

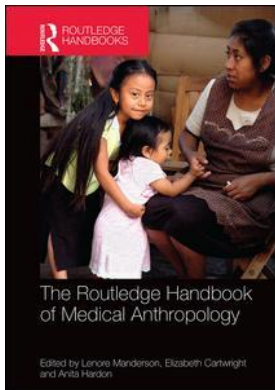
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## The Routledge Handbook of Medical Anthropology

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### Vital Signs

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Kinshasa Women's Collective, 2011. Bumbu, Kinshasa, Democratic Republic of the Congo.  
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### *About the photograph*

*In the fall of 2011 and early winter 2012, I spent time in the DRC with a local NGO. I had three objectives: observing the national election, as an international election observer; tutoring children who had experienced interruptions in schooling; and helping implement AIDS and mental health group interventions with women and children affected by ongoing genocide. Maria, pictured here, was a beneficiary of the community reconciliation program in Kinshasa. Now 25, she was displaced and unaccompanied from the eastern DRC at the age of eight. Interventions must often facilitate socio-economic opportunity in addition to counseling, medicines or psychoeducation. Our NGOs collective offers training for women to learn a trade, so that they can exit livelihoods as prostitutes on the streets. Maria reflects: J'ai plus personne dans ma vie. Cette collective est devenue comme famille ("I have no-one left anymore in my life. This collective has become my new home").*

—Athena Madan

## Vital Signs

### Medical Anthropology in the Twenty-first Century

*Lenore Manderson, Anita Hardon  
and Elizabeth Cartwright*

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In introducing this volume, we linked the framing and maturing of medical anthropology to social and political movements that gained momentum worldwide in the 1960s and 1970s. Since then, medical anthropologists have continued to engage with and be inspired by social movements, as well as by political changes, new developments in biomedicine, and debates in public health. While taking on insistent and emerging questions in policy and practice and pursuing these in different local settings, we have increasingly extended beyond the conventional settings of villages and small towns. We have grown increasingly comfortable working with and within organizations and agencies concerned with health, troubling national and multilateral policies and programs with our own knowledge of local biologies and globalized political economies. And as we have pushed into these wider arenas of health, we have turned, too, to the micro-spheres of laboratories and hospital spaces, asking both what anthropology adds to an understanding of biology and medicine, and what a different lens—one that includes material as well as human actors—contributes to ideas of the body, health and disease, healing and care. The medical anthropology of the present is very different from the discipline in which we engaged three to four decades ago.

Some of the theories and ethnographic practices of twentieth-century medical anthropology remain important and compelling; other new questions and approaches have emerged to shape what we do, how and where; the combination of the two explain the vitality of the discipline today. Feminist activism and feminist anthropology in particular have had significant effect on the discipline, supporting both its directions of enquiry (in relation to pregnancy and childbirth, for instance) and its theory and analysis. We have established the ways in which disease is gendered as a result of the differential power that determines disease, access to resources and so health outcomes.

Globally, gender hierarchies continue to disadvantage women. Women still lack the autonomy to make their own decisions about their health. The photograph by Mark Nichter, the preface to Chapter 8, depicts a woman using a cell phone to gain her husband's permission to proceed with treatment for a chronic ulcer, and to explain to him the costs that might be involved. The woman has Buruli ulcer, an infectious bacterial infection which, untreated, will cause certain

disfigurement and debility. Yet it is possible that the cost will be ‘too high’ from her husband’s point of view. Women continue too, worldwide, to have less access to: food and so have compromised nutritional status; preventive health technologies such as bed nets to protect against malaria; transport to medical services; and the right to receive care if the provider is male. The majority of people subject to sexual assault and intimate partner violence are women. Women continue to receive less education and receive lower remuneration for their work, and so, more often than men, they live with their children in poverty. In these respects, the social impact of gender is clear. But we know far less of how sex shapes the onset and course of many diseases biologically, and so our capacity as anthropologists to tease out the synergies of the biological and social is necessarily fragmentary.

Our advances in exploring the intersections of class, age, race, disability, ethnicity and sexuality, among other social divisions, while avoiding tendencies to essentialize these ‘variables,’ is a continuing task in relation to the interconnections of social conditions and ill health, as one disease complicates, compounds and augurs in new diseases and other bodily conditions. In this volume, several case study authors (Dedding, Smith–Morris, Wainwright, Warren) write directly or indirectly of diabetes and its impact. Diabetes is a perfect example of these refractions and synergies, underpinning a constellation of conditions which, at worst, might include: obesity and associated immobility; cardiovascular disease; kidney disease; impaired vision; peripheral neuropathy and amputation; associated depression and death. Heading off this bleak outcome, people are asked—encouraged is too gentle a term for the imperative register of clinicians in this context—to lose weight, eat well and exercise regularly, without regard to the feasibility of this for people who are cash, time and resource poor.

