fixed time appointments were not part of their lives. In addition, cultural norms of modesty prevented many Navajos from making direct eye contact and prescribed an unspoken set of rules concerning which relatives and nonrelatives could be spoken to. Navajo beliefs about illness causation were often at odds with those held by the public health doctors and nurses. The lack of shared understanding about personal presentation, time, who could be spoken to, and even whose names could be spoken caused serious communication problems. These problems were, in part, resolved when the anthropologists helped the clinic staff see that the problems stemmed from cultural differences rather than a lack of need or a lack of respect. Understanding differences about when and how things should be done, what could make one sick, the range of ways to get better, and even how to talk about these things made it possible to design policies and practices that bridged the two cultural systems.

Paul's book was seminal for the development of the field because it clearly articulated the need to contextualize medical care as a cultural system that may or may not fit with other cultural systems. Until that time, little attention had been paid to the cultural biases of both practitioners and patients or to the fact that those biases were rooted in cultural systems. The Many Farms experience is classic because the models were so distinctive: the public health service practitioners were trained to emphasize efficiency, science, confidence, punctuality, and individuality, whereas the Navajo clients' model of the world emphasized humility, modesty, respect, spirituality, and community. In retrospect, we can see that a clash between these models of the world is avoidable, and now more attention is paid to patient-practitioner interactions, their communication patterns, and their cultural systems of belief and practice.

Whereas Ben Paul's model laid the groundwork for a systems approach to applied medical anthropology in the United States, Rene Dubos's contribution to the evolving specialization was his book *Man Adapting* (1965). Along with Dubos's earlier book *The Mirage of Health* (1959), it provided the basis for articulating the biocultural and ecological perspectives. Dubos sug-

gested that, although there may be negative aspects to human adaptability, it was that very ability to be adaptive that allowed humans to survive in divergent and constantly changing environments. In the 1960s and 1970s, the key terms denoting the biocultural perspective were adaptation and ecological and featured evolutionary themes (Janzen 2001, 32). Adaptation, according to McElroy and Townsend, involved "changes, modifications, and variations enabling a person or group to survive in a given environment" (2004, 14). They went on to note that humans "adapt through a variety of biological mechanisms and behavioral strategies" (14). With an ecological perspective, the focus is on the interrelationships between the various components seen to constitute an ecosystem: populations and their environment (37). This perspective continues to capture the attention of medical anthropologists by providing a useful and practical method to connect humans to their environment through both biology and behavior.

Charles Leslie also shaped the nascent field of medical anthropology in significant ways. Leslie's writings from 1960 to 2000 took the field to new horizons. Although his contributions are many, his book from 1976, *Asian Medical Systems: A Comparative Study*, was seminal because it introduced many medical anthropology students to the tremendous variation in medical systems throughout Asia and the rest of the world.

## Contemporary Applied Medical Anthropology

Contemporary applied medical anthropologists look at how people in different societies, as well as in their own, ritualize universal life stages: birth and death, childhood, and old age. Such life stages provide researchers a common biological experience that can be examined using the biocultural perspective. Birth, for instance, occurs biologically the same way among all humans but with immense variation in practice across cultures. The biology of birth does not vary. Babies are born in a limited number of ways: vaginally or by caesarian section (surgery). However, the cultural range of birth practices is exceptional. Some societies, the United States, for instance, encourage women to give birth in sterile, medically controlled rooms with men or women in gloves, masks, and gowns. However, among the Bariba of Benin, women are expected to give birth alone, often away from their homes and the prying eyes of family or friends (Sargent 1982). Still other societies welcome the presence of family members—children, fathers, mothers, and sisters—while the woman labors and gives birth. Why is there such cultural variation on a universal biological process? According to those who have studied the social context of the biocultural synthesis of birth, birthing rituals reflect the norms and needs of the society of which they are a part.

Brigitte Jordan's (1978, 1997) studies of women in four different cultures showed how the rules about who attends the birth and even the physical position of the laboring woman—whether she sits in a birthing chair, squats back on her heels on the floor, or lies on her back with her legs strapped onto a horizontal table—all depend on the cultural beliefs about life and death, gender relations, power and authority, and religion. Jordan's work opened up a whole area of research in applied medical anthropology and, equally importantly, provided women, their families, and their medical assistants with knowledge of alternative ways to situate the birth: with a midwife, at home, in a birthing room at a medical facility, with family or without them. For many women, this research transformed the birth experience into a more positive and emotionally significant moment in their lives.

