

PERSPECTIVES: AN OPEN INTRODUCTION TO CULTURAL ANTHROPOLOGY

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17

HEALTH AND MEDICINE

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Learning Objectives

- Define the biocultural perspective and provide examples of how interactions between biology and culture have affected human biology.
- Identify four ethno-etiologicals (personalistic, naturalistic, emotionalistic, and biomedical) and describe how each differs in explaining the root cause of illness.
- Explain the significance of faith in healing.
- Examine the relationship between mental health and cultural factors, including stigma, that affect the way people with mental health conditions are perceived.
- Discuss examples of culture-bound syndromes.
- Evaluate the positive and negative effects of biomedical technologies.

What does it mean to be “healthy”? It may seem odd to ask the question, but health is not a universal concept and each culture values different aspects of well-being. At the most basic level, health may be perceived as surviving each day with enough food and water, while other definitions of health may be based on being free of diseases or emotional troubles. Complicating things further is the fact that each culture has a different causal explanation for disease. For instance, in ancient Greece health was considered to be the product of unbalanced humors or bodily fluids. The four humors included black bile, phlegm, yellow bile, and blood. The ancient Greeks believed that interactions among these humors explained differences not only in health, but in age, gender, and general disposition. Various

things could influence the balance of the humors in a person's body including substances believed to be present in the air, changes in diet, or even temperature and weather. An imbalance in the humors was believed to cause diseases, mood problems, and mental illness.¹

The World Health Organization (WHO) recognizes that the health of individuals and communities is affected by many factors: "where we live, the state of our environment, genetics, our income and education level, and our relationships with friends and family."² Research conducted by the WHO suggests that these characteristics play a more significant role in affecting our health than any others, including having access to health care. For this reason, anthropologists who are interested in issues related to health and illness must use a broad holistic perspective that considers the influence of both biology and culture. **Medical anthropology**, a distinct sub-specialty within the discipline of anthropology, investigates human health and health care systems in comparative perspective, considering a wide range of bio-cultural dynamics that affect the well-being of human populations. Medical anthropologists study the perceived causes of illness as well as the techniques and treatments developed in a society to address health concerns. Using cultural relativism and a comparative approach, medical anthropologists seek to understand how ideas about health, illness, and the body are products of particular social and cultural contexts.

ANTHROPOLOGY AND THE BIOCULTURAL PERSPECTIVE

Evolutionary biology is a field of study that investigates the ways that natural processes have shaped the development of life on Earth, producing measurable changes in populations over time. Humans, *Homo sapiens*, are a special case in the discussion of evolution. We are a relatively young species that has been on Earth for only about 195,000 years.³ Although this may sound like a long time, compared with other animals, humans are newcomers and we have been subject to processes of natural selection and adaptation for less time than many other living things. In that short time period, human lifestyles have changed dramatically. The first humans evolved in Africa and had a foraging lifestyle, living in small, kin-based groups. Today, millions of people live in crowded, fast-paced, and technologically advanced agricultural societies. In evolutionary terms, this change has happened rapidly. The fact that these rapid changes were even possible reveals that human lifestyles are **biocultural**, products of interactions between biology and culture. This has many implications for understanding human health.

The theory of natural selection suggests that in any species there are certain physical or behavioral traits that are **adaptive** and increase the capacity of individuals to survive and reproduce. These adaptive traits will be passed on through generations. Many human traits contributed to the survival of early human communities. A capacity for efficient walking and running, for instance, was important to human survival for thousands of years. However, as cultural change led to new lifestyles, some human characteristics became **maladaptive**.

One example is the obesity epidemic that has emerged all over the world. According to the Center for Disease Control and Prevention, more than one-third of the population of the United States is obese.⁴ Obesity is considered to be a "disease of civilization," meaning that it did not exist in early human populations. Taking a biocultural evolutionary approach to human health, we can ask what traits characteristic of early human foraging populations might have encouraged an accumulation of fat in the human body. The answer comes from the evidence of food shortages among foraging populations. In fact, 47 percent of societies that forage experience food shortages at least once per year. Another 24 percent experience a shortage at least every two years.⁵ When taking this into account, the ability to retain body

fat would have been advantageous for humans in the past. Women with more body fat could give birth to healthy babies and breastfeed them, even in periods of food scarcity. It is also possible that women and men would have viewed body fat as a sign of health and access to resources, choosing sexual partners based on this characteristic. If so, powerful biological and cultural forces would have contributed to genetic traits that led to efficient metabolism and higher body fat.

With the development of agriculture, calories became more easily available while many people in the population became more sedentary. Traits that were once adaptive became maladaptive. The development of cultural preferences for foods high in fat and sugar, such as the “standard American diet” (SAD) is directly associated with obesity. These cultural changes have had a negative impact on health in many places. In Polynesia, for instance, obesity rates were around 15 percent in traditional farming communities, but climbed to over 35 percent as people moved to cities.⁶ This is an example of the biocultural nature of many human health challenges.

Another example of this biocultural dynamic is sickle cell anemia, an inherited disease that can be fatal. A person who inherits the sickle cell gene from both parents will have red blood cells with an unusual sickle (crescent) shape. These cells cannot carry oxygen as efficiently as normal red blood cells and they are also more likely to form painful and dangerous blood clots. Ordinarily, genetic conditions that make it more difficult for individuals to survive or have children, will become less common in populations over time due to the effects of natural selection. From an evolutionary perspective, one might ask why a deadly genetic condition has remained so common in human populations.

The cultural context is important for answering this question. The sickle cell gene is found most often in human populations in Africa and Southeast Asia where malaria is widespread. Malaria is a mosquito-borne illness that can be deadly to humans. People who have inherited one copy of the sickle cell anemia trait (instead of the two copies that cause sickle cell disease) have resistance to malaria. This is a significant adaptive trait in parts of the world where malaria is widespread. There is some evidence that malaria became a significant threat to human health only after the invention of agriculture. The deforested areas and collections of standing water that characterize agricultural communities also attract the mosquitos that carry disease.⁷ In this case, we can see biocultural dynamics in action. Because resistance to malaria is an adaptive trait, the sickle cell gene remained common in populations where malaria is present. In parts of West and Central Africa, up to 25 percent of the population has the sickle cell gene. While sickle cell anemia is still a deadly disease, those who inherit a single copy of the gene have some protection from malaria, itself a deadly threat in many places. This example illustrates the biocultural interaction between genes, pathogens, and culture.

Infectious diseases generally do not have an adaptive function for humans like the examples above, but many infectious diseases are influenced by human cultural systems. Because early human communities consisted of small groups with a foraging lifestyle, viruses and bacteria transmitted from person to person were unlikely to result in large-scale epidemics. Healthy individuals from neighboring groups could simply avoid coming into contact with anyone who was suffering from illness and outbreaks would be naturally contained.⁸

The rapid increase in the size of human communities following the invention of agriculture changed this pattern. Agriculture can support more people per unit of land and, at the same time, agriculturalists need to live in permanent urban settlements in order to care for their crops. In a cyclical way, agriculture provides more food while also requiring that people have sizeable families to do the necessary farm work. Over the course of several thousand years, agricultural communities became increasingly densely populated. This had many implications for local ecology: problems disposing of waste and difficulty accessing clean water. A prime example of the health effects of the transition to urban settlements is cholera, a water-borne illness that spreads through water that has been polluted with human feces.