As we have illustrated, people also take drugs to abate symptoms and head off complications. In Chapter 10, we drew attention to how medicine is a lucrative and ever-expanding market. So are other technologies of medicine, and in this context, medical anthropologists have increasingly turned to study how markets are made, products circulate and are used, and fortunes are built in global health (Erikson 2015). In 2015, there is in particular growing enthusiasm for the capacity of mobile devices to deliver ‘m-health.’ Anyone with a cell phone, regardless of its capacity, can be reminded by SMS of the need to renew a prescription, of the timing of dental or medical appointments, or of infant immunization schedules, or can receive support as a new mother or as a person living with HIV. Smartphones and tablets do more than this, though, as we described in Chapters 8 and 15. They provide the ‘engines’ for medical devices such as ultrasound sensors, blood glucose meters and blood pressure monitors for use by health providers and increasingly their patients. Digital stethoscopes are being developed (some might ask why this has taken so long); glasses prescriptions have been simplified using a NETRA (Near-Eye Tool for Refractive Assessment) device; doctors are able to receive, on their phones or tablets, the MRI and X-ray images from the machine that took them. Methods for detecting particular conditions—cancers and STDs—using such accessible technologies—are being developed as we write. Nanotechnology, solar cells, lithium batteries and the like are enabling affordable technology with two motivations: first, the imperative to provide high-quality diagnostics and care in much of the world which, until now, has had neither the services nor resources; and second, the lucrativeness of this potentially ever-expanding market.

Since the introduction of Internet and the growing use of cell phones, there has been considerable enthusiasm for e-health—medical informatics and the wider use of Internet resources for information and for communication—and more recently, m-health. Yet there are still basic shortcomings that impact on health systems and on timely and quality care. There remains a powerful digital divide, and so there is an unrealized promise of e-health to bridge inequities of health between and within countries where there remain substantial differences in health

status between people who live in rural and urban areas. In poorer countries, there are still also shortcomings in the most basic data collection, analysis and transfer, inhibiting the operation of health services at local levels (such as primary health care centers) and nationally, where data are essential for strategic planning, the procurement of drugs and other materials, and the training and placement of health and medical staff. Deaths, for example, are still not always recorded, or are recorded without cause, or are attributed to proximate cause—the ever-ubiquitous ‘cardiac arrest’ or ‘old age.’ Perinatal and infant deaths, with or without cause, are even less likely to be reported for both technical and social reasons. What is counted, who are counted, and how this information is used, are critical matters that affect identities, governance and everyday experiences (Sangaramoorthy and Benton 2012).

Between gender—an old theme, no less urgent now—and new technologies of health, an old theme in new forms, there are vast areas where medical anthropology expertise is needed. Below, we reflect on areas which trouble or engage us as medical anthropologists, and as a way of guessing the directions we might take in the twenty-first century.

### Asylum Seeking and Detention

In writing on global quests for care (Chapter 12) and on war and violence (Chapter 13), we referred to the dynamics of displacement in the twenty-first century as a result of economic crises, human rights violations and war. As we write, this is a matter of urgency. Thousands of people risk their lives as they try to navigate from North Africa to Europe, most often first to Italy and Greece, then on to Germany and the Nordic countries; many thousands are being smuggled in and must find a way to live under the radar of authorities. The crisis in the EU is evolving at the moment and demonstrates how, in the presences of increasing numbers of refugees, the hospitality of receiving countries changes from welcoming to uncertain and then to hostile. Thousands more risk their lives to travel to Australia by boat too. Not all of these migrants survive the journey, but many who do are interned, imprisoned in countries that they imagined would both acknowledge their human rights and provide them with a safe haven. Many countries have adopted strict border control and migration-related detention to prevent undocumented migrants from making asylum claims (Fazel et al. 2014). And in the United States, presidential candidate Donald Trump called for the deportation of peoples living and working without papers, and for the end of automatic citizenship for children born of non-nationals in the US (Haddon 2015).

