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Introduction and Relevance

Introduction

Medical anthropology operates as a focal area within anthropology that draws on all five of the discipline’s major subfields: biological, cultural, and linguistic anthropology, archeology, and applied or engaged anthropology. Medical anthropologists study health and illness as biosocial states of being in the lifeworlds of different populations, are attentive to links and flows between macro- and microenvironments, and pay close attention to the distribution (and maldistribution) of diseases and resources promoting health. They are invested in several lines of research, of which five are highlighted. The first is the biocultural examination of health and illness across the life course given changing social, cultural, material, and environmental conditions that affect biological processes. The second is the study of how cultural values and social institutions, socioeconomic processes, and power relations inform regarding the way illness and risk of illness is experienced, represented, and responded to by different groups and (ethno)medical systems. The third is an examination of health care provision and exclusion, disease surveillance, and control as a means of understanding the politics of responsibility locally, nationally, and globally. The fourth involves the critical assessment of interventions developed in the name of health and development, and the ways they have been implemented, monitored, and evaluated. And the fifth line of research is attentive to the production of knowledge about health, the way health problems are framed (and by whom), and the ways in which framing problems and groups in particular ways serve as charters for thinking about and solving problems in particular ways.

Relevance to Environmental Health

Environmental health is a central concern for medical anthropologists, who view this field broadly using several different theoretical lenses. One lens is political ecology, which focuses on political and economic factors and the way they change ecological conditions that affect relationships between humans and other species that cohabit common landscapes, environmental practices and policy, and representations of environments. In terms of scale, medical anthropologists frequently analyze biosocial phenomena on a continuum extending from the local to the global to document how social and economic relations play out in space and time. Medical anthropology’s approach to environmental health begins with how human beings populate and move within and between environments, considers how their presence affects and is affected by ecosocial conditions within these environments, and considers how these conditions are shaped by local, regional, and global factors that span religion and cosmology, science and technology, economics and politics. This perspective expands the framing of environment beyond that of a discrete physical space in which humans reside, to nested and overlapping environments that synergistically affect each other in the context of rapid globalization. Today, local communities and economies are increasingly subject to pressures and opportunities associated with emerging global markets, changing patterns of consumption, and expanding networks of transportation and communication. Local environments are modified, manipulated, and affected by regional and global processes such as changing agricultural patterns and practices, industrial development and resource extraction, demographic trends associated with transitions from rural to urban economies, and the movement of goods, humans, and microorganisms. Environment is not simply where people live, but where they are positioned given local ties, individual and community identity, and emergent global ecological flows and social networks.

Methods and Framing

Medical anthropologists engage in ethnographic research, the hallmarks of which include the study of behavior, thought, and speech in context; participant observation; in-depth interviews with multiple stakeholders occupying different positions of power in social formations; life histories and case studies; and historical and archival analysis. They employ many qualitative assessment tools including surveys, sorting exercises, and focus groups, as well as standardized instruments, which generate biological, biometric, psychometric, and
epidemiological data as relevant to research questions at hand. They build on contributions from scholars outside anthropology, and are often involved in research partnerships with related disciplines such as public health, medical sociology, economics, geography, ecology, and the health sciences. They are also invested in involving populations in participatory research through the use of such visual and spatial technologies as participatory mapping and photo-voice.

Medical anthropologists also deem it essential to 'study up' and conduct systems level analysis of health care systems, health and development bureaucracies and philanthropies, non governmental organizations (NGOs), private–public partnerships, and environmental legislation that affects health outcomes. For example, medical anthropologists study the policies, politics, and bureaucracies responsible for the regulation of water and sanitation, forestry, food safety, etc., as they relate to health outcomes. They also study the activities and linkages between local and global NGOs devoted to environment and health oversight as well as the ways in which NGO hiring practices impact on government health infrastructure. Global policies related to the control of environmental pollutants ranging from pesticides to tobacco smoke, and the accessibility and regulation of pharmaceutical products, also fall under the purview of medical anthropology. In keeping with an important shift in analytical focus from 'international health' to 'global health,' medical anthropologists have become increasingly interested in health diplomacy and what it takes to introduce and enforce global policies across national boundaries for global good. Much of the driving force behind global health is the recognition that emerging diseases such as severe acute respiratory syndrome (SARS) or influenza (both swine and avian) move quickly and require well-coordinated global disease control policies that demand the surveillance of local environments and the interface between animal and human ecosystems. Medical anthropologists are involved with both documenting examples of local–global disease linkages and representations of such linkages by the popular press and political parties, as well as the response of citizens and activists.