Gender—another universal cultural category—also has provided an important focus for medical anthropology. Just as Jordan and others researched how birth is culturally situated, questions of how biocultural categories like gender shape medical experiences have stimulated anthropologists to ask why women are treated differently than men in, for instance, clinical settings in the United States. In the 1980s and 1990s, medical anthropologists sought to understand how the cultural biases toward a group become replicated in their medical treatments (Sargent and Brettell 1996, Rapp 1989, 2001; Ginsberg 1989). Others explored the consequences of cultural biases on the medical treatment of various ethnic and socioeconomic groups. Do African Americans receive the same quality of care in the United States as non-African Americans? Do the poor in Britain receive the same type of medical attention as the rich? Do immigrants in France receive the same quality of care as the native-born French? These are all examples of the kinds of issues that capture the attention of medical anthropologists as they apply their anthropological training in cultural analysis to medical systems.

Investigating the cultural underpinnings of beliefs and practices associated with various universal life stages provides important information that helps us understand both cultural variation and the reasons for the continuation of such cultural practices. The application of the results of medical anthropological studies such as those of Jordan or Sargent may be part of the original research design, or it may follow once the research has found a public audience.

The emergence and reemergence of communicable diseases is another area of contemporary research among applied medical anthropologists. The reemergence of dengue fever, the geographic spread of malaria, and the emergence of new diseases such as HIV/AIDS and SARS require the stereoscopic and biocultural approach that has become the hallmark of applied medical anthropology. Anthropologists have made significant contributions

to understanding the sociocultural basis of risky behaviors implicated in the spread of communicable diseases (Page and Trotter 1999). For instance, in an effort to reduce the spread of HIV/AIDS, researchers at the Hispanic Health Council in Hartford, Connecticut, studied the cultural rules that shaped patterns of HIV/AIDS transmission. They interviewed men and women who used sex for income or as barter. They interviewed homeless women and men, sex workers, and others to learn if there were alternatives to sex exchange or if the use of condoms was an option in reducing transmission (Romero-Daza, Weeks, and Singer 2003). Although gender and ethnicity were certainly categories considered in the research, the political variables that controlled access to resources, jobs options, and education were considered primary in their analysis.

## Theoretical Approaches

The example from the Hispanic Health Council demonstrates what is known in medical anthropology as a critical medical perspective. This approach focuses on class structure and access to resources and modes of production (Singer 1992; Baer 1989). It brings together many of the concerns held by those studying health and medicine by looking at economic patterns and their distribution as related to socially constructed categories such as gender, class, and ethnicity. That is, the economic underpinnings of cultural systems and how they affect health and health care became an explicit focus of research (Singer et al. 1998; Morsy 1996; Whiteford 1995). The political economy of health (Morsy 1996), or critical medical anthropology of health (Singer and Baer 1995), brings a more Marxist and political orientation to framing the research question. This framework pays explicit attention to differences in socioeconomic levels as they affect peoples' access to health care and economic resources. It focuses on the unequal distribution of wealth and power as they affect health outcomes.

This is one of the several perspectives currently employed in the analysis of health and medicine. In addition to the critical medical perspective, the three other most frequently encountered are the ecological/evolutionary approach, the interpretive approach to health, and the clinically applied approach. In addition, consensus and cultural modeling is sometimes considered a fifth approach. Each is associated with a central set of concepts that shape the research design, data analysis, and interpretation of findings.

The ecological/evolutionary approach emphasizes the biocultural synthesis between biological and environmental conditions (McElroy 1990; McElroy and Townsend 1989, 1996; Leatherman, Goodman, and Thomas 1993), employing the concept of adaptation as a key tool for analyzing the

interactions. In many ways, this approach is a direct descendent of the writings of Dubos and others in the early history of the subdiscipline. In contemporary medical anthropology, some biocultural research focuses on microevolutionary processes within the context of particular and changing environments. Studies of malaria and sickle cell anemia are good examples of the gains from such an approach (Frisancho 1981).

The interpretive approach, sometimes referred to as the constructivist approach, takes as key ideas that experiences of health and illness are culturally constructed and their interpretation may include the experiences of the sufferers themselves. Those experiences can only be understood by recourse to the cultural assumptions from which they emerge (Scheper-Hughes and Lock 1987; Kleinman, Das, and Lock 1997).

Any one of these approaches may be utilized in applied and clinical settings. Some anthropologists place clinical medical anthropology in a category separate from applied anthropology, just as others conceptualize epidemiology as a separate theoretical perspective, distinct from applied anthropology. We see each as a cluster of techniques used in the application of medical anthropological theories and practice. Epidemiology (the study of the determinants and distribution of disease) comprises concepts and methods that can usefully be employed in conjunction with anthropological theories and applied to medicine and health. Although medical anthropology is strengthened by attending to epidemiological data, epidemiology without the encompassing cultural context is quite limited and often results in misleading conclusions. In order to truly understand disease within its behavioral, cultural, social, political, economic, and environmental milieu, it is essential to look beyond epidemiological data.