Research on people’s health and wellbeing has focused on open refugee camps, where access for researchers is difficult but not impossible. Access is far harder in detention camps, and there are few opportunities for medical anthropological research. These camps provide people, usually, with health services, including potable water and sanitation, basic obstetric care, vaccination coverage, and treatment for acute infections. But many are overcrowded and insanitary, food and fuel are limited, shelter is rudimentary, and medical staff, faculties and drugs inadequate. Disease control and prevention are barely adequate and most camps lack diagnostic capacity and have problems in the supply of drugs and other materials. Infectious diseases are transmitted as people travel and as a result of the density and poor sanitation of many camps. People’s physical health is compromised too from pre-existing chronic conditions and those that develop as populations in such camps age. Women and their children, people subject to sexual violence including within camps, and people who have experienced torture and trauma (Silverman and Nethery 2015), are generally poorly served. Livelihood activities may not be possible, and in this context of constraint and boredom, people’s health is compromised. Pre-existing divisions continue in camps, and, as Matthew Wilhelm-Solomon (2013) describes, camp regimens can exacerbate social exclusion

even as they seek to empower people. Deprivation, isolation and interpersonal violence, and the lack of clarity about the processes of review and time that might be spent in camps, further contribute to depression and anxiety (McGuire and Martin 2007). These health costs are accumulative, and their effects continue well after resettlement or safe repatriation, reminding us of the chronic nature of the toll exacted on them.

While in some camps, residents (and anthropologists and others) are able to come and go, growing numbers of people are forcibly detained by the governments of destination countries and cannot leave; this is the case in Australia. Here, ‘unauthorized arrivals’ are detained in remote detention facilities for between two to seven years, but in practice indefinitely (Australia 2008). Those who are apprehended and incarcerated are without exception at risk of poor mental health. Their loss of agency, mobility and control deprives them of the possibility of a future for themselves and their families, leading to a compounding of trauma, depression and anxiety, and consequent behavioral disturbances, rioting, self-harm, drug misuse and high levels of suicidal attempts and success. The profound negative impacts on health and wellbeing of such incarcerations everywhere are reflected by intermittent reports of riots, depression, self-harm, interpersonal conflict and violence, sexual violence and drug trafficking (Nethery and Silverman 2015). Asylum seekers detained at the offshore processing facility on the small South Pacific Island of Nauru, for example, live in tents in hot, overcrowded conditions, with limited access to clean water, showers and toilets, dependent on airlifts of both food and water.

In Chapter 2, we wrote of the inattention to children as the subject of ethnographic enquiry. This inattention is true in every context: ‘the refugee’ or ‘the asylum seeker’ is often, by default, an adult man, despite that refugees include women and children. The limited evidence of children in detention points to their particular vulnerability to infectious disease, nutritional deprivation, lack of opportunities for schooling, lack of other activities, and exposure to harsh physical and social conditions as they witness adult distress including hunger strike, self-harm and suicide, leading to psychological and emotional problems (Fazel et al. 2014; Procter et al. 2013). ‘Unaccompanied minors’ and young adults, once ‘released’ into the community, show evidence of extreme trauma, having lived in regimes of terror, watched friends and kinsmen be raped, murdered and killed on voyages of escape, and watched adults self-harm in camps (Newman 2013; Newman et al. 2013). Reports of children also deliberately self-harming, and of suicidal behavior, sleep difficulties, attachment difficulties and somatic complaints after their release from camps into communities highlights the continued risks to their mental health (Australia 2014). Such public accounts draw attention to the importance of working with these populations after their release, as they try to establish autonomous lives, opening up, in the process, multiple questions of anthropologists in relation to adaptation, suffering, resilience and social inclusion.

## Rethinking Structural Violence

In this book, we have highlighted the importance of structural violence, which Paul Farmer describes as “the degree to which agency is constrained is correlated inversely, if not always neatly, with the ability to resist marginalization and other forms of oppression” (2004: 307). Structural violence causes people to be stressed and feel hopeless, thereby contributing to poor mental health (Kohrt and Mendenhall 2015). In Chapter 5, we considered the stresses in everyday life, their medicalization and management; in Chapter 14, we pointed to the developments in epigenetics, which suggest that such feelings of stress and hopelessness can influence our genes.