Cholera, which was first detected in urban populations in India, has killed tens of thousands of people throughout history and continues to threaten populations today, particularly in developing countries, where access to clean water is limited, and in places that have experienced natural disasters.⁹

From an adaptive perspective, human beings die from infectious diseases because they do not have immunity to them. Immunity can be built up over time for some diseases, but unfortunately only after the illness or death of many members of a population.¹⁰ When a new infectious disease reaches a population, it can wreak havoc on many people. Historically, several new infectious diseases are known to have been introduced to human populations through contact with livestock. Tuberculosis and smallpox were linked to cattle and influenza to chickens. When humans domesticated animal species, and began to live in close proximity to them, new routes for the transmission of **zoonotic** disease, illnesses that can be passed between humans and animals, were established.¹¹ Living in cities accelerates the spread of infectious diseases and the scale of outbreaks, but may also contribute to the natural selection of genetic traits that confer resistance to disease. This biocultural evolutionary process has been documented in urban populations where there are genes providing some resistance to leprosy and tuberculosis.¹²

ETHNOMEDICINE

Ethnomedicine is the comparative study of cultural ideas about wellness, illness, and healing. For the majority of our existence, human beings have depended on the resources of the natural environment and on health and healing techniques closely associated with spiritual beliefs. Many such practices, including some herbal remedies and techniques like acupuncture, have been studied scientifically and found to be effective.¹³ Others have not necessarily been proven medically effective by external scientific evidence, but continue to be embraced by communities that perceive them to be useful. When considering cultural ideas about health, an important place to start is with **ethno-etiology**: cultural explanations about the underlying causes of health problems.

In the United States the dominant approach to thinking about health is **biomedical**. Illnesses are thought to be the result of specific, identifiable agents. This can include pathogens (viruses or bacteria), malfunction of the body's biochemical processes (conditions such as cancer), or physiological disorders (such as organ failure). In biomedicine as it is practiced in the United States (Western biomedicine), health is defined as the absence of disease or dysfunction, a perspective that notably excludes consideration of social or spiritual well-being. In non-Western contexts biomedical explanations are often viewed as unsatisfactory. In his analysis of ideas about health and illness in non-Western cultures, George Foster (1976) concluded that these ideas could be categorized into two main types of ethno-etiology: personalistic and naturalistic.¹⁴

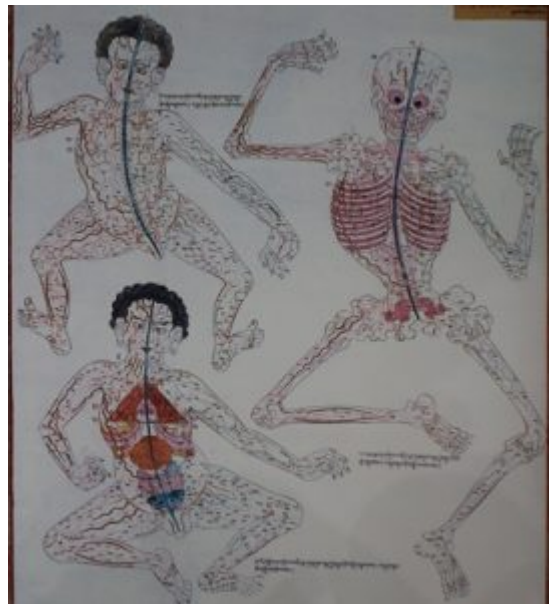


Figure 1: Traditional Tibetan Medicine Poster.

Ethno-Etiologies: Personalistic and Naturalistic

Personalistic ethno-etiological views disease as the result of the “active, purposeful intervention of an agent, who may be human (a witch or sorcerer), nonhuman (a ghost, an ancestor, an evil spirit), or supernatural (a deity or other very powerful being).”¹⁵ Illness in this kind of ethno-etiology is viewed as the result of aggression or punishment directed purposefully toward an individual; there is no accident or random chance involved. Practitioners who are consulted to provide treatment are interested in discovering *who* is responsible for the illness—a ghost, an ancestor? No one is particularly interested in discovering *how* the medical condition arose in terms of the anatomy or biology involved. This is because treating the illness will require neutralizing or satisfying a person, or a supernatural entity, and correctly identifying the being who is the root cause of the problem is essential for achieving a cure.

The Heiban Nuba people of southern Sudan provide an interesting example of a personalistic etiology. As described by S.F. Nadel in the 1940s, the members of this society had a strong belief that illness and other misfortune was the result of witchcraft.

A certain magic, mysteriously appearing in individuals, causes the death or illness of anyone who eats their grain or spills their beer. Even spectacular success, wealth too quickly won, is suspect; for it is the work of a spirit-double, who steals grain or livestock for his human twin. This universe full of malignant forces is reflected in a bewildering array of rituals, fixed and occasional, which mark almost every activity of tribal life.¹⁶

Because sickness is thought to be caused by spiritual attacks from others in the community, people who become sick seek supernatural solutions. The person consulted is often a **shaman**, a person who specializes in contacting the world of the spirits.

In Heiban Nuba culture, as well as in other societies where shamans exist, the shaman is believed to be capable of entering a trance-like state in order to cross between the ordinary and supernatural realms. While in this state, the shaman can identify the individual responsible for causing the illness and sometimes the spirits can be convinced to cure the disease itself. Shamans are common all around the world and despite the proverbial saying that “prostitution is the oldest profession,” shamanism probably is! Shamans are religious and medical practitioners who play important social roles in their communities as healers with a transcendent ability to navigate the spirit world for answers. In addition, they often have a comprehensive knowledge of the local ecology and how to use plants medicinally. They can address illnesses using both natural and supernatural tools.

In **naturalistic** ethno-etiological views, diseases are thought to be the result of natural forces such as “cold, heat, winds, dampness, and above all, by an upset in the balance of the basic body elements.”¹⁷ The ancient Greek idea that health results from a balance between the four humors is an example of a naturalistic explanation. The concept of the yin and yang, which represent opposite but complementary energies, is a similar idea from traditional Chinese medicine. Achieving balance or harmony between these two forces is viewed as essential to physical and emotional health. Unlike personalistic explanations, practitioners who treat illness in societies with naturalistic ethno-etiological views are interested in understanding how the medical condition arose so that they can choose therapeutic remedies viewed as most appropriate.

