

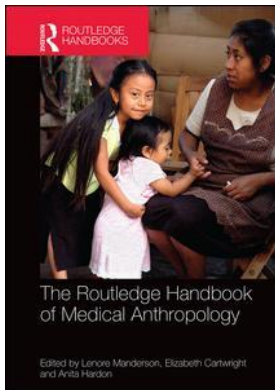
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The Routledge Handbook of Medical Anthropology

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Introduction

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Kuna Woman and Child, 2012. Kuna Yala, Panama.
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About the photograph

The Kuna have achieved what very few native peoples have been able to do: adapt to change on their own terms. When I visited Kuna Yala, I saw reminders of this ability all around me: in the way tourism into their territory was regulated, in planning how to confront the effects of global climate change, and in negotiating social change between generations. By and large, young girls choose Western clothes, often wearing shorts or jeans and t-shirts, rather than traditional dress. This image of an older Kuna woman and a young girl reminds me how generational change occurs regardless of our ability to control it. Nonetheless, societies do have the cultural tools to control the rate and extent of how change occurs, and in this control, to maintain a sense of wellbeing. Panama's Kuna are an example for other indigenous peoples adapting to a rapidly changing and modernized world.

—Mark Caicedo

Introduction

Sign Posts

*Lenore Manderson, Elizabeth Cartwright
and Anita Hardon*

It is sometimes hard to explain what an anthropologist does; it is even harder to explain ‘what *medical* anthropologists do’ as we correct assumptions that our work centers on categorizing old bones. Now, our task is more difficult than ever, and a summary descriptor—studying people’s experience of sickness and health, care seeking and care—is banal and inaccurate. Medical anthropology helps make sense of suffering as a social experience, but it does much more than this. It carries us into refugee camps, birthing centers, factories, boardrooms, gaols, rehabilitation centers and schools, across countries and between communities. And, as we describe below and throughout this volume, it is also a field of great privilege; medical anthropology takes us into the most intimate aspects of people’s lives, and the most intimate expressions of their joy, anxiety, grief and tenderness.

Let us begin by explaining who we are and how we have worked, since this is central to why we have written what we have written. This was a collaborative project, and we brought to our conception of the volume and the task of its construction our experiences as students, researchers and educators in diverse settings.

Lenore was trained in Asian studies and history in Australia, and there, she held positions as a medical anthropologist in public health and medical schools until 2013; she now lives and works in South Africa and the United States, working partly on questions on public health in Africa, partly on environment and climate change. Her earliest field research projects, as an historian and anthropologist, were in Malaysia. For most of her career, she has conducted research and trained others there, elsewhere in Southeast and East Asia, and in Australia with Indigenous, immigrant and settler Australians, on questions of infectious and non-communicable diseases, gender and sexuality, diversity and inequality. Her research students have come from and conducted their research in diverse settings throughout Australia, Asia and Africa. Her work with the Special Programme for Research and Training in Tropical Diseases (TDR) over nearly 30 years has likewise contributed extensively to her understanding of medical anthropology both theoretically and in relation to its practical application in disease control programs and in enhancing people’s access to care and improved health.

Liz trained in anthropology in the United States, after initially training and working as a nurse. Her primary work has been in the United States, particularly with Spanish-speaking immigrants,

and in Mexico, Central and South America, working on environmental health, immigration, and social justice—her students too are drawn from these areas. Her work among farmworkers in the US resulted in the creation of ‘The Hispanic Health Project’ that was located in southeast Idaho for over a decade. Through this work she refined her understanding of the value of high-quality data for community-based participatory research methods and community interventions. She now is employing these insights in her work with rural agricultural communities in the Peruvian Andes. Liz conceived and developed the course on Systematic Video Analysis for the Short Course on Research Methods held under the auspices of the National Science Foundation and the direction of Russell Bernard; this course is currently offered in an online format during summer sessions at the University of Florida, Gainesville. She is a trained videographer and has taught ethnographic filmmaking in the US, Mexico, Australia and Vietnam.