Cultural models and consensus theory is also used in medical anthropology to investigate the relationship between peoples' cognitive models and health statuses (Weller and Romney 1988). Cultural models are frameworks designed to represent how people think about something in particular, for instance high blood pressure, diabetes, or other health problems (Dressler 1996a, 1996b). Consensus theory is based on the assumption that if a certain level of agreement is achieved about the model of disease causation (a consensus), then the constructed model is an accurate reflection of the cultural beliefs of the group. In the cultural model approach, data are collected as responses to questions posed to cultural representatives, rather than exclusively based upon observations of behavior.

In all these approaches, a concern with ethics and ethical conduct is central, and thus, ethical issues have come into mainstream applied medical anthropology discussions. Federally mandated Institutional Review Boards (IRBs) began in the 1970s to review research proposals in an attempt to pro-

tect research subjects. Initially, IRBs were established to protect research subjects from possible untoward effects of clinical medical research; however, most universities now mandate that research proposals involving humans be approved by their institutional review board. Applied medical anthropologists using patient medical records, for instance, must demonstrate they have secured permission from both the medical institution and the patient. In addition, researchers must devise measures to ensure that patient confidentiality is protected. Research among people who are disabled, very young, elderly, or in some way considered to be members of vulnerable groups must be conducted in such a way that the subjects are protected.

Likewise, many activities of interest to applied medical anthropologists could put either the researcher or the subject in legal danger. Interviews, for instance, on barriers to medical care for immigrants are fraught with difficulties because of potential recriminations if the person being interviewed does not have the necessary legal status or could lose his or her rights to medical care. Researchers who observe illegal activities while studying homelessness must take steps to protect subjects involved as well as themselves.

Anthropologists in academia, as well as those practicing anthropology outside of its confines, are faced with difficult questions: Do universal ethical standards exist? Are all values situationally and culturally relative, or are there some absolute values? They question the ethics of selling human organs, of selling human knowledge, and even of selling, trading, or borrowing cultural traditions (Marshall and Daar 2000). Professional organizations such as the Society for Applied Anthropology (SfAA) and the American Anthropological Association (AAA) developed codes or guidelines for the ethical practice of anthropology, but infringement of these codes carries few professional consequences. Although these codes are designed to cover the practices of all anthropologists, some would argue that the research conducted by medical anthropologists might be more intrusive than other anthropological research because it often deals with biological materials or practices.

Anthropologists specializing in ethics, such as Patricia Marshall (Marshall and Daar 2000), ask whether, for instance, the international proliferation of human tissue "gifts" will change the way we conceptualize both gift and exchange if human organs are the commodity of use. Other themes in the field question the ethics of using people for research to enhance the knowledge of the discipline, and some seek ways to protect people from being used by anthropologists for career development. Codes of ethics, IRBs, and federal policy concerning the Protection of Human Subjects are all designed to reduce the endangerment of people being studied. Justice, equity, respect



for diversity, autonomy of decisions, and a commitment to the leveling of the playing field for all participants are key ethical issues (Whiteford 2000).

## How Is All This Applied?

This quick review of some of the history and trends in medical anthropology begs the question: How is this research applied? We know applied medical anthropologists are policymakers and advisors. We know them as administrators and practitioners. We know they work as consultants and advocates. In each of those roles, they apply principles and theories from anthropology to data generated using medical anthropological methods. And they are all engaged in the resolution of human social problems, such as improving access to medical care for the disenfranchised, alerting the public through careful research to the hidden inequities brought about by racial, ethnic, and gender prejudices, and reflecting critically on the unobserved status quo.

As we suggested at the beginning of this chapter, we see all medical anthropological research as having applied components; however, sometimes they need to be made more explicit. We began by identifying three seminal works, each embodying a concept that has become central to applied medical anthropology: Ben Paul's use of a systems model, Rene Dubos's development of the concept of the biocultural synthesis, and Charles Leslie's use of a comparative framework. Each of these concepts (although not necessarily simultaneously) provides a bridge between research and application. They allow research in medical anthropology to be applied in the development of health care policy, practice, and programs. Jordan's work (1978, 1997) helped transform birthing practices in the United States; it gave a rationale for birthing rooms in hospitals, increased the use of midwives, gave people permission to employ a variety of physical positions during labor and birth, and changed hospital policies to allow family members to be present during the birth.

Likewise, Paul Farmer's eloquent indictment of the use of blame and stereotyping to associate HIV/AIDS with a particular group of people contributed to a reevaluation of hospital admission policies (Farmer 1988, 1992, 1999). Medical anthropology was also applied to uncover policies that doubly disenfranchised drug-using pregnant women, by both putting them in jail immediately following the birth and separating them from their newborns. Medical anthropology research brought to light the unequal application of the maternal drug-screening policy and the harm being done to poor women and their babies (Whiteford and Vitucci 1997). Public concern later resulted in the policy being challenged and changed. Both Myra Bluebond-

Langer's (1978) and Jill Korbin's (1981) work with dying and chronically ill children, which demonstrated the need for the children to be included in medical decision making, changed hospital policies about children's rights and their roles in being able to make decisions about their care. Whether the topic is HIV/AIDS, children's mental health, spouse abuse, or community participation in medical care, the work of applied medical anthropologists is often used to make a difference. It does so by documenting patient and practitioner experiences; assessing systems of care; contextualizing medicine in its personal, political, and economic frameworks; and finding patterns where none were found before.