Emotional difficulties can be viewed as the cause of illness in a naturalistic ethno-etiology (an **emotionalistic explanation**). One example of a medical problem associated with emotion is *susto*, an illness recognized by the Mixe, an indigenous group who live in Oaxaca, Mexico, as well as others throughout central America. The symptoms of *susto* include difficulty sleeping, lack of energy, loss of appetite and sometimes nausea/vomiting and fever. The condition is believed to be a result of a “fright” or shock

and, in some cases at least, it is believed to begin with a shock so strong that it disengages the soul from the body.¹⁸ The condition is usually treated with herbal remedies and barrida (sweeping) ceremonies designed to repair the harm caused by the shock itself.¹⁹ Although physicians operating within a biomedical ethno-etiology have suggested that *susto* is a psychiatric illness that in other cultural contexts could be labeled anxiety or depression, in fact *susto* does not fit easily into any one Western biomedical category. Those suffering from *susto* see their condition as a malady that is emotional, spiritual, and physical.²⁰

In practice, people assess medical problems using a variety of explanations and in any given society personalistic, naturalistic, or even biomedical explanations may all apply in different situations. It is also important to keep in mind that the line between a medical concern and other kinds of life challenges can be blurry. An illness may be viewed as just one more instance of general misfortune such as crop failure or disappointment in love. Among the Azande in Central Africa, witchcraft is thought to be responsible for almost all misfortune, including illness. E.E. Evans-Pritchard, an anthropologist who studied the Azande of north-central Africa in the 1930s, famously described this logic by describing a situation in which a granary, a building used to store grain collapsed.

In Zandeland sometimes an old granary collapses. There is nothing remarkable in this. Every Zande knows that termites eat the supports in course of time and that even the hardest woods decay after years of service. Now a granary is the summerhouse of a Zande homestead and people sit beneath it in the heat of the day and chat or play the African hole-game or work at some craft. Consequently it may happen that there are people sitting beneath the granary when it collapses and they are injured...Now why should these particular people have been sitting under this particular granary at the particular moment when it collapsed? That it should collapse is easily intelligible, but why should it have collapsed at the particular moment when these particular people were sitting beneath it...The Zande knows that the supports were undermined by termites and that people were sitting beneath the granary in order to escape the heat of the sun. But he knows besides why these two events occurred at a precisely similar moment in time and space. It was due to the action of witchcraft. If there had been no witchcraft people would have been sitting under the granary and it would not have fallen on them, or it would have collapsed but the people would not have been sheltering under it at the time. Witchcraft explains the coincidence of these two happenings.²¹

According to this logic, an illness of the body is ultimately caused by the same force as the collapse of the granary: witchcraft. In this case, an appropriate treatment may not even be focused on the body itself. Ideas about health are often inseparable from religious beliefs and general cultural assumptions about misfortune.²²

Is Western Biomedicine An Ethno-Etiology?

The **biomedical** approach to health strikes many people, particularly residents of the United States, as the best or at least the most “fact based” approach to medicine. This is largely because Western biomedicine is based on the application of insights from science, particularly biology and chemistry, to the diagnosis and treatment of medical conditions. The effectiveness of biomedical treatments is assessed through rigorous testing using the scientific method and indeed Western biomedicine has produced successful treatments for many dangerous and complex conditions: everything from antibiotics and cures for cancer to organ transplantation.

However, it is important to remember that the biomedical approach is itself embedded in a distinct cultural tradition, just like other ethno-etiologies. Biomedicine, and the scientific disciplines on which

it is based, are products of Western history. The earliest Greek physicians Hippocrates (c. 406-370 BC) and Galen (c. 129-c. 200 AD) shaped the development of the biomedical perspective by providing early insights into anatomy, physiology, and the relationship between environment and health. From its origins in ancient Greece and Rome, the knowledge base that matured into contemporary Western biomedicine developed as part of the Scientific Revolution in Europe, slowly maturing into the medical profession recognized today. While the scientific method used in Western biomedicine represents a distinct and powerful “way of knowing” compared to other etiologies, the methods, procedures, and forms of reasoning used in biomedicine are products of Western culture.²³

In matters of health, as in other aspects of life, ethnocentrism predisposes people to believe that their own culture’s traditions are the most effective. People from non-Western cultures do not necessarily agree that Western biomedicine is superior to their own ethno-etiologicals. Western culture does not even have a monopoly on the concept of “science.” Other cultures recognize their own forms of science separate from the Western tradition and these sciences have histories dating back hundreds or even thousands of years. One example is Traditional Chinese Medicine (TCM), a set of practices developed over more than 2,500 years to address physical complaints holistically through acupuncture, exercise, and herbal remedies. The tenets of Traditional Chinese Medicine are not based on science as it is defined in Western culture, but millions of people, including a growing number of people in the United States and Europe, regard TCM as credible and effective.

Ultimately, all ethno-etiologicals are rooted in shared cultural perceptions about the way the world works. Western biomedicine practitioners would correctly observe that the strength of Western biomedicine is derived from use of a scientific method that emphasizes objectively observable facts. However, this this would not be particularly persuasive to someone whose culture uses a different ethno-etiology or whose understanding of the world derives from a different tradition of “science.” From a comparative perspective, Western biomedicine may be viewed as one ethno-etiology in a world of many alternatives.

Techniques for Healing

Western biomedicine tends to conceive of the human body as a kind of biological machine. When parts of the machine are damaged, defective, or out of balance, chemical or surgical interventions are the preferred therapeutic responses. Biomedical practitioners, who can be identified by their white coats and stethoscopes, are trained to detect observable or quantifiable symptoms of disease, often through the use of advanced imaging technologies or tests of bodily fluids like blood and urine. Problems detected through these means will be addressed. Other factors known to contribute to wellness, such as the patient’s social relationships or emotional state of mind, are considered less relevant for both diagnosis and treatment. Other forms of healing, which derive from non-biomedical ethno-etiologicals, reverse this formulation, giving priority to the social and spiritual.

In Traditional Chinese Medicine, the body is thought to be governed by the same forces that animate



Figure 2: The Taiyang bladder meridian, one of several meridians recognized in Traditional Chinese medicine. From Shou Hua's *Jushikei Hakki*, 1716, Tokyo

the universe itself. One of these is *chi* (qi), a vital life force that flows through the body and energizes the body and its organs. Disruptions in the flow or balance of *chi* can lead to a lack of internal harmony and ultimately to health problems so TCM practitioners use treatments designed to unblock or redirect *chi*, including acupuncture, dietary changes, and herbal remedies. This is an example of **humoral healing**, an approach to healing that seeks to treat medical ailments by achieving a balance between the forces or elements of the body.

Communal healing, a second category of medical treatment, directs the combined efforts of the community toward treating illness. In this approach, medical care is a collaboration between multiple people. Among the !Kung (Ju/'hoansi) of the Kalahari Desert in southern Africa, energy known as *num* can be channeled by members of the community during a healing ritual and directed toward individuals suffering from illness. Richard Katz, Megan Bisele, and Verna St. Davis (1982) described an example of this kind of ceremony:

The central event in this tradition is the all-night healing dance. Four times a month on the average, night signals the start of a healing dance. The women sit around the fire, singing and rhythmically clapping. The men, sometimes joined by the women, dance around the singers. As the dance intensifies, *num*, or spiritual energy, is activated by the healers, both men and women, but mostly among the dancing men. As *num* is activated in them, they begin to *kia*, or experience an enhancement of their consciousness. While experiencing *kia*, they heal all those at the dance.²⁴

While communal healing techniques often involve harnessing supernatural forces such as the *num*, it is also true that these rituals help strengthen social bonds between people. Having a strong social and emotional support system is an important element of health in all human cultures.