Anita was trained in medical anthropology in the Netherlands, after initially training in medical biology. She has conducted extensive fieldwork in the Philippines and elsewhere in Southeast Asia, with her graduate students drawn primarily Europe, Asia and Africa. With her colleagues Sjaak van der Geest and Susan Reynolds Whyte, she spearheaded the anthropological study of pharmaceuticals in the late 1980s. Since then she has been engaged in multi-level and multi-sited ethnographies on immunization, new reproductive technologies and AIDS medicines that have generated important ethnographic insights on the appropriation of these technologies in diverse social-cultural settings, their efficacy in everyday life, the role of social movements in their design, and the dynamics of care and policy making in their provision. She makes it a priority to communicate her research findings to patient advocates, policy makers, and public health researchers and practitioners, through and in collaboration with activist organizations.

This combined geographic and intellectual diversity—of where we studied, where we have taught, where we have undertaken field research, and the diverse backgrounds of our students—inspired us as we thought through the structure and potential uses of this volume, identified the case study authors, and wrote the chapters. Our shared vision, while providing a personal review of medical anthropology in the early twenty-first century, was to keep in focus the directions that contemporary medical anthropology was taking across space. These directions—no single pathway—are shaped by the intellectual traditions of our different continents, despite the travel of ideas between them. They are shaped too by inspirations from various other theoretical, epistemological and disciplinary conventions and concerns across the social sciences, and by medical and public health priorities in our different countries.

Current and emerging economic, political, social and environmental challenges, and the priorities of the people with whom we have worked, have further shaped the content and structure of this volume. The photographs that we have included stand alone, invitations to readers to engage and reflect (see *About the Figures*, pp. xii–xiii). The 52 case studies, from 66 authors, add polyphony to this volume, offering rich and diverse ethnographic examples of our dominant themes as they play out across geography, theoretical landscape and the political directions of contemporary medical anthropology. Around these case studies, we have woven our own texts in a shared voice.

Medical Anthropology: A Partial History

We three came to medical anthropology during a period of its vital growth, building on an earlier tradition of ethnographic enquiry into medical practices, ideas about causations of illness and symbolic healing (e.g. Polgar 1962; Rivers 1924; Rubel 1964), and emerging interest in the value of applied anthropology in contributing in practical ways to public and community health. At the time of our training and early careers, other social movements had begun to impact the focus

of the discipline; from the 1970s, political, social and epidemiological factors had converged to frame an emerging, engaged medical anthropology. The last wars against colonialism and the violent inequalities that were revealed, the Vietnam War, debates about development, political ecology and environment activism, and trade union, black, Indigenous and gay rights activism, all drew our attention to the political economics of health inequalities within countries and between nations; we gained awareness too of the ways in which race, class, sex and sexuality shaped social exclusion and poor health. French philosophy offered us particular analytic tools in this context, of how knowledge shaped access to institutions, authority, power and practice (Bourdieu 1992; Foucault 1973; 1976; 1980), and of how socioeconomic inequalities are reflected in stratified bodily practices and reproduced across generations (Bourdieu 1977; 1984). Increasingly, anthropologists and others turned to document the impact of local social structures and global relations on the health status of individuals and communities, as in other aspects of social life, including income, education and employment.

Second-wave feminism and its political arms, including the women's health movement, particularly captured our own imagination, supporting our decisions to break from sexist scripts around study and career; we were fortunate because of the number of strong women working in medical anthropology and cognate fields who had worn the path for us (Benedict 1946; Firth 1943; Geertz 1961; Mead 1928; Powdermaker 1966). In the context of health advocacy and feminist politics, many medical anthropologists turned to questions of gender and the silence around women's experiences, and particularly began to write on reproductive health. For feminist anthropologists, this provided a way to trouble questions of nature and culture, the associations of women's social status and biology, and the power of gender relations (e.g. Jordan and Davis-Floyd 1974; MacCormack 1982; MacCormack and Strathern 1980; Rosaldo and Lamphere 1974). It provided an avenue to bring women from the periphery to the center, and in doing so, to interrogate how biomedical regimes have changed women's experiences in different settings and to explore the role of women healers in their reproductive and wider lives. The earliest works on reproductive health were partly inspired correctives to a view of women's lives, bodies and domestic domains as insignificant, and in medical research, to their undisguised omission. Almost half a century later, an impressive corpus of work exists on conception and (in)fertility, contraception and abortion, pregnancy, birth and delivery, the postpartum and breastfeeding, and menstruation and menopause (see, for example, Davis-Floyd 1992; Ginsburg and Rapp 1995; Inhorn 2002; Lock 1993; Martin 1987). These works are centrally about the subjugation of women's bodies and functions to particular discourses of gender and regimes of control. We return to some of these issues at various points in this volume—in Sebastian Mohr's case study of sperm and its donation in Chapter 3; in a number of case studies of genetics and reproduction in Chapter 14; and in Eugenia Georges's and Robbie Davis-Floyd's discussion of midwifery in Chapter 15, for example.