Key Concepts

There are a number of conceptual frameworks that assist medical anthropologists in their study of environmental health, a term that is defined quite broadly to encompass health care–related outcomes best understood in relation to the physical, social, political, economic, and communication environments in which they occur. In the following section, a brief discussion of a few of these conceptual frameworks is provided, beginning with those provided by political ecology and biocultural anthropology. Then these concepts are expanded to consider how environmental health is linked to issues of risk and risk perception, the accumulation and persistence of meaning and memory in cultural landscapes, and the consequences of disproportionate exposure to risks and hazards. Also, implications are examined for effective governance in light of these disparities and the mobilization and response of emergent social movements as they address disparities and inequality.

Political Ecology: Natural versus Cultural Landscapes

Political ecology applies a system's perspective to understanding the ecological ramifications and sequelae of political economic inspired practices and policy on both macro- and microenvironments. It looks upstream at the actors and actions responsible for setting environmental changes in motion, and downstream at those subject to such changes. Political ecology is attentive to the impact of ecological changes on not just humans, but other species as well, which may ultimately have an effect on human health. They are also attentive to disparities that result from ecological changes such as unequal access to resources and uneven exposure to risks. There are numerous examples of political ecological studies that look at poor health as an outcome of poor environmental policy related to deforestation, the creation of dams and irrigation systems, shifts from food crops to cash crops like tobacco, misuse of chemical fertilizers and pesticides, the explosion of consumer culture that generates vast quantities of waste, increasing fossil fuel consumption that alters climate and weather patterns, natural or man-made disasters that are exacerbated by environmental modification and degradation, and the loss of local and global biodiversity as wilderness areas are lost or degraded.

The political ecology framework also expands the definition of environment to include social processes and their impact on local ecologies, whereas at the same time recognizing that these are inherently linked assemblages of natural, cultural, political, and ideological environments that interact as a complex system. Political ecology embraces complex systems thinking and points to the limitations of adopting a narrow definition of the natural environment and treating local and global environments as independent from one another. A basic assumption is that the natural and cultural are so thoroughly intertwined that it is difficult to consider either in abstraction, and that it is necessary to consider the ecological and the sociopolitical as coextensive. Recent scholarship on the social construction of nature addresses this arbitrary distinction between nature and culture and considers the way human behavioral patterns are embedded within
environmental contexts. This critical stance serves as a useful corrective against simplistic depictions of nature as bounded and an empty space within which social processes play out.

**Biocultural Anthropology**

Biocultural anthropology explores the nexus between culture and human biology and examines human genotypic and behavioral plasticity in context. Among other things, a biocultural approach to medical anthropology investigates short- and long-term health outcomes that result from changing and differential access to resources (e.g., stunted growth and development due to malnutrition and poor survivorship resulting from limited access to primary health care), differential exposure to environmental stressors (e.g., from exposure to pollution to exposure to the stresses of poverty, overcrowding, fear of hunger, violence, and oppression), and the cultural practices and social institutions that mediate the effect of these stressors. A biocultural approach focuses on what is cultural about biosocial relations.

Local biology and the process of embodiment are important considerations for the biocultural approach, and build on three premises: culture and biology exist in an ongoing feedback relationship, the body is a biocultural project in the making that is inextricably linked to place and time, and physical changes in the body are more than the result of gradual adaptations to the environment. Local biology is an outcome of active bodily engagement in which experiential states are at once the product of cultural and biological processes. Cultural interpretation and related bodily practices have a recursive relationship to the ongoing experience of bodily states and biological change. Local biology is studied as an expression of human plasticity – the ability of genotypic biology to change its phenotype in response to the environment – and short- and long-term consequences are discussed in terms of adaptability and adaptation.