Epigenetics refers to heritable changes in phenotype due to processes that are independent of the primary DNA sequence of an organism. Research in this field is leading to new paradigms for genetic inheritance and evolution, beyond the ‘hard heredity’ models of Mendel and Darwin, and

this has led to the rehabilitation of some of their contemporaries, such as Lamarck and Lysenko (Meloni 2015). For scholars of structural violence, the importance of this field of research lies in the blurring of boundaries between natural and social inequalities. Epigenetic research suggests that living in violent communities can affect gene-expression in the people of the current generation as well as in their children, which has huge implications for our understanding of genetics. For epigeneticists, heredity is no longer the simple transmission of DNA from one generation to the next; living conditions can actually change DNA. How do these insights affect our understanding of structural violence? What if everyday living conditions that make people feel stressed and hopeless become part of their being to the extent that violent behaviors become part of our genomic makeup? What are the implications of epigenetics for our interventions in the field of global health? How do they change our thinking about nature and nurture? We need to rethink our paradigms for mental health, while at the same time examining the hypes and hopes that accompany this new field of research.

### Humans, Other Living Things and the Environment

Margaret Lock (1993), in her work on menopause in Japan and the US, came up against the ramifications of these entanglements over two decades ago—and from that encounter coined the term ‘local biologies.’ She argued that it was important to understand how different environmental contexts uniquely shape health risks, health outcomes, genetics and genetic potentials of individuals, and how this in turn resulted in different constellations of embodied experiences. Beyond the local biologies of humans, we also dwell in environments that are so altered from their pre-industrialized state that they are significantly changing all the other living things present in the mix. Bruno Latour talks about this, in the context of human history on this planet, as “internalized ecology”: “The intense socialization, re-education, and reconfiguration of plants and animals—so intense that they change shape, function and often genetic makeup” (1999: 208). Our reconceptualization of human–animal interactions is taking account of the emergent and flexible character of the human body and its entanglement with the environment. This embeddedness produces a body which is imprinted by its social, political and material environment, and which differs considerably from context to context (Wolf 2015: 9).

In Chapter 11, “The Anthropocene,” we drew attention to the continued acceleration of environmental vulnerability with increased population pressure, pollution and associated climate change, and with this, we have witnessed both loss of biodiversity and species adaptation, resulting in changes in disease risks for humans. Zoonotic infections provide a clear link between we humans and other animals. Most zoonotic infections impact particularly on the poorest and most vulnerable people in the world, and affect families, communities and nations economically, but also economic growth and business interests, as discussed in Chapter 7. Environmental control activities conducted to reduce the transmission of vector-borne diseases, such as improvements in hygiene and sanitation, water management, vector control, early diagnosis and treatment, and personal protection, were largely introduced over a century ago. Consider the sanitation drives in Freetown, the capital of Sierra Leone in 1899 to clear the city of potential breeding sites to prevent malaria; in Cuba in 1901 and in Panama the following year against yellow fever and malaria (Ross 1967 [1902]: 8, 9). In British Malaya at this same time, malaria control programs included environmental management, vector control, mass screening and treatment for anemia and enlarged spleen, and the use of quinine for presumptive treatment (Manderson 1996). The strategies have changed little for over a hundred years, despite the extensive biomedical and entomological research throughout this period, as both parasites and vectors have outpaced human inventiveness and rapidly developed resistance to chemical and pharmaceutical interventions.



Vulnerability then and now was underscored by the overcrowded and rudimentary living conditions in rural areas where breeding conditions were ideal, particularly as geographical regions were appropriated. Forest clearing and drainage have created new ecological niches ideal for breeding new and stronger zoonotic diseases; the building of mega-cities, roads, railways and airports then and now has created new habitat for vectors of viral, bacterial and parasitic diseases despite that urbanization, by reducing human–animal contact, reduces the risk of other infections. Ecohealth, ecobiopolitics and ecorisk will become increasingly important concepts as we try to make sense of new mutations and repeated epidemics of diseases like Ebola, Chagas disease, malaria and influenza, threatening all mammalian hosts. Vector-borne infectious diseases are a major category of climate-influenced risks to health in sub-Saharan Africa, Asia and South America.

### Climate Adaptation and Resilience

We see the Anthropocene as conceptually critical to our scholarship, and as global citizens, personally critical in the decades ahead. Global warming is an increasing threat to human settlement, health and wellbeing. In a hotter world, with more evaporation, overall precipitation will increase, but its geographical distribution and seasonality will change. Poleward shifts of large-scale atmospheric circulation systems have resulted in dryer conditions in semi-arid regions, with changes in ‘storm tracks’ affecting future agriculture and food supply, viable cultivars, local and national productivity, community structures and household incomes. Increased mean ambient temperature, and the increased duration and severity of heat waves, will impact continental areas, such as in South Africa and Australia, with increases in the heat island effects of the cities in these areas. People will be forced to confront changing environments, including environmental degradation, with the effects compounded by continued population growth, urbanization and potential civil disorder (for further discussion, see Baer and Singer 2008; 2014).