Policymakers (and their legislative aides) are not the only group that benefits from the application of medical anthropological research. Practitioners such as social workers, addiction counselors, nurses, and physicians use anthropologists to help them reach and treat their clientele more effectively. Anthropologists like Michael Agar (1973, 1980, 1996; Agar, Underwood, and Woolard 1981), Merrill Singer (1992, 1996, 1999, 2000), and Robert Trotter (Trotter, Bowen, and Potter 1995) and others have all found that their research on alcohol, heroin, and other addictions has been used by policymakers and practitioners alike. Some populations are particularly difficult for social service providers to reach and are often invisible to the public. For example, homeless people or domestic violence victims have been made visible through the work of medical anthropologists like Kim Hopper (1988, 1990, 1991) or Jay Sokolovsky (1993, 1997a, 1997b). By making these invisible groups visible, anthropologists help make programs and policies take them into account.

Applied medical anthropology shares a natural affinity with public health. The work of medical anthropologists is used in both public health classrooms and agencies. For instance, the work of Jeannine Coreil used cognitive or decision-making models and helped to design therapeutic interventions like self-help groups for filariasis sufferers in Haiti (2004). Holly Mathews conducted a decision analysis of social support mechanisms for women with breast cancer in the United States (1987, 1990, 1998). Some medical anthropology research is designed specifically to be used by policymakers. Carol Bryant's research on the U.S. federal Women, Infants, and Children (WIC) program (1993, 2001), for instance, used focus groups to gather women's perceptions of its uses and limitations. The research resulted in a revitalization of that program nationwide. Her work combined careful analysis of the policies, services, and practices in the WIC programs she studied, illuminated by the women's words and descriptions that were gathered during focus groups. Their voices captured and amplified the research findings generated by the analysis of programs and policies, resulting in real and measurable policy changes.

## Areas of Current Interest

As we have emphasized, contemporary applied medical anthropologists continue the legacy of Ben Paul, Rene Dubos, and Charles Leslie by focusing on cultural systems, using a biocultural perspective, or employing comparative analysis in their research. Often medical anthropologists focus on the interplay of culture and biology on life stages; the effects of sociocultural categories like gender, race, and ethnicity on the distribution and treatment of disease; and factors accounting for the emergence and reemergence of infectious and contagious diseases such as malaria, dengue fever, cholera, tuberculosis, and HIV/AIDS.

The HIV/AIDS epidemic provides both an impetus and urgency for applied medical anthropologists to work toward prevention by understanding behavior within its political, economic, and medical contexts. The epidemic has made it clear that no magic vaccine is going to control its spread. Even if such a vaccine were available, the costs of providing it to all the people at risk would be prohibitive; therefore, other ways have to be found to control the disease. The key is to understand the beliefs that underlie the behaviors implicated in the spread of the disease (Feldman 1985, 1986, 1990a; Singer 1992, 1996; Trotter et al. 2000).

What Evans-Pritchard and Rivers noticed in the early 1900s is still true a century later. Behaviors are embedded in larger and more encompassing belief systems, and to understand the behaviors, we must study the larger cultural system. AIDS researchers found that behaviors associated with high risks of negative outcomes (i.e., unprotected sex or sharing needles increases the chance of spreading HIV/AIDS) are extremely difficult to change without understanding how those behaviors fit and—in some sense—provide positive outcomes within a larger set of options, alternatives, and risks (Feldman 1985, 1990b; Singer 1992, 1998; Trotter et al. 2000). Intervention policies that fail to recognize the larger cognitive rules of the intended population fail to reach the intended population.

Medical anthropology is also applied through program assessments and evaluations, program and policy monitoring, and policy development and advocacy. Partners in Health (PIH), an NGO organized by Paul Farmer and others, epitomizes how applied medical anthropology can be effectively used in advocacy research. Farmer, an anthropologist and physician, both practices medicine and applies anthropology by being on the ground with local people in clinics in Haiti, Peru, Russia, and Cuba. Simultaneously, PIH works to understand the larger global political and economic picture that shapes those local realities (Farmer 1999, 1992, 2004). The work by PIH and Farmer clearly and eloquently situates disease in the con-

text of disparities and inequalities. Co-morbid diseases, such as HIV/AIDS and tuberculosis (TB), exist in conjunction with prejudice and poverty. Advocates like Farmer and PIH give life and leadership to the fight for justice and equity by applying medical anthropology on a global scale.