Biocultural oriented medical anthropologists, like their ecocultural epidemiologist colleagues, view humans as embodying the cumulative effect of living in different material, social, and cultural environments throughout their life. Embodiment refers to the lived experience of one’s body, as well as one’s experience of life mediated through the body, as this is influenced by its physical, psychological, social, political, economic, cultural, and technologically mediated environments. Medical anthropologists investigate the cumulative effect of factors such as insufficient or excessive food, living in crowded spaces not conducive to physical activity, exposure to risks and hazards, and stressors ranging from the material to the psychosocial across the lifespan (and beyond). Common outcomes they assess include the incidence and prevalence of chronic illness, and precursors of disease like blood pressure, life expectancy, and birth weight. They are further attentive to variations in health outcomes both across and within populations, and search for differences that make a difference under such rubrics as positive deviance (see below). Opinions range on the relative contributions of biological, sociocultural, genetic, and environmental factors to states of health, but all biocultural oriented medical anthropologists agree that the ‘action is in the interaction’ – meaning that individual factors are less important than the intersection of them all.

**Environments of Risk and Risk Subjectivity**

Medical anthropologists study the ways in which environments are perceived to be dangerous, whether due to spirits, microbes, endemic and epidemic diseases, physical hazards, natural disasters, or violence. They look upstream to political and economic factors that foster environments of risk (see the section ‘Political Ecology: Natural versus Cultural Landscapes’), and attention is paid not only to the negative impacts of environmental intrusion, modification, and degradation of local ecosystems, but to the integrity of local cosmologies in cultural contexts where maintaining cosmological relations is central to a sense of well-being. Medical anthropology is attentive to the ways in which perceptions of risk alter behavior, shape government policy, enable governance, frame health care interventions, and influence consumer behavior as well as marketing. Research focuses on issues that include surveillance and regulation of populations at risk, social and technological strategies to reduce risks, perceptions and experiences of risk exposure (risk subjectivity) that lead to the adoption of risk-related practices, and social responses to perceptions of being at risk.

Medical anthropologists also study risk as a prominent theme found in popular health culture, including ideas about how to mitigate risks to personal health when living in an environment of risk as a means of harm reduction. Prominent social philosophers Ulrich Beck and Anthony Giddens have noted that people live in a global risk society, exposed to increasing risks as well as information about risk, produced by different stakeholders. These stakeholders range from medical and public health professionals working with diagnostic tests to identify risk to marketers cashing in on collective anxieties. The preoccupation with risk in popular literature is symptomatic of one of the paradoxes of modernity. Citizens of the risk society strive to gain mastery over nature through technology, yet increasingly recognize that tangible risks occur as local and global environments are modified by this very technology. These emergent risks are then addressed with more technology in a never-ending feedback loop.
People also live in a time of increasing distrust in information about risk, given competing accounts of risk factors and increasing reports of information bias and downright fraud. Citizens of the risk society are subjected to increased exposure to information about risk in media environments, even though these risks are often uncertain, their impacts unknown, and future consequences unknowable. Medical anthropologists are becoming more interested in studying risk information environments and what sources of information about risk and which spokespeople are trustworthy. They are also becoming more attentive to the ways in which information about risk can actually place populations at greater risk depending on how segments of the population respond to this information – be it hypervigilance, disinterest, or fatalism.

Finally, medical anthropologists have pushed for greater recognition of environments of risk as a counterbalance to public health’s preoccupation with risk factors, groups at risk, and the study of risky behavior. These foci of investigation unintentionally lead to victim blaming when the local environment context is not taken into account. Particular environments predispose types of risky behavior and contribute to the maldistribution of ill health and groups at greater risk.