It is increasingly difficult to ignore climate change from any vantage point, but for those living on atolls and archipelagos, on river flats and the foreshores of estuaries, in major urban settings such as Dhaka, Bangkok, Freetown, Dakar and Dar es Salaam, there is a clear risk of damage to existing settlements from sea rise. Climate migration is already a reason for population movement in the Pacific. When Lenore Manderson was working in the Solomon Islands in 2011 and 2012, people recurrently described entire communities moving to large islands from small atolls, and moving inland and upland from villages built on stilts along the foreshores. Solomon Islanders understood the vulnerability of their homes, gardens and fishing grounds to cyclones, tsunamis and tidal inundation; they spoke routinely of global warming and sea rise, incredulous that some people might regard this with skepticism. The Pacific islands that we know so well through the works of Bronislaw Malinowski (1922; 1929; 1935) and Raymond Firth (1936)—the Trobriand Islands (Papua New Guinea) and Tikopia (Solomon Islands)—are so affected.

Like the distribution of infectious disease, so the influence of climate change on human health is already felt particularly in poor countries among the poorest people. Drought, changes in precipitation and floods all affect water quality and quantity for household use, impacting agricultural production, crop choice, hunting and fishing, and so food security. In Argentina, drought compounds other socioeconomic stressors as families respond to crop failure, loss of livestock and indebtedness by moving to farming areas with better current climatic conditions, or abandoning farms and relocating to cities (Wehbe et al. 2007). Global warming in the Arctic, as a very different example, has dramatically narrowed the times when people can hunt, the speed at which they must work to prevent meat spoilage, and the impact of this on other economic activities and on food reserves for the rest of the year. As one man from interior Alaska reflected, “we’ve got

such a short window that when that window's there everybody's got to go out . . . the seasons are really putting a crimp on traditional subsistence activities of going out when it's appropriate, when the weather, you can take care of the meat and so on" (McNeeley and Shulski 2011: 469) (see Johnson's case study in Chapter 11). Lack of wild food forces dietary change, and with it, increasing dependence on nutritionally poor, expensive store-purchased food, contributing to the increased incidence of non-communicable diseases (Chapter 7). Poor nutrition and the increased risk of cardiometabolic disease is only one dimension of the impact of changing climate on human health. As Hans Baer (2008) illustrates, there is already an increase in respiratory illness from wind-borne dust, and increased diarrheal diseases, cholera, leptospirosis and *E.coli* bacterial infection as a result of chronic water pollution and flood-related contamination. There is also, already, changes in the habitat of vectors and the epidemiology of parasitic infections and arboviruses (Alley and Sommerfeld 2014; Bezirtzoglou et al. 2011).

Amber Wutich and Alexandra Brewis (2014) have argued the need for research on the impact of water and food insecurity on individual emotional wellbeing and mental health, as well as its detrimental impacts on households, including from increased indebtedness and unemployment, family disruption, increased illness and mental health problems (see also Berry et al. 2011). Wutich and Brewis (2014) also argue the need to explore 'coping' mechanisms at both household and community levels in face of such resource insecurity. A growing number of anthropologists have illustrated how people have been able to adapt to climate change, drawing on local knowledge of climate variation, and associated changes in the plant and animal life. At the same time, as we witness now, international, regional and local priorities, local histories of environmental change and action, and systems of governance all shape adaptation, mitigation and resilience (Lazrus 2015; McNeeley and Lazrus 2014; Orlove et al. 2014).