Infectious and contagious diseases like HIV/AIDS and TB attract the attention of applied medical anthropologists, as do diseases once thought to be controlled and almost eradicated. The spread of malaria and dengue fever continues to increase, both in the number of cases and also in its geographic range (Brown 1997, 1998; Whiteford 1997; Coreil 1997). Like HIV/AIDS, both malaria and dengue fever have no vaccine, and such prevention is unlikely to be developed. Unlike HIV/AIDS, malaria and dengue fever rarely result in death but, rather, they result in prolonged poor health and increased susceptibility to other diseases. The primary hope in controlling HIV/AIDS, malaria, dengue, and other infectious diseases lies in our ability to understand peoples' beliefs and practices that are implicated in the spread of these diseases.

Just as life stages, biocultural categories, and infectious and contagious diseases have drawn applied medical anthropologists' interest, chronic diseases like heart disease, hypertension (Dressler 1996a, 1996b; Dressler, Baliero, and Dos Santos 1997), and diabetes (Weller et al. 1993; Weller and Baer 2001) are all areas in which anthropologists and clinical researchers are currently working together. Dressler has been working for almost two decades with his Brazilian counterparts—a team that includes physicians and social scientists—to understand relationships among cultural models, lifestyles, hypertension, and heart disease. His work has furthered our understanding of the theory and methods behind consensus modeling and chronic disease research.

Alcohol and drug addiction continues to be a major area of applied medical research with many anthropologists actively engaged in understanding the cultural construction of addiction (Bennett and Ames 1985; Douglas 1990; Eber 1995; Heath 2000; MacAndrew and Edgerton 1969; Marshall 1979).

### Case Study: The Disease Concept of Alcoholism

Medical anthropologists, in particular, have contributed to the debate on the disease concept of alcoholism. What exactly is meant by the disease concept of alcoholism or addiction more generally? When people attribute the etiology, development, or expression of alcoholism to biological factors, they are articulating this concept. Arthur Kleinman's work helps put this somewhat specific idea into a broader theoretical framework. When Kleinman published *Patients and Healers in the Context of Culture* in 1980,

he articulated a theoretical dichotomy in medical anthropology between illness and disease within the overall phenomenon of sickness: "*Disease* refers to a malfunctioning of biological and/or psychological processes, while the term *illness* refers to the psychosocial experience and meaning of perceived disease" (1980, 72). Kleinman submitted this distinction as an ideal dichotomy, not necessarily as reality. He noted that professional practitioners, such as physicians, are more oriented toward viewing sickness as a disease, whereas nonprofessional practitioners tend to be more inclined toward the illness perspective. He observed that for chronic disorders, such as alcoholism, it can be particularly difficult to distinguish between illness and disease. As this case study demonstrates, one's orientation can be critical for constructing an understanding of the source, course, and treatment of alcoholism.

Noel Chrisman (1985) focused precisely on the question of whether alcoholism is an illness or a disease. He referred to the earlier writing of Horatio Fabrega Jr., who defined disease as "altered body states or processes that deviate from norms as established by Western biomedical science" (1972, 213). Similarly, Leon Eisenberg took the position that "patients suffer 'illnesses'; physicians diagnose and treat 'diseases'" (1977, 11). In considering alcoholism, Chrisman observed that "neither alcoholism as an illness nor as a disease is well defined" within the biomedical health culture (1985, 14). A long-standing debate revolves around issues such as the role of psychosocial versus genetic factors in the susceptibility of certain individuals to alcoholism. Chrisman noted that the psychosocial and biological complexity of alcoholism has made it very difficult to arrive at any consensus about the specific factors that "cause" alcoholism. He also observed that because there is no consensus about the disease/illness dichotomy of alcoholism, health practitioners diagnose and treat alcoholism in a variety of ways. In other words, they take particular approaches that are congruent with their worldview of alcoholism. These approaches include the moral, social, spiritual, and biological (1985, 15).

The moral-medical model of alcoholism has provoked lively and relevant discussion to which anthropologists and sociologists, in particular, have contributed. In addressing American beliefs about alcoholism, Genevieve Ames reviews the history of the moral-medical model (1985) that is particularly relevant to our understanding of the etiology, course, and treatment of alcoholism. Ames noted that in the disease concept, alcoholism is viewed as a progressive disease that can be divided into symptomatic phases. The primary distinction between being an alcoholic and a nonalcoholic is the stage when the drinker loses control of alcoholic beverage consumption. In contrast to the moral model prominent during the temperance and prohibition eras in the early twentieth century, in which drinkers were deemed responsi-

ble for their drinking and its consequences, the medical model evolved after World War II as medical professionals and alcoholologists depicted alcoholism as a series of stepping stone experiences with alcoholic beverage consumption (Jellenik 1952, 1960). This shift in thinking about alcoholism still does not have full support across the United States, but alcoholism has become viewed less and less as a sign of moral weakness. This shift could be heralded as a positive development in the public mindset toward dealing effectively with alcoholism. Working clinically with alcoholics from a medical (or disease) perspective, for example, can relieve them from at least some of the blame of their addiction.