In the late twentieth and early twenty-first centuries, a series of events in international health, involving multilateral agencies primarily, influenced how the field of medical anthropology was to develop. The Declaration of Alma Ata in 1978 (International Conference on Primary Health Care 1978) set out a vision that sought to improve the delivery of health care services, and so improve health in poor countries by redistributing authority from an urban and professional elite to local communities. Ideas about the importance of community participation, identified as critical for effective primary health care to ensure 'health for all,' fed directly into health policy and planning. The Declaration provided a particular role for anthropologists; in operationalizing its principles to ensure effective and sustainable health care, increasing attention was paid to the local acceptability of health programs and services, the involvement of community volunteers to build health infrastructure and extend primary care, and the mechanisms to support populations

to use the medical services that were available in their localities. Medical anthropologists had experience with the communities in question.

Arthur Kleinman and his colleagues (1980; Kleinman et al. 1978), in their early work on explanatory models of illness, provided us with a tool that was clear and accessible to medical and public health professionals, enabling us to demonstrate cultural variations in the experiences, diagnosis and treatment of illness. The elegance of this model, and its appeal to health researchers, led a number of medical anthropologists to then develop manuals for rapid assessments, dating from the foundational work of Susan Scrimshaw and Elena Hurtado (1987) and parallel approaches in agriculture and community development (Chambers 1983). Despite criticisms that rapid methods produced superficial findings and that applied anthropology reinforces biomedical hegemony (Manderson and Aaby 1992), these manuals were important for anthropologists and others working in international health programs and in interdisciplinary teams, because the focused data so generated facilitated the translation of anthropology, such that interventions might take account of local understandings of illness, the circumstances that pattern risk, and the community structures that might support prevention (see, among other examples Agyepong et al. 1995; Herman and Bentley 1993; Pelto and Armar-Klemesu 2010; Pelto and Gove 1992).

It was HIV and its lethal consequence as AIDS, however, that most powerfully stimulated medical anthropology. Four years after the Alma Ata Conference, the first case was diagnosed. The subsequent HIV pandemic had singular impact on shaping medical anthropology: the only possible preventions until the successful development and roll-out of anti-retroviral therapy required detailed and nuanced knowledge especially of sexual behavior and injecting drugs—of what people did, in what contexts, and why. Anthropology, as we will demonstrate in Chapter 4, was critical to understanding the pathways of transmission and prevention, and the stigma derived from associating particular marginalized populations with the risks of infection, illness and death (Hardon and Moyer 2014).

Interplay

Over the past half-century, significant epidemiological changes have precipitated changes in health policies and programs at local and global levels, and in the work that medical anthropologists do. Today, because of early diagnosis and effective pharmaceutical interventions, increasingly infectious as well as non-communicable diseases are of long-term duration, as illustrated by HIV and as we discuss in Chapter 7. At the same time, various chronic conditions are proving to be caused by infectious agents: chronic gastritis and gastric ulcers, and possibly other ulcers, long thought to be due to diet, stress or personality, have been shown to be caused by bacteria; cervical and some other cancers are now known to be caused by human papilloma virus (HPV). However, the vaccines and drugs developed in the wake of this knowledge are not a panacea. Pathogens that cause or contribute to many diseases mutate to resist pharmaceutical interventions, often more quickly than new drugs can be developed. Anopheles mosquitos that transmit malaria rapidly develop resistance to insecticides and change their behavior in response to preventive measures, and the parasite that causes malaria has been equally efficient at developing drug resistance. In addition, as we illustrate in this volume, many people have poor access to health care, and health systems problems limit the effectiveness of interventions for both infectious diseases and chronic non-communicable diseases.