## Towards an Anthropology of Us

While infectious disease control is concerned with the detrimental effects to our bodies of specific pathogens, and climate mitigation might begin to address epidemiological shifts parallel to local ecological changes, a new line of research has emerged in human biology which focuses on the microbiome, which is defined as "the ecological community of commensal, symbiotic, and pathogenic microorganisms that literally share our body space" (Lederberg and McCray 2001: 8). The whole genome sequencing technologies that we described in Chapter 14 have made it possible to do rapid identification of these organisms, which has resulted in the frequently cited statistic that only 10 percent of the DNA in our bodies is actually human DNA. Donna Haraway suggests that it is therefore more accurate to describe our bodies as "us" rather than "me" to account for this complexity, arguing: "I am vastly outnumbered by my tiny companions; better put, I become an adult being in company with these tiny messmates. To be one is always to become with many" (2007: 4). Inspired by these developments, anthropologists and other social scientists are turning their attention to the symbiotic relations between humans, microorganisms and other living things (Wolf-Meyer and Collins 2012). This was the topic of the conference of the Association of Social Anthropologists of the United Kingdom and Commonwealth in April 2015. Increasing progress in the field of microbiome research points to the role of the intestinal microbiome and levels of inflammation in human health and mental wellbeing. Imbalances in intestinal flora have been related to diabetes, cardiovascular disorders and Alzheimer's disease, among others (Yatsunenکو et al. 2012). Gut health has been found to be related to our eating patterns (Selhub et al. 2014), with overeating causing obesogenic bacterial growth; this in turn influences the so-called endocannabinoid system which regulates brain signals that it is time to eat (Romijn et al. 2008; Verdám et al. 2013). At the same time beneficial microbes—'probiotics'—can have

therapeutic value for people suffering from depression and fatigue, decreasing anxiety and perceptions of stress, and contributing to healthy glucose tolerance. Not surprisingly, these products are emerging on the health market worldwide as cure-alls.

For medical anthropologists, the insights into the microbiome demand a radical rethinking of the body as the existential ground of self as defined by phenomenologists such as Csordas (1990), as well as the mindful body, proposed by Margaret Lock and Nancy Scheper-Hughes (1986) as a way to integrate the existential body with the social body and the body politic. It calls for a more ecological understanding of our being in the world, where the boundaries between us and the foods that we eat, and the soil upon which we walk, are related to health and happiness. These complex issues require us to rethink our role in global health interventions, where advocating for hygiene, use of antibiotics and eradication of microbes may not necessarily be good for health. To understand the dynamics we will need to work more closely with biomedical researchers, biologists, ecologists and physical anthropologists, while at the same time being alert to the overstatements that travel with these new biological knowledges.

## Governing the Global Environment

As we take our new found biological knowledges with us and move further into the Anthropocene, we see the effects of pollution and overpopulation putting pressure on water, food and even, ultimately, air supplies. There is a risk of an increase in human-caused environmental disasters, despite that we are more aware of these than ever before. The increased incidence of environmental hazards will continue to pit citizens against governments and big industry, precipitating health litigation and strife around environmentally caused illnesses. Medical anthropology has a critical role to play in giving voice to those negatively affected by these circumstances, in documenting illnesses associated with them, and in maintaining a critique of the exercise of power involved in their resolution, as Vincanne Adams (2013) illustrated in the aftermath of Hurricane Katrina (see also her case study, Chapter 11).

The mining industry is a good example (one of many) of a rapidly expanding, environmentally disastrous, set of behaviors that humans are engaged in to the profound detriment of their health and the health of the earth (Donoghue 2004). Mining is a dangerous activity in many ways for people working in the mines, their families who live in close proximity to mines, and those in the larger watersheds and downwind from the mines. In coal mines, for instance, chemical exposures occur from breathing in the silica and the coal dust that is released into the environment, causing coal mine dust lung disease (CMDLD), a group of illnesses that includes black lung, silicosis, dust-related diffuse fibrosis and COPD. Other chemicals are commonly released in mines and environs, including asbestos, diesel particulates and arsenic. Small-scale artisanal gold mines release airborne mercury that causes neurological, respiratory and cognitive problems to those who come in contact with it (Webster 2012). These chemically induced illnesses are also spread into the environment through polluted watersheds where acid mine drainage that arises from the interactions between water and pyrite creates sulphuric acid that then leaches out heavy metals into the surrounding streams and lakes; it sickens and kills plants, animals and humans (Kirsch 2008). Psychologically, the stresses of mining include living in suboptimal conditions, risky sex and violence, and in the widespread use of addictive drugs and the copious amounts of alcohol that often make these scenes of environmental wreckage profoundly toxic at many levels (Cartwright 2016).

Workers are routinely at risk as they go about their everyday work. Adrienne Pine's case study in Chapter 13 provides a provocative example of how nursing in the context of the everyday violence of Honduras has a particular constellation of risks; the miners in the oil sands of Canada

described in Chapter 11 are another occupational group whose unique ecobiological context results in a particular constellation of health problems resulting from chemical and physical hazards—unique ‘eco-risks.’ Workers in off-shore drilling, deep-sea fishing, nuclear power plants and other, newly created occupations are inserted in a very bodily fashion into ways of being that have profound effects on one’s health and wellbeing. Conversely, the lack of one lifelong occupation—as seen in individuals moving through many types of jobs in their lifetimes—makes tracing the health effects of a particular industry difficult to prove, especially in the case of class action suits and other forms of retaliative litigation.