**Space and Place, Memory, and Experience**

The concept of place as physical space predisposed to particular types of human interaction contributes to the anthropological investigation of environments of risk. The distinction between space and place originated within the field of human geography. Human cultural landscapes are seen as places embedded with meaning, histories, and memories that set the stage for particular types of interactions, be they associated with risky behavior or behavior conducive to the collective good. Perceptions of place are also tied to social norms, and public health advocates compete with industries such as Big Tobacco over who gets to define normative behavior in places where people gather, live, or work. These place-based meanings have a half-life and fade or persist depending on how their remembrance is framed or reproduced.

**Structural Violence and Social Capital**

Analyses of structural violence draw attention to health and economic inequality as outcomes of social structures, institutions, and policies that systematically block members of a population from meeting basic needs, resulting in ill health and premature death. Structural violence devalues and marginalizes people, although policies that promote it are often dressed up as serving national and global interests. For example, World Bank structural adjustment policies have been criticized for negatively impacting on the livelihood of the poor as well as reducing their access to health care in developing countries. Other examples include policies in the United States that restrict access to health programs or benefits, or lead to the closing of unprofitable clinics in impoverished neighborhoods.

Structural violence creates environments of health and health care risk. Drawing on biocultural and critical public health reasoning (ecosocial epidemiology, etc.), medical anthropologists study both the short- and long-term impacts of structural violence, as cumulative effects of unhealthy environments may take years to manifest in higher rates of chronic disease among marginalized populations. The consequences of chronic disease are presently under-appreciated in contexts where acute illness is so visible, but in reality, the two are often interrelated. For example, fighting malnutrition is at once a child survival priority to prevent stunting and wasting during a child’s peak period of development, and a way of reducing chronic disease later in life for children who do survive and are more likely to suffer from diseases like diabetes or heart disease.

Medical anthropologists also study the effect of structural violence on the integrity of social relations and how this affects social support and mutual assistance within communities and between extended kin during times of illness and disaster. Social capital has been used as a gloss to describe social support, social reciprocity, and positive features of social organization that facilitate collective action and cooperation. One of the most dangerous effects of structural violence is degradation of social networks and loss of social capital, which results in loss of family or community security and safety nets. When extreme poverty and uncertainty make reciprocity impossible, the very fabric of social relations comes undone. Medical anthropologists study individual and environmental effects of these states of anomie, and the social institutions to which people turn as sources of resilience and social revitalization.

**Syndemics**

A disease syndemic framework is used to study concurrent and synergistic health problems linked to common antecedent and contributing factors in environments of risk. Attention is drawn to both causal factors and reciprocal relationships that lead to correlations between patterns of disease incidence and social or economic variables, although recently, more emphasis has been placed on environmental variables as well (see below). An analysis focused on syndemics invites to look upstream and consider the importance of how these variables translate into elevated disease concentrations, and to consider not only the current impact of interactions between social factors and health problems, but future...
problems that result from such interactions. Some examples of syndemics that are of interest to medical anthropologists include the interrelated problems of drug abuse, violence, tuberculosis (TB) and human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS) in North American inner cities; or the increasing proportion of overweight residents of the United States, and the linked diseases such as diabetes, hypertension, and heart disease.

These examples focus on the built/urban environment and the conditions that result from the interaction between disease assemblages and social factors that shape their impact and distribution. More recently, attention has been focused on human–animal interactions, especially as zoonotic diseases such as SARS or influenza (both avian and swine) encourage a consideration of the transmission of microbes/viruses back and forth between humans and animals, and the environmental factors such as deforestation, environmental degradation, or habitat fragmentation that may increase the potential for zoonotic jumps. A syndemic framework applied to zoonoses and human–animal interactions points in a more complex direction, encouraging a consideration of not only the consequences of habitat encroachment or environmental degradation in specific cases or regions, but the large-scale practices such as industrial farming, monoculture agriculture, or deforestation as part of a larger global problem, since individual practices or events cannot be isolated from the larger impacts of the human footprint on both local and global environments. The ‘one-health’ approach to human–animal interactions, and global environmental health more broadly, emphasizes the synergistic relationships that the syndemic framework suggests, integrating them at multiple scales, from the global to the local, and in multiple nested contexts, including socioeconomic, political, and environmental.