Faith and the Placebo Effect

Humoral and communal approaches to healing, which from a scientific perspective would seem to have little potential to address the root causes of an illness, present an important question for medical anthropologists. What role does faith play in healing? Sir William Osler, a Canadian physician who was one of the founders of Johns Hopkins Hospital, believed that much of a physician's healing ability derived from his or her ability to inspire patients with a faith that they could be cured.²⁵ Osler wrote:

Faith in the Gods or in the Saints cures one, faith in little pills another, suggestion a third, faith in a plain common doctor a fourth...If a poor lass, paralyzed apparently, helpless, bed-ridden for years, comes to me having worn out in mind, body, and estate a devoted family; if she in a few weeks or less by faith in me, and faith alone, takes up her bed and walks, the Saints of old could not have done more.²⁶

In fact, there is a considerable amount of research suggesting that there is a **placebo effect** involved in many different kinds of healing treatments. A placebo effect is a response to treatment that occurs because the person receiving the treatment *believes it will work*, not because the treatment itself is effective.

In Western biomedicine, the placebo effect has been observed in situations in which a patient believes that he or she is receiving a certain drug treatment, but is actually receiving an inactive substance such as water or sugar.²⁷ Research suggests that the body often responds physiologically to placebos in the same way it would if the drug was real.²⁸ The simple act of writing a prescription can contribute to the successful recovery of individuals because patients trust that they are on a path that will lead to wellness.²⁹ If we consider the role of the placebo effect in the examples above, we should consider the possibility that humoral and communal healing are perceived to “work” because the people who receive these remedies have faith in them.

An interesting example of the complexity of the mind-body connection is found in studies of intercessory prayer: prayers made to request healing for another person. In one well-known study, researchers separated patients who had recently undergone heart surgery into two groups, one containing people who know they would be receiving prayers for their recovery and another group who would receive prayers without being aware of it. Those patients who knew they were receiving prayers actually had *more* complications and health problems in the month following surgery.³⁰ This reflects an interesting relationship between faith and healing. Why did the patients who knew that others were praying for them experience more complications? Perhaps it was because the knowledge that their doctors had asked others to pray for them made patients more stressed, perceiving that their health was at greater risk.

However, it can also be a lack of faith that drives people to look for alternative treatments. In the United States, alternative treatments, some of which are drawn from humoral or communal healing traditions, have become more popular among patients who believe that Western biomedicine is failing them. Cancer research facilities have begun to suggest acupuncture as a treatment for the intense nausea and fatigue caused by chemotherapy and scientific studies suggest that acupuncture can be effective in relieving these symptoms.³¹ Marijuana, a drug that has a long recorded history of medical use starting in ancient China, Egypt, and India, has steadily gained acceptance in the United States as a treatment for a variety of ailments ranging from anxiety to Parkinson's disease.³² As growing numbers of people place their faith in these and other remedies, it is important to recognize that many alternative forms of healing or medicine lack scientific evidence for their efficacy. The results derived from these practices may owe as much to faith as medicine.



Figure 3: A botánica store selling herbal folk medicines.

MENTAL HEALTH

Unlike other kinds of illnesses, which present relatively consistent symptoms and clear biological evidence, mental health disorders are experienced and treated differently cross-culturally. While the discipline of psychiatry within Western biomedicine applies a disease-framework to explain mental illness, there is a consensus in medical anthropology that mental health conditions are much more complicated than the biological illness model suggests. These illnesses are not simply biological or chemical disorders, but complex responses to the environment, including the web of social and cultural relationships to which individuals are connected.

Medical anthropologists do not believe there are universal categories of mental illness.³³ Instead, individuals may express psychological distress through a variety of physical and emotional symptoms. Arthur Kleinman, a medical anthropologist, has argued that every culture frames mental health concerns differently. The pattern of symptoms associated with mental health conditions vary greatly between cultures. In China, Kleinman discovered that patients suffering from depression did not

describe feelings of sadness, but instead complained of boredom, discomfort, feelings of inner pressure, and symptoms of pain, dizziness, and fatigue.³⁴

Mental health is closely connected with social and cultural expectations and mental illnesses can arise as a result of pressures and challenges individuals face in particular settings. Rates of depression are higher for refugees, immigrants, and others who have experienced dislocation and loss. A sense of powerlessness also seems to play a role in triggering anxiety and depression, a phenomenon that has been documented in groups ranging from stay-at-home mothers in England to Native Americans affected by poverty and social marginalization.³⁵

Schizophrenia, a condition with genetic as well as environmental components, provides another interesting example of cross-cultural variation. Unlike anxiety or depression, there is some consistency in the symptom patterns associated with this condition cross culturally: hallucinations, delusions, and social withdrawal. What differs, however, is the way these symptoms are viewed by the community. In his research in Indonesia, Robert Lemelson discovered that symptoms of schizophrenia are often viewed by Indonesian communities as examples of communication with the spirit world, spirit possession, or the effects of traumatic memories.³⁶ Documenting the lives of some of these individuals in a [film series](#), he noted that they remained integrated into their communities and had significant responsibilities as members of their families and neighborhoods. People with schizophrenia were not, as often happens in the United States, confined to institutions and many were living with their condition without any biomedical treatments.

In its multi-decade study of schizophrenia in 19 countries, the World Health Organization concluded that societies that were more culturally accepting of symptoms associated with schizophrenia integrated people suffering from the condition into community life more completely. In these cultures, the illness was less severe and people with schizophrenia had a higher quality of life.³⁷ This finding has been controversial, but suggests that stigma and the resulting social isolation that characterize responses to mental illness in countries like the United States affect the subjective experience of the illness as well as its outcomes.³⁸

THE EXPERIENCE OF ILLNESS IN PLACE

Social Construction of Illness

As the above examples demonstrate, cultural attitudes affect how medical conditions will be perceived and how individuals with health problems will be regarded by the wider community. There is a difference, for instance, between a disease, which is a medical condition that can be objectively identified, and an illness, which is the subjective or personal experience of feeling unwell. Illnesses may be caused by disease, but the experience of being sick encompasses more than just the symptoms caused by the disease itself. Illnesses are, at least in part, social constructions: experiences that are given meaning by the relationships between the person who is sick and others.