The 'social determinants of health' is one framework used to appreciate how social, cultural and economic environments shape health and wellbeing, disability and disadvantage. The framework, as developed by Richard Wilkinson and Michael Marmot (1999), drew on social, economic and health data from the United Kingdom. In 2005, the WHO established the Commission on

the Social Determinants of Health, chaired by Michael Marmot, to examine how social inequalities and injustices compromise people's health, wellbeing and life outcomes (World Health Organization 2008). The original work and the Commission's report both detail the role on health and illness of social, economic, regional and political variables, including food, housing and employment security, education, the reach of health services, early life, childhood development and stress. Discrimination and marginalization from ethnicity, faith, race and gender determine the presence or absence of the preconditions of good health. The absence of social support, various addictions and social isolation create further disadvantages that, if unaddressed, increase the risk of health problems, interfere with treatment, narrow the ability of people to participate in society, and result in premature death. Material conditions, social meanings, and lived experience produce disability-based disadvantage and wellbeing, with the interconnections and intersections of structural and behavioral factors compounding their effects on physical and psychological health. But how do these multiple determinants fit together?

Medical anthropology provides a complex analytic take on the relationships of social structure and context on health. At a broad global level, we have been concerned to illustrate how globalization, industrialization and urbanization reproduce social relations that institutionalize poverty and result in poor health. Contemporary life circumstances in high-, middle- and low-income settings are all powerfully shaped by globalization. Merrill Singer and colleagues (2014; Singer et al. 2011) have inserted into this the interactions of biology and society. The resultant 'syndemic' approach has extended our understanding of disease concentrations and interactions, with social conditions shaping disease clustering and impacting on outcomes concurrent with disease interactions at biological and immunological levels. Examples of syndemics where social, economic and environmental factors interact etiologically and synergistically include HIV and sexual transmitted infections, HIV and diabetes, and HIV and tuberculosis. HIV and food insecurity too, are syndemic, because women living under conditions of food insecurity may be at greater risk of exposure to HIV (through transactional sex, for instance); people with HIV have higher nutritional requirements in terms of both protein and calories; and malnutrition expedites the progression of HIV to AIDS. This understanding of complex recurrent interactions occurs also with diabetes and tuberculosis (Singer et al. 2011: 169–170), for example, and for diabetes and depression among immigrant women (Mendenhall 2012). In such cases, poor health and associated disabilities reduce employment options, and contribute to chronic life difficulties, discrimination, demoralization and social exclusion. In this volume, various case studies explore the synergies of health and social life in different settings, inviting the reader to reflect on comorbidity, syndemics and the persistent interplay of poverty and ill health.

New Fields

Anthropological interest in local and small-scale communities, and sympathy for those subordinate in relationships of power and authority, has influenced the direction of contemporary medical anthropologists, but various researchers in the field, in the global North and South, have turned their attention from local communities and the individuals and households that comprise them, to their health providers, habitual environments and networks—primary health clinics, marketplaces, and shamans, for instance, as well as surgeons, hospitals, training institutions and boardrooms. Many of us in anthropology, at the same time, have been inspired by critical political theory, cultural studies, and science and technology studies, among other intellectual threads, and reflecting this, our work has extended well beyond the village and its traditional healers, to encompass the body in space (both geographical and aeronautical, see Chapter 15), to nanotechnology and prosthetics, pathology laboratories and tissue banks, investment strategies

and medical markets, restorative justice and truth and reconciliation commissions. Where medical anthropology in the past was often criticized by sociocultural anthropologists for being too applied, nowadays it is recognized that medical anthropologists are at the forefront of the discipline, moving anthropology to think beyond dichotomies such as those between ethnomedicine and modern biomedicine, medically defined disease and culturally constructed illness, body and mind, and social and biological anthropology. The case studies in this volume reflect this intellectual and empirical richness.

Reading the Volume

Although this volume can be read linearly, this need not be so; we have not conceptualized it in structure or use as static or prescriptive. The case studies, for example, have been selected to fit with the themes of the chapters in which they are situated. To a degree we have written around these cases to highlight how anthropologists have engaged with the issues at stake in the past and to explore the particular turns in medical anthropology today. But we also took seriously the challenge to design a handbook as a compendium that might be played with by teachers and students. The volume could be used for a full semester course, although not all semesters run for 16 weeks, and so already, the decision may need to be taken about what to include, what to drop. Further, we have organized the chapters and included particular cases following one logic—from life course and kinship in the earlier chapters, to the globalization and politics of health and illness, with respect to contemporary crises that impact health and the quality of people's lives and in relation to the distribution of technologies, products and people. But this is only one approach, and there are other ways to use the material. It is possible, for instance, to work across chapters, drawing on the case studies of ethnographies from Africa, for instance, or from high-income, high-technology settings, or as they touch on particular health issues (reproduction, for instance, or aging).