**Network Society and Biosociality**

Today, the most distant points of the earth are connected by flows of information enabled by communications technology and levels of connectivity that were previously unimaginable. This has radically altered the notion of personal, social, and political networks, as well as that of ‘the local,’ which can no longer be viewed in isolation. The local is now part of an interconnected global network that exchanges information, commodities, images, and ideas, and is facilitated by technologies such as the Internet, cell phones, text messaging, and emerging social media sites such as Twitter or Facebook. The extent and speed of this exchange means that the plight of a community or the goals of a local environmental group can be communicated almost as fast (or faster!) across the globe as it can to the next town, and new social groupings of individuals coalesce around shared environmental experiences and mutual advocacy interests. Paul Rabinow coined the term biosociality to refer to groups that come to share a common biologically understood identity due to illness, health-related condition, or perceived risk. In some instances, shared biological affiliation has led members of a community of affliction to make demands on institutions, governments, and scientists as a form of biopolitics. Medical anthropologists are interested in how such groups (ranging from NGOs to patient advocate and environmental health groups) are formed and mobilized as new actors on the global health stage, how their activism is responded to by those in power, and the novel sorts of social organization that result from these novel groupings centered on biosociality.

**Mediated Environments and Epidemic Fear**

In the global network society, the range and extent of media environments has expanded tremendously, as local media is picked up nationally and internationally, and global health surveillance searches local news stories on the Internet for information about emerging diseases and to filter out rumors from credible leads. Likewise, international news is being reported locally, along with commentary on global health threats that are colored by political rhetoric and subject to sensationalism or attempts to allay public fears. Media environments also include advertising copy and marketing campaigns, which are often difficult to distinguish from legitimate science in the health–medical field, so that much of the public’s information about health and illness is gleaned from information and advertising generated by the pharmaceutical industry, an industry that also influences publications in scientific journals cited in support of their products. Mediated environments at once facilitate the transfer of credible information and foster epidemic fear, which raises concerns over responsible reporting and oversight as well as the need to study how the public understands and responds to news stories and advertisements that inform the public about risk. Analysis of media environments does not assume comprehensive availability of information, but focuses on the myriad forces that affect what information is made available or chosen for dissemination, the global network of media conduits that convey this information, the multiple social contexts that receive this information via official (e.g., politics, news media) and unofficial (e.g., rumor) networks, and the impact these flows of information have on risk perception, epidemic fear, and behavior change.

The spread of information about the impending threat of disease can even outpace the spread of the actual disease (e.g., SARS, avian flu), leading the public to either overreact or lose trust in public health warnings, or it can lag behind and fail to report information about diseases that should or would raise concerns in the general
population (e.g., TB, HIV/AIDS). Medical anthropologists are interested in translational research that studies how health information is presented to the public, received, and understood, as well as in monitoring the impact of news stories and advertising campaigns on different sectors of the population. They are equally interested in an ‘epidemiology of ideas’ that considers what information and representations are contagious and are amenable to spread, as in the study of the contagious pathogens themselves. Examples such as SARS, avian flu, and most recently the H1N1 swine flu pandemic raise questions about not only the environmental and political ecological contexts that help or hinder the spread of potentially pandemic diseases, but also the speed at which information about these risks can flow and the effect of this information when it reaches populations before actual exposure. They also raise questions related to state control over this information in efforts to control representations of the disease risk itself, and shape international perceptions of effectiveness of treatment and prevention plans, which are tied up within the biopolitical agendas of modernity and national sovereignty.

From Risk Perception to Popular Epidemiology

Ulrich Beck famously declared that ‘smog is democratic,’ in a discussion of the universal risks that modern people face as part of the changing nature of industrial and technocratic society. The reality is that exposure to pollution, whether industrial, agricultural, or environmental, is anything but egalitarian. His intent, of course, was to emphasize the global nature of the risk society in which people live, and that threats to humans are a global, rather than regional or local, phenomena. He noted that marginalized groups, neighborhoods, or regions often lack the social or political capital to block polluters of what are described in the following text as the commons. The end result is a clustering rather than even distribution of pollution and environmental degradation.