The course of an illness can worsen for instance, if the dominant society views the sickness as a moral failing. Obesity is an excellent example of the social construction of illness. The condition itself is a result of culturally induced habits and attitudes toward food, but despite this strong cultural component, many people regard obesity as a preventable circumstance, blaming individuals for becoming overweight. This attitude has a long cultural history. Consider for instance the religious connotations within Christianity of “gluttony” as a sin.³⁹ Such socially constructed stigma influences the subjective

experience of the illness. Obese women have reported avoiding visits to physicians for fear of judgment and as a result may not receive treatments necessary to help their condition.⁴⁰ Peter Attia, a surgeon and medical researcher who delivered a [TED Talk](#) on this subject, related the story of an obese woman who had to have her foot amputated, a common result of complications from obesity and diabetes. Even though he was a physician, he judged the woman to be lazy. “If you had just tried even a little bit,” he had thought to himself before surgery.

Subsequently, new research revealed that insulin resistance, a precursor to diabetes, often develops as a result of the excess sugars used in many kinds of processed foods consumed commonly in the United States. As Attia observes, high rates of obesity in the United States are a reflection of the types of foods Americans have learned to consume as part of their cultural environment.⁴¹ In addition, the fact that foods that are high in sugars and fats are inexpensive and abundant, while healthier foods are expensive and unavailable in some communities, highlights the economic and social inequalities that contribute to the disease.

The HIV/AIDS virus provides another example of the way that the subjective experience of an illness can be influenced by social attitudes. Research in many countries has shown that people, including healthcare workers, make distinctions between patients who are “innocent” victims of AIDS and those who are viewed as “guilty.” People who contracted HIV through sex or intravenous drug use are seen as guilty. The same judgment applies to people who contracted HIV through same-sex relationships in places where societal disapproval of same-sex relationships exists. People who contracted HIV from blood transfusions, or as babies, are viewed as innocent. The “guilty” HIV patients often find it more difficult to access medical care and are treated with disrespect or indifference in medical settings compared with superior treatment provided to those regarded as “innocent.” In the wider community, “guilty” patients suffer from social marginalization and exclusion while “innocent” patients receive greater social acceptance and practical assistance in responding to their needs for support and care.⁴²

The stigma that applies to “guilty” patients also ignores the socioeconomic context in which HIV/AIDS spreads. For instance, in Indonesia, poor women can make considerably more money as sex workers than in many other jobs: \$10 an hour as a sex worker compared to 20 cents an hour in a factory.⁴³ Sex work may be the only form of employment available in a patriarchal society. In a similar way, poverty and a lack of other choices contribute to a decision to engage in sex work in other societies, including in sub-Saharan Africa where rates of HIV infection are among the highest in the world. Poverty itself is one of the greatest “risk factors” for HIV infection.⁴⁴ The clear relationship between poverty, gender, and HIV infection has been the topic of a great deal of research in medical anthropology. One example is Paul Farmer’s classic book, *AIDS and Accusation: Haiti and the Geography of Blame* (1992), which was one of the earliest books to critically evaluate the connection between poverty, racism, stigma, and neglect that allowed HIV to infect and kill thousands of Haitians. Projects like this are critical to developing holistic views of the entire cultural, economic, and political context that affects the spread of the virus and attempts to treat the disease. [Partners in Health](#), the non-profit medical organization Paul Farmer helped to found, continues to pursue innovative strategies to prevent and



Figure 4: AIDS prevention art, Mozambique. The text reads “think of the consequences, change behavior, prevent HIV/AIDS.”

treat diseases like AIDS, strategies that recognize that poverty and social marginalization provide the environment in which the virus flourishes.

Culture-Bound Syndromes

A **culture-bound syndrome** is an illness recognized only within a specific culture. These conditions, which combine emotional or psychological with physical symptoms, are not the result of a disease or any identifiable physiological dysfunction. Instead, culture-bound syndromes are **somatic**, meaning they are physical manifestations of emotional pain. The existence of these conditions demonstrates the profound influence of culture and society on the experience of illness.

Anorexia

Anorexia is considered a culture bound syndrome because of its strong association with cultures that place a high value on thinness as a measure of health and beauty. When we consider concepts of beauty from cultures all over the world, a common view of beauty is one of someone with additional fat. This may be because having additional fat in a place where food is expensive means that one is likely of a higher status. In societies like the United States where food is abundant, it is much more difficult to become thin than it is to become heavy. Although anorexia is a complex condition, medical anthropologists and physicians have observed that it is much more common in Western cultural contexts among people with high socioeconomic status.⁴⁵ Anorexia, as a form of self-deprivation, has deep roots in Western culture and for centuries practices of self-denial have been associated with Christian religious traditions. In a contemporary context, anorexia may address a similar, but secular desire to assert self-control, particularly among teenagers.⁴⁶

During her research in Fiji, Anne Becker (2004) noted that young women who were exposed to advertisements and television programs from Western cultures (like the United States and Australia) became self-conscious about their bodies and began to alter their eating habits to emulate the thin ideal they saw on television. Anorexia, which had been unknown in Fiji, became an increasingly common problem.⁴⁷ The same pattern has been observed in other societies undergoing “Westernization” through exposure to foreign media and economic changes associated with globalization.⁴⁸

Swallowing Frogs in Brazil

In Brazil, there are several examples of culture-bound syndromes that affect children as well as adults. Women are particularly susceptible to these conditions, which are connected to emotional distress. In parts of Brazil where poverty, unemployment, and poor physical health are common, there are cultural norms that discourage the expression of strong emotions such as anger, grief, or jealousy. Of course, people continue to experience these emotions, but cannot express them openly. Men and women deal with this problem in different ways. Men may choose to drink alcohol heavily, or even to express their anger physically by lashing out at others, including their wives. These are not socially acceptable behaviors for women who instead remark that they must suppress their feelings, an act they describe as having to “swallow frogs” (*engolir sapos*).⁴⁹

Nervos (nerves) is a culture-bound syndrome characterized by symptoms such as headaches, trembling, dizziness, fatigue, stomach pain, tingling of the extremities and even partial paralysis. It is viewed as a result of emotional overload: a state of constant vulnerability to shock. Unexplained wounds on the body may be diagnosed as a different kind of illness known as “blood-boiling bruises.” Since emotion

is culturally defined as a kind of energy that flows throughout the body, many believe that too much emotion can overwhelm the body, “boiling over” and producing symptoms. A person can become so angry, for instance, that his or her blood spills out from under the skin, creating bruises, or so angry that the blood rises up to create severe headaches, nausea, and dizziness. A third form of culture-bound illness, known as *peito aberto* (open chest) is believed to occur when a person, most often a woman, is carrying too much emotional weight or suffering. In this situation, the heart expands until the chest becomes spiritually “open.” A chest that is “open” is dangerous because rage and anger from other people can enter and make a person sick.⁵⁰

In stressful settings like the communities in impoverished areas of northeastern Brazil, it is common for people to be afflicted with culture-bound illnesses throughout their lives. Individuals can suffer from one condition, or a combination of several. Sufferers may consult *rezadeiras/rezadores*, Catholic faith healers who will treat the condition with prayer, herbal remedies, or healing rituals. Because these practitioners do not distinguish between illnesses of the body and mind, they treat the symptoms holistically as evidence of personal turmoil. This approach to addressing these illnesses is consistent with cultural views that it is the suppression of emotion itself that has caused the physical problems.