Or does it really work that way? From the perspective of American families living with an alcoholic parent, accountability for the alcoholism is complicated (Bennett 1995). This study asked how family members incorporated the concepts of illness versus disease and the moral versus medical model into their comprehension and explanation of alcoholism. Drawing on a subset of ten alcoholic families interviewed in a study of family cultural influences on the well-being of school age children, Bennett examined the interview transcripts for statements about accountability for alcoholism. These statements, as glimpses of worldviews, were organized into three domains: causes, forms, and consequences of alcoholism. Three other concepts are important to consider: shame, guilt, and blame. These are common emotional responses to "irresponsibility" around drinking and drinking-related behavior. Such emotional responses are more likely to emerge in families when the alcoholic and family members subscribe to a moral model of alcoholism rather than a medical model. At the other end of the spectrum, if the family endorses the medical model, the alcoholic and the family are much less likely to feel or express shame, guilt, or blame. However, if the alcoholic does not find a way to resolve the problem, such emotional reactions are more likely to emerge. All ten families studied evidenced all three of these emotions in their attempts to resolve the question of who or what was responsible for the alcoholism.

Beyond this generalization, though, there was wide variation among the families and family members about these emotions. With regard to the cause, or etiology, of alcoholism, no one interviewed suggested that its etiology was biological or genetic. Instead, these were the five most often noted precipitating influences: (1) family pressure to drink or not drink; (2) traumatic life events; (3) occupational situation; (4) emotional problems in the family; and (5) loving alcohol. This final influence is the one that is most likely to connect with the disease/biological/genetic causation. Among all families interviewed, however, "I loved the stuff from the start" was a rare response. One particular impetus to drink came from the wider

political-social context: the Vietnam War. Wartime experiences repeatedly came to the fore in discussions with one couple, who identified this as the time when the husband began drinking with a vengeance: "Vietnam changes the life of everyone who goes through it. I don't suppose I am the same person I was before I went over. It made indelible changes in my psyche. A lot of drunks came back from Vietnam" (author's fieldnotes, n.d.).

Contrary to the opinion that alcoholics and their families spend much of their lives in denial about alcoholism, it is more accurate to see them as using various cognitive and behavioral strategies to grapple with the problem and resolve it. Understanding this is important for designing effective intervention strategies for families with alcoholism. Relating the emic perspectives of these husbands and wives in trying to account for the cause of alcoholism, Bennett concluded that they clearly draw upon an illness rather than a disease model. They tend to view alcoholism neither as a moral nor as a medical phenomenon in terms of its etiology. However, in attempting to find a *solution* to the problem, they do expect the alcoholic, with the help of others, to resolve the problem. At this point, the "sickness" of alcoholism is still regarded in Kleinman's terms as an illness, but if no solution is reached, the family begins to regard alcoholism and the alcoholic in moral terms.

The following quote shows the complexity of one wife's understanding of her husband's lifelong extremely heavy drinking and how she tries to encompass the disease concept within her understanding:

With drinking, you get to the point of saturation where you can't do anything about it, and it's affecting your life so much you try to push it away. There is only so much you can take, and then you don't want any more part of it. I've known for a few years that alcoholism is a disease, but the thing is how long can you live with a disease and go along as if it's all right. There is a point you get to and then, the hell with it, I've had enough and want no part of it because *the disease is getting to you then.* (Bennett 1995, 17)

This woman's struggle to comprehend alcoholism demonstrates the importance of taking a biocultural perspective in research on addictions.

In addition to studying topics like birth and reproduction, chronic and contagious diseases, and alcohol and drug abuse, two others areas stand out as examples of applied medical research: ethnomedicine and health systems analysis. Finerman and Sackett (2003) demonstrated, for example, how ethnomedicine and traditional curing remain embedded in contemporary family health in the Ecuadorian Andes. Their most recent study revealed that most plants grown in Saraguro home gardens are intended for medicinal

application and that the selection of healing herbs cultivated in gardens is tailored to suit the unique health needs of the household. Kedia and van Willigen (2001) provided an example of the place of the health system within the broader sociopolitical system of India. Specifically, they examined the impact of forced population displacement (due to building hydroelectric dams) on the mental health of older people living in Northern India.