Issues of governmentality, and the ways that states exercise control over their populations, arise as individuals of differing ethnic and socioeconomic resources are put into the position of needing to attain recourse for the health effects coming from environmental and industrial pollutants. The NIMBY (‘not in my backyard’) syndrome has been long documented in anthropology (Douglas and Wildavsky 1983); while enjoying the benefits of cheap energy manufactured from coal and oil, while using our personal devices that run on the conflict mineral coltan, and while consuming beautiful things made of gold, silver and diamonds, someone else’s health and the health of their communities is compromised (Strauss et al. 2013). Moving towards the future, dumping of wastes on land and sea, cross-border litigation, and the pressures that this will put on human habitat and social life, will be a critical focus of medical (and other) anthropologists.

## Revisiting Cultural Competency

In the introduction to this volume, in passing we referred to our roles in the practical application of medical anthropology, and from this, the important development of rapid assessments and focused ethnographic manuals. This was linked in part to the task of integrating anthropological methods and interests within collaborative research, but also to aiding the translation of our work into practice. This move partly reflected the interests of epidemiologists, clinicians and other health professionals of how ‘culture’ affected clinical consultations, hospitalization, health communication, and community participation in public health interventions. It reflected, too, ethical concerns about the value of our research to the people with whom we worked, and the expanding environments in which anthropologists were working outside of the academy: local governments and national health ministries, development aid programs and development banks, non-governmental organizations, community services and multilateral agencies. Anthropology had an important role, we demonstrated, in both local and international settings to ensure that policies, programs and protocol were appropriate to the setting (Whiteford and Manderson 2000; Whiteford and Whiteford 2005).

Interests in translating medical anthropological research into public health and clinical services resonated with growing concerns about the ‘cultural appropriateness’ of services to people from diverse backgrounds. Arthur Kleinman’s ‘explanatory model’ proved helpful to explain to non-anthropological health workers cultural variations in the etiology and symptomatology of different conditions, while also contributing to anthropological research into cultural variability in symptomatology and preferred treatment for a range of mental and physical health conditions (Good and Kleinman 1985; Good et al. 2010; Hahn 1985; Kleinman 1980; Lock 1993). Although now we might argue that this approach privileged and reified ‘culture’ over other variables (class, ethnicity, gender, for instance), it made anthropology and its methods accessible to others, as reflected to the kinds of questions included in various manuals, with the inclusion of cultural-bound syndromes in *DSM-IV* (American Psychiatric Association 1994; Guarnaccia and Rogler 1999; Mezzich et al. 1999). This led to various studies testing the extent of cultural-specificity (Lee 2002), and its radical revision in the most recent diagnostic and statistical

manual—*DSM-5*—which has replaced culture-bound syndromes with *cultural syndromes*, *cultural idioms of distress*, and *cultural explanations of distress and its causes* (American Psychiatric Association 2013: 758).

The attention to ‘cultural difference’ should not efface the importance of structural and historic factors that result in different health outcomes. Even so, there is utility to this approach in part in addressing such structural gaps, particularly as clients of health services have drawn attention to the lack of cultural appropriateness, responsiveness or sensitivity to their needs, and as we anthropologists have explained why this is so. In elaborating on this, Cristiana Giordano (2014) highlights the ‘logics of difference’ and the challenges of translation in the use of language, the choice of premises for consultations, and in therapeutic practice. Her focus is the ethnopsychiatric clinic in Turin, Centro Frantz Fanon, established in 1996 with psychiatrists, psychologists and anthropologists (including psychiatrist and anthropologist Roberto Beneduce, see Beneduce and Martelli 2005). The clinic operates with collaborations between cultural mediators and clients, and the judicious combination of different therapeutic approaches—faith-based practices, healing rituals from immigrants’ home countries, medical psychiatric therapies and social support. In doing so, the clinicians engage in what Giordano describes as a “clinical listening” that is informed by a politics of recognition; they aim “to fight deep-seated forms of social injustice in relation to identity and difference” (2014: 8, 9). This adds to our understanding of the difficulties faced in developing effective, acceptable health and social services with and for other populations with long histories of subjugation and abuse, and contributes to an urgent discussion among Indigenous peoples, worldwide, in relation to cultural safety. At its core, the principle is one of respect, and of the significance of respect of other peoples for social repair as well as physical healing. Emerging examples of ‘better than expected’ health outcomes point to the importance of community engagement and support, while acknowledging the tenuousness of goodwill towards and trust in health care providers from dominant populations (Anderson and Kowal 2012; Giles and Darroch 2014; Josewski 2012). Given continued health disparities across populations and continued social exclusion, as medical anthropologists we need to revisit ideas around cultural appropriateness and ‘cultural safety,’ a term and implicit approach used by Maori, Aboriginal Canadians and Indigenous Australians, and to work to support communities struggling to ensure that this is standard procedure.