BIOMEDICAL TECHNOLOGIES

In the history of human health, technology is an essential topic. Medical technologies have transformed human life. They have increased life expectancy rates, lowered child mortality rates, and are used to intervene in and often cure thousands of diseases. Of course, these accomplishments come with many cultural consequences. Successful efforts to intervene in the body biologically also have implications for cultural values and the social organization of communities, as demonstrated by the examples below.

Antibiotics and Immunizations

Infectious diseases caused by viruses and bacteria have taken an enormous toll on human populations for thousands of years. During recurring epidemics, tens of thousands of people have died from outbreaks of diseases like measles, the flu, or bubonic plague. The Black Death, a pandemic outbreak of plague that spread across Europe and Eurasia from 1346-1353 AD, killed as many as 200 million people, as much as a third of the European population. Penicillin, discovered in 1928 and mass produced for the first time in the early 1940s, was a turning point in the human fight against bacterial infections. Called a “wonder drug” by Time magazine, Penicillin became available at a time when bacterial infections were frequently fatal; the drug was glorified as a cure-all.⁵¹ An important factor to consider about the introduction of antibiotics is the change to an understanding of illness that was increasingly scientific and technical. Before science could provide cures, personalistic and naturalistic ethno-etiologicals identified various root causes for sickness, but the invention of antibiotics contributed to a strengthening of the Western biomedical paradigm as well as a new era of profitability for the pharmaceutical industry.

The effects of antibiotics have not been completely positive in all parts of the world. Along with other technological advances in areas such as sanitation and access to clean water, antibiotics contributed to an **epidemiological transition** characterized by a sharp drop in mortality rates, particularly among children. In many countries, the immediate effect was an increase in the human population as well as a shift in the kinds of diseases that were most prevalent. In wealthy countries, for instance, chronic con-

ditions like heart disease or cancer have replaced bacterial infections as leading causes of death and the average lifespan has lengthened. In developing countries, the outcome has been mixed. Millions of lives have been saved by the availability of antibiotics, but high poverty and lack of access to regular medical care mean that many children who now survive the immediate dangers of infection during infancy succumb later in childhood to malnutrition, dehydration, or other ailments.⁵²



Figure 5: Women and children waiting to enter a medical clinic in Somalia. The clinic is open 2 days each week and treats 400-500 people each day.

Another difficulty is the fact that many kinds of infections have become untreatable as a result of bacterial resistance. Medical anthropologists are concerned with the increase in rates of infectious diseases like tuberculosis and malaria that cannot be treated with many existing antibiotics. According to the World Health Organization, there are nearly 500,000 cases of drug resistant tuberculosis each year.⁵³ New research is now focused on drug resistance, as well as the social and cultural components of this resistance such as the relationship between poverty and the spread of resistant strains of bacteria.

Immunizations that can provide immunity against viral diseases have also transformed human health. The eradication of the smallpox virus in 1977 following a concerted global effort to vaccinate a large percentage of the world's population is one example of the success of this biotechnology. Before the development of the vaccine, the virus was killing 1-2 million people each year.⁵⁴ Today, vaccines exist for many of the world's most dangerous viral diseases, but providing access to vaccines remains a challenge. The polio virus has been eliminated from most of the world following several decades of near universal vaccination, but the disease has made a comeback in a handful of countries, including Afghanistan, Nigeria, and Pakistan, where weak governments, inadequate healthcare systems, or war have made vaccinating children impossible. This example highlights the global inequalities that still exist in access to basic medical care.

Because viruses have the ability to mutate and to jump between animals and people, human populations around the world also face the constant threat of new viral diseases. Influenza has been responsible for millions of deaths. In 1918, a pandemic of the H1N1 flu infected 500 million people, killing

nearly 5 percent of the human population.⁵⁵ Not all influenza strains are that deadly, but it remains a dangerous illness and one that vaccines can only partially address.⁵⁶ Each year, the strains of the influenza virus placed in the annual “flu shot” are based on predictions about the strains that will be most common. Because the virus mutates frequently and is influenced by interactions between human and animal populations, there is always uncertainty about future forms of the virus.⁵⁷

Reproductive Technologies

Today, the idea of “contraception” is linked to the technology of hormone-based birth control. “The pill” as we now know it, was not available in the United States until 1960, but attempts to both prevent or bring about pregnancy through technology date back to the earliest human communities. Techniques used to control the birthrate are an important subject for medical anthropologists because they have significant cultural implications.

Many cultures use natural forms of birth control practices to influence the spacing of births. Among the !Kung, for instance, babies are breastfed for many months or even years, which hormonally suppress fertility and decrease the number of pregnancies a woman can have in her lifetime. In Enga, New Guinea, men and women do not live with one another following a birth, another practice that increases the time between pregnancies.⁵⁸ In contrast, cultures where there are social or religious reasons for avoiding birth control, including natural birth spacing methods, have higher birth rates. In the United States, the Comstock Act passed in 1873 banned contraception and even the distribution of information about contraception.

Although the Comstock Act is a thing of the past, efforts in the United States to limit access to birth control and related medical services like abortion are ongoing. Many medical anthropologists study the ways in which access to reproductive technologies is affected by cultural values. Laury Oaks (2003) has investigated the way in which activists on both sides of the abortion debate attempt to culturally define the idea of “risk” as it relates to women’s health. She notes that in the 1990s anti-abortion activists in the United States circulated misleading medical material suggesting that abortion increases rates of breast cancer. Although this claim was medically false, it was persuasive to many people and contributed to doubts about whether abortion posed a health risk to women, a concern that strengthened efforts to limit access to the procedure.⁵⁹

Other forms of reproductive technology have emerged from the desire to increase fertility. The world of “assisted reproduction,” which includes technologies such as in vitro fertilization and surrogate pregnancy, has been the subject of many anthropological investigations. Marcia Inhorn, a medical anthropologist, has written several books about the growing popularity of in vitro fertilization in the Middle East. Her book, *The New Arab Man* (2012), explores the way in which infertility disrupts traditional notions of Arab masculinity that are based on fatherhood and she explores the ways that couples navigate conflicting cultural messages about the importance of parenthood and religious disapproval of assisted fertility.⁶⁰

CONCLUSION

As the global population becomes larger, it is increasingly challenging to address the health needs of the world’s population. Today, 1 in 8 people in the world do not have access to adequate nutrition, the most basic element of good health.⁶¹ More than half the human population lives in an urban environ-

ment where infectious diseases can spread rapidly, sparking pandemics. Many of these cities include dense concentrations of poverty and healthcare systems that are not adequate to meet demand.⁶² Globalization, a process that connects cultures through trade, tourism, and migration, contributes to the spread of pathogens that negatively affect human health and exacerbates political and economic inequalities that make the provision of healthcare more difficult.

Human health is complex and these are daunting challenges, but medical anthropologists have a unique perspective to contribute to finding solutions. Medical anthropology offers a holistic perspective on human evolutionary and biocultural adaptations as well as insights into the relationship between health and culture. As anthropologists study the ways people think about health and illness and the socioeconomic and cultural dynamics that affect the provision of health services, there is a potential to develop new methods for improving the health and quality of life for people all over the world.