## Methods Used by Applied Medical Anthropologists in Studying Health and Medicine

Applied medical anthropologists have found a number of ways to study health and medicine, relying on the traditional anthropological toolkit of techniques employed in ethnographic studies, such as participant observation, surveys, and oral histories (Angrosino 1987, 1989, 2002; LeCompte and Schensul 1999a, 1999b; LeCompte et al. 1999). But they have also developed new methodologies like rapid appraisal (RAP) (Scrimshaw and Hurtado 1987), community elicitation, and network models (Trotter et al. 2000). RAPs were designed to be used in community health appraisals, and they require shorter periods of fieldwork. RAPs often involve both community members and people from outside of the community to design questions that elicit responses about illness categories and locally specific names. This is a critical step in being able to discuss health and illness beliefs and practices using locally appropriate words. The use of local terminology allows people to speak comfortably and allows researchers to learn names of illnesses, diagnoses, and treatment modes. Rapid research techniques have been found to be effective ways to collect basic information for many applications to medical anthropology, including designing health care programs, especially in primary health areas (Pelto and Pelto 1996). Scrimshaw and Hurtado (1987) developed the *Rapid Assessment Procedures* manual to be used in evaluating health care programs and nutrition programs. By using the RAP approach, they found that "[a] great deal of practical, diagnostic, and applied work can be accomplished in a shorter time by using a simple approach" (1987, 1).

Applied medical anthropologists train in the theories and methods of traditional anthropology but then superimpose or integrate methods derived from other disciplines to expand their toolkits. Epidemiology, which we defined earlier as the study of the determinants and distribution of disease, provides population-based data on who is getting sick, what groups of people are sick, and locations where people got sick, and who is getting well. Although there are valuable discussions about the application of epidemiological techniques to anthropology research (McCombie 1990), some

applied medical anthropologists (Janes, Stall, and Gifford 1986; Trostle 1986; Trostle and Sommerfeld 1996; Yacoob and Whiteford 1995) appear to have found them useful. They used epidemiology to provide a measurable set of indicators from data gathered on a large scale, with specific ranges of time and space, within which to contextualize ethnographic analysis.

Focus group research also has become a popular and useful technique for gathering information about identified themes, and at least one university provides a biannual conference on focus group research and application. Earlier we mentioned Carol Bryant's work using focus groups to gather colloquial terms and ideas about particular topics, which enabled her to use that initial set of interactions to shape further research. Sometimes focus groups are used to teach the researcher what the target population thinks about a product or a program. Once the focus groups are completed, that data can be used to shape questionnaires or other research instruments to gather larger numbers of responses.

Oral history techniques, although not unique to applied medical anthropology, have been used effectively to understand the experience of being disabled (Frank 1980, 2000), the kinds of personal interactions people have with health care professionals (M. H. Becker 1974) and living with stigmatized conditions such as infertility (G. Becker 1990; Sandelowski 1993). An oral history might entail soliciting information about a person's personal experience and perspectives on a specific health issue. By collecting oral histories from different people with varying viewpoints about a common health problem, we reach a better understanding of complex health problems.

## The Integration of Theory, Concepts, and Methods

Applied medical anthropologists have contributed to our understanding of health and medicine in a variety of ways: by contributing to interdisciplinary, collaborative investigations of health problems, by applying theoretical models from anthropology to medical systems, and by incorporating ethnographic and other anthropological methods to global problems. The biocultural perspective, in particular, offers significant advances over less inclusive analyses of health. The following case study is an example of how applied medical anthropological research uses the concepts, research methods, and theories to work with a community to design an appropriate and long-lasting intervention.

### Case Study: Cholera Epidemic in Ecuador

This case study exemplifies how interdisciplinary and collaborative research using traditional anthropological field methods, along with focus

groups and epidemiological record reviews, provided critical and practical insights into understanding the transmission of cholera in two rural Andean states during the 1990s cholera epidemic in South America.

In March 1991, the El Tor cholera pandemic hit Ecuador. By the time it began to subside 24 months later, more than 85,000 cases of cholera had been identified, almost 1,000 people had died, and many more cases had gone undiagnosed. Cholera is caused by water-borne bacteria, making communities with unreliable or insecure water supplies the most vulnerable to and at risk for the disease. Indeed, epidemiological data showed that fully 80 percent of the cases in Ecuador came from a corner of the country with the poorest and most marginalized citizens. Within months of the onset of the epidemic, the Ecuadorian Ministry of Health (MOH), along with the Pan American Health Organization (PAHO), WHO, and other international governmental and nongovernmental aid organizations, had successfully reduced the transmission, particularly in urban areas, through health education campaigns and improved access to water and sanitary facilities.

In the rural areas mostly populated by indigenous groups, the epidemic continued unabated. In an attempt to break the chain of transmission in the rural areas, the MOH requested aid from a variety of international aid donors; one was USAID, which contracted with the Environmental Health Project (EHP) to undertake an in-depth investigation of cholera-related behaviors in the communities at greatest risk of contracting and continuing the spread of the disease. An international, interdisciplinary team, which included an applied medical anthropologist, a physician/epidemiologist, and a community educator, was brought to the project. The aim of the project was the development and implementation of what came to be named the Community Participatory Intervention (CPI) model, based on the following assumptions: (1) Members of the community needed to lead the community in its fight against the disease—the fight had to be a grassroots movement; (2) simultaneously, local concepts of risk, disease and health, as well as local beliefs and behaviors had to be elicited; (3) biological information about the disease vectors and environment needed to be shared; and finally, (4) a culturally appropriate, locally designed, and regionally sustainable intervention had to be agreed upon.