We have shied away from encyclopedic coverage; it is neither possible to do this in a field so rapidly expanding, nor to do so in a volume of this length. In selecting the cases, we were interested in illustrating particular concepts and themes, rather than diseases. You, the readers, will find other ways of curating the case studies and will bring other perspectives to the fields that we have included. We now briefly introduce these.

The first substantive chapter, following, is about children, and their sicknesses and suffering. Ironically, many medical anthropologists have attended to reproduction, infertility and delivery practices, and this is reflected in the case studies in a number of chapters. In contrast, medical anthropology has paid far less attention to children, suggesting that, as ethnographers and theorists, we privilege formal communication skills and follow power, even as we resist it (see, for example, Levine and New 2008; Montgomery 2008). Children are especially powerless; in sickness, they are vulnerable to and dependent on their parents and healers to find patterns in frank signs of sickness, pain or discomfort, or in the ambiguities of their behavior. Parents' and children's lives are entwined, but where power and communication are concentrated, as occurs in a medical clinic, parents often speak for and represent their children. With the case studies to guide us, we ask how parents deal with children who are ill, have limited capabilities, or are in other ways suffering. We ask how young people experience illness and disease, negotiate therapeutic demands, and articulate their disapprobation and resistance, opening up the possibility of a stronger research agenda with them.

In Chapter 3, we place medical anthropology's approach to the study of sexuality within a larger context of sexuality studies. Early 'sexology' documented 'normal' sexual behavior; psychiatric definitions classified homosexuality as 'deviant.' Anthropology in contrast has approached

sexuality as something both more culture-specific and fluid. Influenced by the scholarship and activism of feminist and queer politics, anthropologists have shown that gender and sexuality intersect with other notions of difference, demonstrating the problem of assuming the universality of Northern biomedical and social concepts of homosexuality and transgender (Jacobs et al. 1997). Societies have unique ways of understanding and accommodating various presentations of gender and diverse sexual practices, and in this context, we consider how people innovate with medical technologies related to sexuality, such as contraception and disease protection, and those related to constructions of masculinity (see Manderson 2012). The refusal or reluctance of some people to use condoms to prevent HIV, for example, has provoked many anthropologists to ask: Who uses contraception, and for what reasons? Understanding the relationship of fertility to status, and contraception to distrust, medical anthropologists have sought to broaden understandings of sexual health.

In Chapter 4, we consider how medical anthropologists have approached the study of HIV. Now that people are living longer as a result of antiretroviral drug regimens and the wider availability of these drugs, HIV infection is less likely to be a near-certain death sentence. Living with HIV brings its own challenges, however, changing how people relate to health care systems, their partners and families, their communities, and others similarly afflicted. Noting the impact of the concept of ‘biosocialities’ (Rabinow 1996), in this chapter we discuss some of the forms of sociality that have arisen in the ‘era of treatment’ and consider how treatment protocols that originate in highly industrialized settings travel through global health interventions. Documenting problems of access to treatment, medical anthropologists have been able to show that antiretroviral drug protocols impose a specific form of biopower (Foucault 1976) by mandating that patients follow moralized codes of behavior. Norms surrounding treatment programs originating in the United States and Western Europe—specifically about ‘coming out’ and ‘disclosure’—have settled uneasily in other countries, where secrecy might instead be a way of showing respect and compassion (Manderson et al. 2015). At the same time, the continued real suffering of people infected with HIV has had wider impact on families, particularly as elderly grandparents take on the task of providing care for orphaned children. The persistence of stigma against people living with HIV, and their families, and resistance to disclosure, makes clear that much work needs to be done by both medical anthropologists and activists (Squire 2015).