Discussion Questions

1. This chapter describes several examples of diseases that result from interactions between biology and culture such as obesity. Why is it important to consider cultural factors that contribute to illness rather than placing blame on individuals? What are some other examples of illnesses that have cultural as well as biological causes?
2. Many cultures have ethno-etologies that provide explanations for illness that are not based in science. From a biomedical perspective, the non-scientific medical treatments provided in these cultures have a low likelihood of success. Despite this, people tend to believe that the treatments are working. Why do you think people tend to be satisfied with the effectiveness of the treatments they receive?
3. How does poverty influence the health of populations around the world? Do you see this in your own community? Who should be responsible for addressing health care needs in impoverished communities?

GLOSSARY

Adaptive: Traits that increase the capacity of individuals to survive and reproduce.

Biocultural evolution: Describes the interactions between biology and culture that have influenced human evolution.

Biomedical: An approach to medicine that is based on the application of insights from science, particularly biology and chemistry.

Communal healing: An approach to healing that directs the combined efforts of the community toward treating illness.

Culture-bound syndrome: An illness recognized only within a specific culture.

Emotionalistic explanation: Suggests that illnesses are caused by strong emotions such as fright, anger, or grief; this is an example of a naturalistic ethno-etiology.

Epidemiological transition: The sharp drop in mortality rates, particularly among children, that occurs in a society as a result of improved sanitation and access to healthcare.

Ethno-etiology: Cultural explanations about the underlying causes of health problems.

Ethnomedicine: The comparative study of cultural ideas about wellness, illness, and healing.

Humoral healing: An approach to healing that seeks to treat medical ailments by achieving a balance between the forces, or elements, of the body.

Maladaptive: Traits that decrease the capacity of individuals to survive and reproduce.

Medical anthropology: A distinct sub-specialty within the discipline of anthropology that investigates

human health and health care systems in comparative perspective.

Naturalistic ethno-etiology: Views disease as the result of natural forces such as cold, heat, winds, or an upset in the balance of the basic body elements.

Personalistic ethno-etiology: Views disease as the result of the actions of human or supernatural beings.

Placebo effect: A response to treatment that occurs because the person receiving the treatment *believes it will work*, not because the treatment itself is effective.

Shaman: A person who specializes in contacting the world of the spirits.

Somatic: Symptoms that are physical manifestations of emotional pain.

Zoonotic: Diseases that have origins in animals and are transmitted to humans.

ABOUT THE AUTHOR

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Notes

1. Jermone Gilbert, *Humors, Hormones, and Neurosecretions* (New York: State University of New York Press, 1962).
2. World Health Organization, "Health Impact Assessment," <http://www.who.int/hia/evidence/doh/en/>.
3. Sally McBrearty and Allison Brooks, "The Revolution That Wasn't: A New Interpretation of the Origin of Modern Humans," *Journal of Human Evolution* 39 (1999), 453-563.
4. U.S. Center for Disease Control and Prevention, "Adult Obesity Facts," <http://www.cdc.gov/obesity/data/adult.html>.
5. Marjorie G. Whiting, *A Cross Cultural Nutrition Survey* (Cambridge, MA: Harvard School of Public Health, 1968).
6. Ian A.M. Prior, "The Price of Civilization," *Nutrition Today* 6 no. 4 (1971): 2-11.
7. Steven Connor, "Deadly malaria may have risen with the spread of agriculture," *National Geographic*, http://news.nationalgeographic.com/news/2001/06/0625_wiresmalaria.html.
8. Jared Diamond, "The Arrow of Disease," *Discover Magazine*, October 1992. <http://discovermagazine.com/1992/oct/thearrowofdiseas137>.
9. World Health Organization, "Cholera," <http://www.who.int/mediacentre/factsheets/fs107/en/>.
10. George J. Armelagos and John R. Dewey, "Evolutionary Response to Human Infectious Disease," *BioScience*, 25(1970): 271-275.
11. William McNeill, *Plagues and People* (New York: Doubleday, 1976).
12. Ian Barnes, Anna Duda, Oliver Pybus, Mark G. Thomas. Ancient Urbanisation Predicts Genetic Resistance To Tuberculosis," *Evolution* 65 no. 3 (2011): 842-848.
13. George T. Lewith, *Acupuncture: Its Place in Western Medical Science* (United Kingdom: Merlin Press, 1998).
14. George M. Foster, "Disease Etiologies in Non-Western Medical Systems," *American Anthropologist* 78 no 4 (1976): 773-782.
15. *Ibid.*, 775
16. S.F. Nadel, *The Nuba: An Anthropological Study of the Hill Tribes in Kordofan* (Oxford: Oxford University Press,