The research and implementation took place over an 18-month period in four rural communities in the two Andean states with the highest cholera rates. Using an ecological framework, the project gathered information about water resources, land tenure patterns, community organization, health statistics, and the regional public health system. Ethnographic techniques were used to train local participants to elicit community terms and categories related to health beliefs and behaviors implicated in oral and fecal

transmissions. Participatory teams were recruited from local communities; regional multidisciplinary teams were brought together from regional health and educational agencies. The MOH coordinated the activities.

Within a year of the implementation of the CPI model, the number of new cholera cases in the research sites dropped drastically (from 32,430 cases in 1992 to only 6,883 cases in 1993). And the reductions were sustained. Equally important, the rates of other water-borne diseases dropped significantly and the reduction was sustained. Two years (and even ten years) later, some of the participants trained in the CPI model were still local health advocates, and the model implementation sites demonstrated lower water-borne infection rates than did neighboring communities and states where the CPI model was not implemented. Not only did water-borne infectious disease rates drop, but local leadership was also developed as part of the CPI model.

Why did the CPI model work? It worked because the participating communities were anxious for relief from the visible and often deadly threat of cholera. When the project began, almost every household in the study communities had lost someone, and everyone knew someone who had died from cholera; people were very motivated. But the model also actively validated local knowledge and local understandings of the threats—from cholera as well as from other sources—that people perceived in their surroundings. This validation of local beliefs, in conjunction with the incorporation of new information about disease vectors, provided local inhabitants with means to combat cholera.

The model worked because, although the focus was on cholera, it was not an exclusive focus. Other foci were brought to light by ethnographic interviews and team members' experiences. It worked because it followed community-based research with community-determined actions and interventions. Creative health education and leadership training were not the only means used to combat cholera. The locally designed intervention combined community leadership, new information about disease transmission, and a commitment from the community to participate. New, closed water containers kept hands from dipping into them. The containers also had a spigot that could be easily cleaned. Locally available chlorine was used to disinfect water. Each of these factors shaped the outcome, and, with this combination, the project succeeded. Communities beyond the original research site became so excited about the water containers and the participatory training that they also asked for the CPI process to be conducted in their community. Participants from the original intervention communities created a small group to train other communities, thereby spreading the intervention.

The CPI model succeeded on many levels. It was grounded in the local community but had support from regional, state, and national offices of the government. It trained local people in things they were interested in and concerned about. And the results were transferable to other communities, were locally sustainable, and resulted in national policy changes. As one Ecuadorian CPI team member noted, "People have been changed by participating in the project; before they were quiet, compliant, and unquestioning. Now they express their opinions, question others and feel they are right."

## Future Directions

The worldwide HIV/AIDS pandemic has brought into sharp focus the need for social science researchers to work closely with medical researchers and forces us all to look at new ways to prevent the spread of disease and to understand the underlying causes, not only the biological basis for disease but also the cultural conditions that enhance and accelerate it. HIV/AIDS is emblematic of but one of the consequences of unequal distribution of wealth and access to resources throughout the world.

Applied medical anthropologists have significant contributions to make in our understanding of disease prevention and to the reform of health care systems. Following the trajectory begun by Ben Paul and others, the systems approach directs medical anthropologists to identify the various pieces of a system and how they fit together and to consider how change in one element affects the entire system. In health care reform, this view is particularly critical because of the various and often competing perspectives, such as those of the clients, practitioners, and insurers—whether they are private or public. Governments throughout the world are struggling to provide health care in a privatizing world where not all voices are heard equally. Anthropologists have a role to play in providing data and analysis of these different system changes and their consequences.

The ability to conceptually bridge culture and biology (the biocultural synthesis) and its evolutionary basis are critical components of applied medical anthropology. Just as Dubos perhaps hoped, the vigorous subdiscipline continues in new and innovative directions largely because of its appreciation for how culture and biology are inexorably intertwined. Addictions research, for instance, demonstrates this meshing of boundaries between the cultural construction of disease and the physiological understanding of its expression.

Charles Leslie recently wrote that medical anthropology has cultivated a "humanistic interdisciplinary natural science tradition" (2001, 437). One would hope (and imagine) that the future of the discipline will continue that

tradition. The future is harder to realize than to imagine, but we agree with Leslie that "most anthropologists have considered the discipline, and our recent subdisciplinary part of it, to be more than science. It has been a worldview, an occupation, a way of life, an entertainment, and . . . an existential search for meaning" (2001, 437). Let us hope that students and others will continue to recognize the importance of the humanistic and scientific tradition of applied medical anthropology.

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