Social movements arise to fight against both global and local sources of pollution, environmental destruction, and degradation. Popular epidemiology describes an example of an emergent social movement within the United States wherein members of local communities who are dissatisfied with governmental policies and oversight are undertaking their own analyses of local problems related to poor health outcomes. They are using tools increasingly at their disposal to communicate with scientists, environmental activists, policy makers in other places, and so on, and taking well-informed proactive stances against politics and business as usual. Medical anthropologists study popular forms of social empowerment and local responses to environmental and occupational health crises. They are also interested in how local groups that share a common sense of biosociality find and support one another on the Internet as well as communicate their plight to larger audiences and inspire other groups to mobilize.

The Tragedy of the Commons

Anthropologists working on environmental health draw on a robust literature that has grown up alongside a discussion of the tragedy of the commons. The idea of global commons has been used to describe various shared resources that are both managed through community oversight and are undermined by greed, poor regulation, and poor enforcement of existing regulations. The management of resources like clean air, water, a stable local food supply, and so on, and practices such as sustainable agriculture and water conservation demonstrate ways that groups come together to preserve/conserve resources. Examples of mismanagement, overuse of limited resources, and the cumulative effects of seemingly small negative impacts illustrate the tragedy of these commons, as resources are squandered, degraded, or polluted. At a local scale, people develop a relationship with land and the surrounding environment, and the knowledge, ideas, and informational resources embedded within the local cultural and physical landscapes are lost when these landscapes are destroyed or altered by habitat loss, environmental degradation, or pollution. Globally, issues such as loss of biodiversity; cumulative impacts of pollution; the overuse of pesticides, antibiotics, and fertilizers; and widespread environmental modification and degradation all point to potential global impacts. Global versus local governance of the commons is a contentious political issue especially as it pertains to issues of national sovereignty and the locus of responsibility, for example, in governing the availability and use of valuable antibiotics like the drug rifampicin (an important TB drug) or antiretroviral drugs for HIV. If they are misused or sold in diluted doses, resistant pathogens will emerge that affect all nations. Medical anthropologists interested in health diplomacy investigate when and under what circumstances a sovereign state allows global bodies to dictate policy within its border or engage in global surveillance.

Future Directions for Medical Anthropology

The following section highlights a few of the research directions presently being pursued by medical anthropologists engaging environmental health as a broad field of inquiry. The following section begins with a note on the development of innovative methods.
Methods

Medical anthropologists are experimenting with a number of novel methodologies made possible by the availability of new technologies. One such method is participatory geographic information systems (GIS) mapping. When used in conjunction with ethnographic research methods, such mapping permits a better understanding of local perceptions of the distribution of health problems. Local populations are shown maps depicting higher and lower prevalence rates of a focal problem or syndemic, and then asked to participate in problem solving about what factors contribute to the patterns visually shown. The method then layers maps with existing information on who inhabits different places and what is known about the space and the people who inhabit these places. Mapping makes transparent what information health officials are collecting and seeing as risk factors, and allows local populations to interrogate these data and the way it is collected. They are also given the opportunity to identify relevant data they think is not being collected. This is an empowering methodology that does more than simply validate or cross-check epidemiological patterns and distributions of environmental problems. It facilitates community discussion of these patterns, their meaning, and possible solutions.

Photo voice is another promising methodology that can be used alone or in conjunction with participatory mapping. It consists of giving community members the technology to create visual representations of their own locale, patterns of social interaction, and physical activity in different spaces at different times. They are also asked to record such things as what spaces are deemed safe or dangerous at different times as related to seasonality or the risk of disasters such as storm surges and flooding. Other things that may be captured by photo voice include seasonal challenges that impact on health and health care seeking, such as water availability and transportation. Like maps, these visual representations of local places foster community dialogue and a grounding of discussion in the lifeworld of participants.