In Chapter 5 we turn to ‘stress,’ a term which is used in everyday speech and in psychological frameworks to describe a feeling of being overwhelmed, from being too busy to having too few resources. But medical anthropologists have identified that people understand, enact and speak about stress in quite varied ways, drawing on different symptoms, etiologies and responses for distress. In this chapter, we look at some of the ways that people understand stress, such as the Latin American experience of *nervios* or the Indonesian feeling of *pusing*. People use specific idioms of distress to describe and explain the etiology and physical and emotional dimensions of these experiences (Nichter 2010). Depending on local understandings, effective treatment might involve taking drugs, seeing a spiritual healer, or talking with a counselor or a psychotherapist. In some cases, as in Japan, receiving a diagnosis of depression may help to validate experiences of socioeconomic hardship. Anthropologists relate these particular constructs of illness and stress to larger societal structures that engender social and economic suffering. Alcohol, tobacco and illicit drugs are some of the ways that people use to alleviate stress, and anthropologists have studied how corporate marketing seeks to capitalize on people’s desire to escape or to cope. In medical anthropology, studying stress may lead to other insights—about economic precarity, powerlessness, workplace exploitation, inequality, performances of masculinity and femininity and more.

In Chapter 6, we focus on how the body is used as a site of resistance and rebellion against individual, social and cultural norms. Anthropology has a long history of describing resistances

of various kinds, and bodily resistances play an important role in that intellectual trajectory. In the most primal of senses, using the body as a site of resistance is one of the strongest acts that an individual can make. To risk one's health and wellbeing, as oftentimes is the case, to make a statement—through a hunger protest, ingesting a dangerous substance, self-harm, or refusing a blood transfusion or other medical treatment, for example—can call attention to injustice, religious difference, personal pain or any number of highly charged issues. Using the cases in this chapter, we think through how acts of resistance vary, how they are often logical on one level yet not on another (Willis 1977), and how resistances are carried out in direct opposition to the established institutions and bureaucracies that reinforce biopower. We explore case studies that describe the promotion and appeal of smoking, or what it is like to starve one's self to the point of near death, and we question the role of bureaucracies in the 'complexification' of daily life (Gupta 2012).

In Chapter 7, we consider the chronicity of both infectious and chronic non-communicable diseases and degenerative conditions, the impact of this on social life, and the variability of outcomes depending on social determinants (Manderson and Smith-Morris 2010). Many health problems are of long duration; in cases such as Chagas disease and onchocerciasis, the full impact of parasitic infection—heart disease and blindness, respectively—may not be apparent for decades. The symptoms, the development of complications, and interactions with other diseases may be able to be controlled through medication or through other interventions, some technical—hip and knee replacements, pacemakers and laser surgery, for example—and some behavioral, as occurs with changes in diet. We note how governments, research scientists and industry have approached the prevention or control of these conditions, and consider the viability of these approaches in relation to different understandings of risk, vulnerability and disability.

We move, in Chapter 8, to the idea of caring. Caring for one another, especially in the transitions of birth, death, serious illness and injury, is an essential part of what we do as humans and what we study as medical anthropologists. We first think through the behavioral acts that surround caring: How is care actually constituted in different settings and who, or what in the new cyborgified world, carries out this care? Our lives are lived with and through technology now more than might have been imagined even only a few decades ago. Humans, ever adaptable and ingenious, quickly integrate friendships and medical consultations into their daily routines via their laptops and mobiles, barely missing a step as they voraciously consume personal communication devices that are ever smaller and ever smarter. In our case studies, we illustrate how medical decisions are made by families spread out across the globe, and we see new forms of sociality established via caregivers, patients and practitioners who are linked through telemedicine and home monitoring systems of 'care.' Patients become their own advocates as they are able to access state-of-the-art medical information; they challenge their practitioners; and practitioners in turn increasingly tell patients to "look it up on the Internet and get back to me if you have questions." In this brave new world of caring, smart houses check in on grandma to see if she's moving around as she should and set off alarms if she's not. Our focus here is on physical care, emotional care and how humans are always "tinkering," as Annemarie Mol and her colleagues (2010) describe it; people find myriad ways of fulfilling this most fundamental and emotionally engaging of life's chores.