- 1947), 173.
17. Foster, "Disease Etiologies in Non-Western Medical Systems," 775.
 18. A.J. Rubel, "The Epidemiology of a Folk Illness: Susto in Hispanic America," *Ethnology* 3 (1964): 268-283.
 19. Robert T. Trotter II, "Susto: The Context of Community Morbidity Patterns," *Ethnology* 21 no. 3 (1982): 215-226.
 20. Frank J. Lipp, "The Study of Disease in Relation to Culture: The Susto Complexe Among the Mixe of Oaxaco," *Dialectical Anthropology* 12 no. 4 (1987): 435-442.
 21. E.E. Evans-Pritchard, *Witchcraft, Oracles and Magic Among the Azande* (Oxford: Oxford University Press, 1937), 70.
 22. Leonard B. Glick, "Medicine as an Ethnographic Category: The Gimi of the New Guinea Highlands," *Ethnology* 6 (1967): 31-56.
 23. Elliott Mishler, "Viewpoint: Critical Perspectives on the Biomedical Model," in E. Mishler, L.A. Rhodes, S. Hauser, R. Liem, S. Osherson, and N. Waxler, eds. *Social Contexts of Health, Illness, and Patient Care* (Cambridge, UK: Cambridge University Press).
 24. Richard Katz, Megan Bieseke, and Verna St. Davis, *Healing Makes Our Hearts Happy: Spirituality and Cultural Transformation among the Kalahari Ju/'hoansi* (Rochester VS, Inner Traditions, 1982), 34.
 25. Michael Bliss, *William Osler: A Life in Medicine* (Oxford: Oxford University Press, 1999), 276.
 26. William Osler, "The Faith That Heals," *British Medical Journal* 1 (1910): 1470-1472.
 27. Cara Feinberg, "The Placebo Phenomenon," *Harvard Magazine* <http://harvardmagazine.com/2013/01/the-placebo-phenomenon>.
 28. Ted J. Kaptchuk, and Franklin G. Miller, "Placebo Effects in Medicine," *New England Journal of Medicine* 373 (2015):8-9.
 29. Robert Bud, "Antibiotics: From Germophobia to the Carefree Life and Back Again," in *Medicating Modern America: Prescription Drugs in History*, ed. Andrea Tone and Elizabeth Siegel Watkins (New York: New York University Press, 2007).
 30. H. Benson, J.A. Dusek, J.B. Sherwood, P. Lam, C.F. Bethea, and W. Carpenter, "Study of the Therapeutic Effects of Intercessory Prayer (STEP) in Cardiac Bypass Patients: A Multicenter Randomized Trial of Uncertainty and Certainty of Receiving Intercessory Prayer," *American Heart Journal* 151 (2006):934-942.
 31. National Cancer Institute, "Acupuncture," <http://www.cancer.gov/cancertopics/pdq/cam/acupuncture/health-professional/page5>.
 32. Mira Taow, "The Religious and Medicinal Uses of Cannabis in China, India, and Tibet," *Journal of Psychoactive Drugs* 13(1981): 23-24.
 33. Marsella, A. and White, G., eds. *Cultural Conceptions of Mental Health and Therapy* (Dordrecht, Netherlands: D. Reidel, 1982).
 34. Dominic T.S. Lee, Joan Kleinman, and Arthur Kleinman, "Rethinking Depression: An Ethnographic Study of the Experiences of Depression Among Chinese," *Harvard Review of Psychiatry* 15 no 1 (2007):1-8.
 35. Arthur Kleinman, *Rethinking Psychiatry: From Cultural Category to Personal Experience* (New York: The Free Press, 1988).
 36. Robert Lemelson and L.K. Suryani, "Cultural Formulation of Psychiatric Diagnoses: The Spirits, Penyakit Ngeb and the Social Suppression of Memory: A Complex Clinical Case from Bali," *Culture, Medicine and Psychiatry* 30 no. 3 (2006): 389-413.
 37. For more information about these studies, see J. Leff et al., "The International Pilot Study of Schizophrenia: Five-Year Follow-Up Findings," *Psychological Medicine* 22 (1992):131-45; A. Jablensky et al., "Schizophrenia: Manifestations, Incidence and Course in Different Cultures: A World Health Organization Ten-Country Study," *Psychological Medicine Monograph Supplement* 20(1992); N. Sartorius et al., "Early Manifestations and First-Contact Incidence of Schizophrenia in Different Cultures," *Psychological Medicine* 16 (1986):909-28.
 38. Bernice A. Pescosolido, Jack K. Martin, Sigrun Olafsdottir, J. Scott Long, Karen Kafadar, and Tait R. Medina, "The Theory of Industrial Society and Cultural Schemata: Does the 'Cultural Myth of Stigma' Underlie the WHO Schizophrenia Paradox?," *American Journal of Sociology* 121 no. 3 (2015): 783-825.
 39. Collean Barry, Victoria Bresscall, Kelly D. Brownell, and Mark Schlesinger, "Obesity Metaphors: How Beliefs about Obesity Affect Support for Public Policy," *The Milbank Quarterly* 87 (2009): 7-47.
 40. Peter Conrad and Kristen K. Barker, "The Social Construction of Illness: Key Insights and Policy Implications," *Journal of Health and Social Behavior*, 51(2010): s57-s79.

41. Peter Attia, "Is the Obesity Crisis Hiding a Bigger Problem?," *TEDMED Talks* April 2013 Retrieved from https://www.ted.com/talks/peter_attia_what_if_we_re_wrong_about_diabetes.
42. Anish P. Mahajan, Jennifer N. Sayles, Vishal A. Patel, Robert H. Remien, Daniel Ortiz, Greg Szekeres, and Thomas J. Coates, "Stigma in the HIV/AIDS Epidemic: A review of the Literature and Recommendations for the Way Forward," *AIDS* 22 supp. 2 (2008): S67-S79.
43. Elizabeth Pisani, "Sex, Drugs, & HIV: Let's Get Rational," *TED Talks* February 2010. http://www.ted.com/talks/elizabeth_pisani_sex_drugs_and_hiv_let_s_get_rational_1#t-1011824.
44. United Nations, "Poverty and AIDS: What's Really Driving the Epidemic?" <http://www.unfpa.org/conversations/facts.html>.
45. Maria Makino, Koji Tsuboi, and Lorraine Dennerstein, "Prevalence of Eating Disorders: A Comparison of Western and Non-Western Countries," *Medscape General Medicine* 6 no. 3 (2004):49.
46. Joan Jacobs Brumberg, *Fasting girls: The Emergence of Anorexia Nervosa as a Modern Disease* (Cambridge, MA: Harvard University Press, 1988).
47. Anne E. Becker, "Television, Disordered Eating, and Young Women in Fiji: Negotiating Body Image and Identity during Rapid Social Change" *Culture, Medicine and Psychiatry*, 28 no. 4 (2004):533-559.
48. Sing Lee, "Reconsidering the Status of Anorexia Nervosa as a Western Culture-Bound Syndrome," *Social Science & Medicine* 42 no. 1 (1996): 21-34.
49. L.A. Rebhun, "Swallowing Frogs: Anger and Illness in Northeast Brazil," *Medical Anthropology Quarterly* 8 no. 4 (1994):360-382.
50. *Ibid.*, 369-371
51. Robert Bud, "Antibiotics: From Germophobia to the Carefree Life and Back Again."
52. Nancy Scheper Hughes, *Death Without Weeping: The Violence of Everyday Life in Brazil* (Berkeley: University of California Press, 1989).
53. World Health Organization, "Antimicrobial Resistance," <http://www.who.int/mediacentre/factsheets/fs194/en/>.
54. David Koplow, *Smallpox: The Fight to Eradicate a Global Scourge* (Berkeley: University of California Press, 2003).
55. Jeffery K. Taubenberger, David Baltimore, Peter C. Doherty, Howard Markel, David M. Morens, Robert G. Webster, and Ian A. Wilson, "Reconstruction of the 1918 Influenza Virus: Unexpected Rewards from the Past," *mBio* 3 no. 5 (2012).
56. Jeffrey Taubenberger and David Morens, "1918 influenza: The Mother of All Pandemics," *Emerging Infectious Diseases*, 12 (2006).
57. Suzanne Clancy, "Genetics of the Influenza Virus," *Nature Education*, 1(2008): 83.
58. For more about these and other examples, see Carol P. MacCormack, *Ethnography of Fertility and Birth* (New York: Academic Press, 1982).
59. Laury Oaks, "The Social Politics of Health Risk Warning: Competing Claims about the Link between Abortion and Breast Cancer," in *Risk, Culture, and Health Inequality: Shifting Perceptions of Danger and Blame*, eds. Barbara Herr Harthorn and Laury Oaks (Westport, CT: Praeger, 2003).
60. Marcia C. Inhorn, *The New Arab Man: Emergent Masculinities, Technologies, and Islam in the Middle East* (Princeton, NJ: Princeton University Press, 2012).
61. Food and Agriculture Organization of the United Nations, "The Multiple Dimensions of Food Security," <http://www.fao.org/docrep/018/i3458e/i3458e.pdf>.
62. World Health Organization, "Urbanization and Health," *Bulletin of the World Health Organization*, 88(2010): 241-320.