## How Medicine Is Practiced

As new evidence emerges in biomedicine and as current ‘evidence’ is shown to be incomplete and incorrect, practitioners will be faced with changing the ways they practice, or will try to continue to practice medicine consistent with old and out-dated guidelines with which they feel comfortable, such as PSA tests for prostate cancer or fecal occult blood tests for colorectal cancer. Screening policy varies worldwide, not because of the lack of equipment and cost alone, but also because of the uncertainty of what we accept as the current ‘best practices.’ What is the evidence and what are the recommendations in the US at the time of this writing (mid-2015) for breast cancer screening, for example? Currently, the American Cancer Association and the American Congress of Obstetricians and Gynecologists recommend that annual mammography be offered to low-risk women 40 and older. In a slightly less conservative take on the issues, the US Preventive Services Taskforce draft proposal of new guidelines, released on April 20, 2015, increases age at first mammogram and decreases frequency of screening, recommending that low-risk women 50–74 be offered a mammogram bi-annually. And finally, according to a recent statistical study published in the *JAMA Internal Medicine Journal*, “(a)mong 1000 US women aged 50 years who are screened annually for a decade, 0.3 to 3.2 will avoid a breast cancer death, 490 to 670 will

have at least 1 false alarm, and 3 to 14 will be over diagnosed and treated needlessly” (Welch and Passow 2014: 448). These guidelines are difficult to interpret and implement for both clinicians and patients.

This situation brings up two issues that will continue to be critical components of clinical realities long into the future. First, both practitioners and patients have long been subjected to public health information that is targeted at them to increase their participation in screening. Fear, guilt and shame are commonly integrated into these ‘health promotion’ materials. Women in the US and in some other high-resource countries have internalized these messages and indeed now often demand screenings such as annual mammography, even when it may not be warranted. Physicians may allow or even encourage patients to screen for reasons that include their own fears of the disease and fears of being sued or blamed were their patient to contract breast cancer at some time in the future. Second, clinical guidelines are based on evidence and so, rightly, these change as new evidence is amassed regarding the efficacy of screening procedures, techniques and timing. As Welch and Passow (2014) show, increasingly sophisticated and reliable large databases are being established that allow standard practices to be re-evaluated. Techniques of visualization are refined, as are our understandings of human physiology. Thus, guidelines that are familiar to practitioners and patients change—this can be an uncomfortable process because inherently, it is an acknowledgment of the fact that we often know much less than we think or pretend to know about common, serious health conditions.

Health policy makers worldwide are increasingly viewing the health of their populations through interconnected sets of ‘big data.’ These provide them with dashboards, which illustrate progress made on key health indicators and highlight the inequities still present. Without us knowing, data from our GPs are being connected to those of our insurers, gyms and supermarkets. While big data analysis can help prioritize health interventions to those most in need, they can also be used to monitor whether we are adhering to healthy lifestyle prescriptions. We are able to acquire gadgets through which we can monitor how many steps we take per day, what we eat, and what our blood pressure is. Mobile phone companies have the capacity to track where we are, and who we are in touch with, while Facebook posts can be ‘swept’ to target advertising at the same time that we share what concerns us and how we feel. Anthropologists need to reflect on the ethics of these new ways of monitoring populations, at a time when there seems to be less and less concern about privacy (but see Manderson et al. 2015; Nuttall and Mbembe 2015; Sundaram 2015).

As Foucault described in *The Birth of the Clinic* (1973), the available technologies of visualization create the possibilities for the clinical gaze to penetrate into the recesses of the body; this is reflected in the depth of power that practitioners, health policy makers, insurers, phone companies and supermarket chains believe that they have over biological life itself. As technologies change, so too does the extent of that gaze. Whether we willingly strap on personal monitoring devices, or are subjected to various forms of possibly harmful radiographic tests, through a mixture of control and consent the hegemony of biomedicine will be reified in new and ever more interesting and twisted ways.

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