In Chapter 9, we turn to the end of life, in a broad sense—to people who are frail and sometimes confused, and to how others interpret and respond to debility, functional impediments and confusion. We consider also the ethics of truth telling and the difficulties that family members face when they must acknowledge that life is finite and so must make decisions that are, for them, ethical and honorable. In the global North, decisions about the care of people in extreme old age, often without the capacity to communicate themselves, are informed by conventions and evolving ideas about the right to know one's diagnosis and prognosis, quality of life, living wills,

advanced care directives and palliative care (Kaufman 2005). Globally, people tip toe through this minefield as they try to ensure the best possible care and least suffering for a loved one in advanced age. People do their best, although sometimes to no avail, to protect the dignity of those who are dying and to create a gentle and safe departure for loved ones suffering a terminal illness or the increased dilution of capability and blunting of comprehension. Life outcomes provide empirical examples for people to think through and frame local and global ethics. Death is painful for those left behind, and everywhere, as we explain, its rituals exist to support the bereaved as they make sense of their loss. We conclude this chapter with a case study of undertakers in Singapore, allowing us to reflect on the kinds of work that people do, globally, in order to manage death and the dead.

Anthropologists have long been interested both in the pharmacopea of individual healers and particular medical traditions, and the ‘medicalization’ of everyday life and the use of products to effect this. Various health concerns have become ‘conditions’ requiring treatment via surgery or, usually, with medication. In Chapter 10, we examine the movement of medicines. Beyond doctors’ prescriptions, synthetic drugs and natural remedies flow in a variety of ways, including through pharmaceutical promotion, small business ventures, off-label use, and informal and illegal trade. By tracing medicines and seeing how they can follow pathways never intended by doctors, regulators or commercial interests, medical anthropologists are able to capture the complexities of the marketplace, its local variations and global influences (Nordstrom 2007). Despite the power of the pharmaceutical industry, people consume medicines according to their own interests and based on their own reasoning. Beyond the global pharmaceutical industry, many smaller actors have an economic interest in the flow of medicines. They include those who mix ingredients for herbal supplements, both home made and manufactured. They include the corner market stall that sells cosmetic products as remedies or that makes small packets of prescription medicine and vitamins; the informal street dealers of drugs with off-label uses; the local pharmacies that compound tailored medications for individuals. Medical anthropologists are engaged in studying the regulations that govern many of these corners of the medicine market, how people circumvent such policies, and for what reasons.

In Chapter 11, we step back and provide a very anthropological account of health and healing within the Anthropocene, a term defined by Webster’s dictionary as “the period of time during which human activities have had an environmental impact on the Earth regarded as constituting a distinct geological age.” We trouble that definition as we move through the chapter, questioning how best to conceptualize and think about this, our present, age. We use the term *Anthropocene* to highlight the importance of the environment as an integral component of health and wellbeing, and to locate medical anthropology within the larger social science literature surrounding this topic (Latour 1999). We use the term too to engage with the cutting edge, wide-opened thinking that we must have in order for humans and other creatures to survive our current, deeply extractive and destructive ways of being on the planet (Haraway 2015). As a touchstone of sanity, we draw on the early works of anthropologists, starting in the late nineteenth century, who documented Indigenous groups living and thriving in various more or less pristine environments. The old ways of curing using the plants and animals, things inert and things spiritual in the environment, is our starting point as we move into the sullied environment of the present. Recent human history—imperialism and colonization, industrialization and globalization—has been driven by the exploitation of the environment, with little attention to the impact of this appropriation on the health of people immediately or in the long term. Our case studies take us to Indigenous communities dealing with climate change in the Arctic and people suffering from air and other pollutions in Italy. We then move to the ravages of Hurricane Katrina and what Merrill Singer (2009) has referred to as the ‘pluralea’ of environmental, social and biological threats that come

with these mega-disasters. These threats—and the environment itself—are changing in profound ways, shaping the very foundations of our existence on this planet and reshaping the planet itself.

In Chapter 12, we turn to the experiences of growing numbers of people who seek care across international borders, either through volition or necessity. We frame this chapter within the idea of the quest for therapy, as described by Janzen (1978) many years ago. In this chapter, we describe new quests. These include quests for treatments available in the places where people reside, where travel is motivated because people lack health insurance, and so simply cannot meet the costs of basic interventions such as dental surgery, a hearing aid or a pacemaker. Others pursue quests for medications and access to medical personnel across international boundaries, again because of cost at home. Still others live without legal residency papers in countries far from 'home,' and can only access medical care through quests abroad.