Representations

In addition to studying the physical environment and its occupants, medical anthropologists have been focusing on the representations of environments by stakeholders who have differing agendas when representing spaces and the people who inhabit them. By broadening analytical focus beyond physical and material landscapes to include ideological, representational, and perceptual landscapes, medical anthropologists have been attempting to capture the dynamic interplay between (1) political representations of environments of risk; (2) media representations as influenced by local, national, and international information streams; (3) public health representations; and (4) community- and NGO-based representations. The issue is how various representations of the environment and environmental health problems are associated with the politics of responsibility, and how these politics play out in health policy. For example, much research on emerging and reemerging infectious disease centers on the epidemiology of these diseases, and environmental and behavioral factors that are thought to catalyze their emergence or facilitate their spread. Medical anthropologists are contributing to this field of study by assisting public health teams in their efforts to identify routes of disease transmission as well as routes of information flow about diseases that affect community responses to them. This includes the monitoring of rumors associated with epidemic fear, whether expressions of current collective anxieties are tied to social memory of past epidemic disease or politically motivated and strategically disseminated.

The Consumer Environment

There is a great need for medical anthropologists to study ways in which patterns of consumption affect human biology, ecology, and the epidemiology of emerging and reemerging diseases. Patterns of consumption create environments of risk through pollution (air, water, garbage disposal), increases in traffic fatalities (road congestion, alcohol consumption, cell phone use while driving), new breeding sites for disease vectors (tires, plastic containers), and breeding grounds for violence (availability of firearms, illegal drugs, etc.). On a structural level, poor planning of urban environments encourages unhealthy consumption habits. For example, lack of safe walkable communities contributes to car-centric transportation and decreases in physical activity. The decreased presence of fresh food vendors due to high rents or lack of space for markets leads to greater consumption of fast foods. The proliferation of advertising of fast food, liquor, and cigarettes in spaces inhabited by the poor predisposes them to lifestyle illnesses.

Living in environments of risk and engaging in unhealthy consumption habits also drives a second type of consumption behavior associated with harm reduction. Harm reduction behavior is diverse, ranging from the consumption of dietary supplements to detoxify the body, to air filters to clean the air, bottled water, and ways of coping with stress that include everything from yoga classes to the taking of drugs like Prozac. Medical anthropologists are presently studying both how individuals exposed to environments of risk attempt to protect themselves, and how an emphasis on self-care averts attention from the consequences of unhealthy living spaces and hazardous work environments. To what extent does this reduce pressure to alter these unhealthy environments? Taking a life span perspective, medical anthropologists are also interested in studying the
biological sequelae of shifts in a population’s consumption of food and food drugs, and new living and working arrangements. To what extent does this change the age of puberty, increase the incidence of obesity, or predispose populations to chronic diseases like diabetes?

Global Citizenship, the Politics of Responsibility, and Health Diplomacy

The ways in which global health problems and the specter of a disease pandemic are framed raise sensitive political issues regarding the politics of responsibility and national sovereignty. Many environmental problems are global in nature, but some countries exacerbate them more than others through activities that promote global warming, pesticide overuse, deforestation, or loss of biodiversity. Medical anthropologists are beginning to take a greater interest in monitoring and examining arguments about global policies that relate to transnational regulation. These arguments are being advanced by various stakeholders, which range from governments to NGOs, and local to transnational business interests. They consider issues such as the following. What types of arguments are being made in the name of health diplomacy? What is the relative success or failure of these arguments? What types of data do stakeholders find compelling? And what sets of issues, stakeholders, and social processes are involved in successful and unsuccessful attempts at diplomacy and governance? Medical anthropologists are studying global efforts aimed at the surveillance and control of emerging diseases and antimicrobial resistance, and the control and regulation of industries peddling ill health, such as Big Tobacco.

Response to emerging diseases has been described as the ‘new ping pong’ of international relations. Countries that rarely agree are now willing to cooperate when it comes to the surveillance and control of diseases like avian flu and SARS. The acceptance of global regulations that eclipse national sovereignty has been described as one of the most radical and far-reaching changes in international law on public health since the beginning of international health cooperation in the mid-nineteenth century. Medical anthropologists are interested in studying how this policy plays out in countries that are presently undergoing decentralization. How will global funds for surveillance and control be distributed locally, and how will oversight of disease control programs be managed? Medical anthropologists have begun to critically assess the local impact of transnational techniques of governance associated with agenda setting policies and programs, audit, and evaluation. They have called for ethnographies of the technologies of governance as a much-needed part of anthropology of emerging health policy in a global health environment.