People migrate for many reasons: avoiding civil or inter-country war is only one reason. Others flee because of persecution or its threat for personal reasons—sexual preference or religious affiliation for instance, or because their life options are capped because of ethnicity or gender. In Chapter 13, however, we turn specifically to the experiences of war and civil violence, and the scars these leave on soldiers and civilians, however engaged. A century after the 'great war'—World War One—and the trail of violence that stretched from Papua New Guinea to the Middle East and North Africa to Europe—the idiom of 'lest we forget' seems ironic; we have witnessed and still live in a time of unspeakably violent wars; of the continued fall-out from past wars, including on the health of new generations; of nations consistently worrying over further engagement in yet another place; and of the indelible damage of being at war, either as a civilian or as a warrior. The case studies capture the emotional density and political and logistic complexities of these issues: the dilemmas of providing health care in a militarized environment; the psychological scars of soldiers; the indelible traumas experienced by civilians; the search for the remains of people lost in the horror of past conflict; and the confusion of soldiers as they try to reconcile killing with a personal ethics of the preservation of life (Sørensen 2015). Anthropologists have been involved in the past in exhumations and determination of cause of death; in one case study, Rachel Carmen Cesar returns specifically to this question to address why exhumation matters. The case study authors all also address the impact on the minds of those who fought, were brutalized, fled or were left behind in the shadows of devastation.

Beginning with a history of the gene, Chapter 14 takes us into the future. Here we examine how genetic data and genetic testing have become sites of public concern as well as anthropological study. Medical anthropologists have researched how people come to form new social groupings (i.e. biosocialities, Rabinow 1996), based on their knowledge of having a certain disease or risk of disease. Notions of uncertainty and risk play a significant role in how people conceive of their options and possibilities. Such genomic information also shapes how technology and science seek to tailor treatment to individual circumstances. Anthropologists have shown how notions of risk can make people targets for corporate marketing, as companies promote genetic testing and prey on people's fears (Rapp 2000). Studies have also focused on the understandings of kinship that emerge in relation to genomics, as families incorporate new genetic information into their notions of relatedness and resemblance, to greater and lesser degrees (Finkler 2000; Taussig 2009; Taussig et al. 2001). Looking at the practices of scientists has also been a fruitful avenue for medical anthropologists, not only in genomic medicine but also in relation to synthetic biology, epigenetics and nanotechnology. The avenues of research and experimentation undertaken in these areas open up many social and ethical questions that are important lines of inquiry for medical anthropologists.

The final chapter with case studies focuses on how biomedicine travels across the globe by humanitarian brigades, by teaching and re-teaching techniques and protocols, and by market

demand and government-implemented programs. We question what happens to ‘biomedicine’ when it is dropped, sometimes it seems in a cavalier fashion, onto the least accepting of soils. Without the proper tools and medications, systems of education and patient surveillance, without even the basic administrative technologies to ensure the ability to track patients, biomedicine loses a good deal of its efficacy and power. The lead case study in Chapter 15 demonstrates the ways in which protocols of a particular sub-field of medicine, obstetrics, are challenged by notions of natural birthing—both the original idea and its critique flowing from the global North to the global South, and contrast this with the introduction of IVF technology in Africa. We then critically parse how global surgery is prioritized, or not, within the powerful institutions of academe that produce it in the US and other resource-rich countries, and we chart the course of the ebb and flow of biomedicine into West Africa via the 2014 outbreak of the Ebola virus. We conclude with the imperative of providing care where people are suffering, and so as Peter Redfield illustrates, the necessary continued stop-gap of emergency aid and international humanitarian relief.

We conclude by reflecting on the challenges for medical anthropologists in the decades to come. We revisit a number of critical areas explored in earlier chapters, extending our discussions of involuntary migration and its health effects on adult and children, reflect on zoonotic infections and climate change, and discuss how new biomedical technologies and new discoveries in medical research are providing us with new areas for new research. We encourage medical anthropologists to rethink the complex connections between body and mind, and people and the societies in which they live. We draw attention also to the need for anthropologists to engage in reflexive dialogues with biomedical and other scientists who are increasingly acknowledging the importance of local biologies and the role of environment in people’s health.

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