Social Movements, NGOs, and Global Environmental Health

The emergence of social movements and NGOs in response to both acute environmental health crises and chronic environmental health problems is of considerable interest to medical anthropologists. NGOs at once place pressure on governments to do something and take pressure off national governments by executing small-scale local responses to problems that the state is either unwilling or incapable of addressing via national policy. Medical anthropologists have become interested in studying the ways in which local social organizations are supported by, and interface with, transnational movements, and how national governments and international organizations enlist the assistance of these advocacy groups to further differing agendas. They are further interested in how non-state actors (i.e., foundations, NGOs, advocacy, and professional groups) at once advance a global health agenda and present a problem for the coordination and oversight of health activities in a rapidly changing health care environment.

The Study of Protective Factors and Resilience

In the field of epidemiology far more attention is given to the study of risk factors than protective factors and resilience. Medical anthropologists have long been interested in social institutions and forms of behavior that reduce the chances and impact of illness and other forms of misfortune, and enable recuperation. For example, they have studied the impact of disaster or violence on communities and examined social institutions that facilitate recovery. But more attention needs to be dedicated to this endeavor. It will be important to study the resources communities draw on following periodic and relatively rare crises, as well as recurrent or endemic events that chronically persist. Medical anthropologists have become interested in studying not just groups at risk, but positive deviance groups or individuals that fare better than expected in a difficult situation or harsh environment. It is hoped that the study of positive deviance will provide insights into the resilience of households and social networks, and suggest ways that these social formations may be buffered and strengthened.

See also: Assessing Indoor Air Quality, Biological Pathways Between the Social Environment and Health, Children’s Environmental Health: General Overview, Climate Change, Environmental Health, and Human Rights, Disabling Environments, Economic Inequality and Health in the Age of Globalization, Environmental Justice and Interventions to Prevent Environmental Injustice in the United States, Genetics is Involved in Everything, but not Everything is Genetic, Global Climate Changes and International Trade and Travel: Effects on Human Health
Outcomes, Global Development and Population Health, Globalization and Environmental Health, Intercontinental Air Pollution Transport: Links to Environmental Health, International Environmental Agreements and Environmental Health, Land Use Change and Human Health, Life Course Epidemiology and Inequality in Health, Long-Term Effects of Particulate Air Pollution on Human Health, Neighbourhood ‘Social Infrastructure’ for Health: The Role of Social Capital, Fear of Crime and Area Reputation, Overview of How Ecosystem Changes Can Affect Human Health, Perceptions and Physiological Responses to Indoor Air Quality, Physical Urban Environment, Political and Social Violence: Health Effects, Productivity and Health Effects of High Indoor Air Quality, Sense of Coherence and Social Structure, Sick Building Syndrome, Social Capital and its Links to Health, Social Environment: Overview, Social Support and Social Networks, Urban Health: An Overview, Urban Social Environment, Ventilation, Vulnerable Populations and Regions.

Further Reading

Briggs C and Nichter M (2009) Biocommunicability and the Biopolitics of Pandemic Threats. Medical Anthropology 28(3): 189–198.
Brown P (2007) Toxic Exposures: Contested Illness and the Environmental Health Movement. New York: Columbia University Press.
Escobar A (1996) Constructing nature: Elements for a poststructural political economy. In: Peet R and Watts M (eds.) Liberation Ecologies: Environment, Development, Social Movements, pp. 46–68. London: Routledge.
Farmer P (2004) An anthropology of structural violence. Current Anthropology 45(3): 305–317.

Relevant Websites

http://www.cdc.gov/syndemics/
Centers for Disease Control (CDC) Syndemics Prevention Network.
http://www.medanthro.net/research/cagh/index.html
Critical Anthropology for Global Health (CAGH) study group.
http://www.medanthro.net
Society for Medical Anthropology.