An Anthropology of Biomedicine
To Richard, Adam, Gudrun and Denis
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Acknowledgements

We undertook this project at the behest of readers we encountered the world over whose engagement with the first edition stimulated us to further develop and refine our arguments and allowed us to draw on the detailed and rich work addressing the themes of the first edition that has emerged since 2010. We can only regret that space did not allow us to draw more extensively on this exciting new wave of scholarship.

We gratefully acknowledge the support of the European Research Council, through a Consolidator Grant awarded to Vinh-Kim Nguyen to study “the science and politics of a world without AIDS”. Nguyen also acknowledges the support of Professor Frédéric Adnet at Hôpital Avicenne and the Assistance publique – Hôpitaux de Paris, and in Montréal Dr Réjean Thomas at the Clinique l’Actuel and colleagues at the Jewish General Hospital, whose flexibility made it possible to complete this book despite clinical commitments.

We want to thank Erin Martineau, Emmanuelle Roth and Kwaku Adomako who provided invaluable editorial and research assistance. Tanya McMullin, our editor at Wiley, as well as an extensive staff have been of enormous help throughout the process.

The cover image is from the photographic exhibition “No Pasara” that captures the anguish and resilience of refugees. Leila Alaoui, the French-Moroccan photographer and video artist who designed the image, was killed in 2016 during an attack carried out by Al-Qaeda in Ouagadougou, Burkina Faso. She was on a photographic assignment for Amnesty International at the time. We are grateful to her brother Soulaimane B. Alaoui and the Fondation Leila Alaoui for their permission to reproduce this image.

Last and not least, we wish to acknowledge our debt to a wide circle of colleagues and friends, too numerous to mention, who over the years have provided an engaged, critical and supportive intellectual community on both sides of the Atlantic, particularly at the Collège d’Études mondiales of the Fondation Maison des Sciences de l’Homme in Paris, the Graduate Institute for International and Development Studies in Geneva and McGill University in Montréal.

We have drawn at length on the publications of numerous anthropologists, sociologists, historians, epidemiologists, philosophers, biologists and others to ground our arguments and furnish the bedrock of this book, but the overarching orientation and the narratives that we have developed on these incredibly rich sources are our own.
Introduction

The Argument

Biomedicine is a sociotechnical system, akin to a power grid, railway network, or the Internet; an arrangement cobbled together steadily since the end of the nineteenth century. The biological sciences on which biomedicine is based provide a set of standards, protocols and algorithms that enable the production of knowledge and practices to treat ailing individuals and improve the health of populations around the globe. Biomedicine, in theory then, is based on an assumption of the universality of human bodies that everywhere are biologically equivalent.

Biomedical technologies are the prime means by which governments and development agencies seek to prevent ill health and ameliorate disease and disability, and their global reach is everywhere visible. It is incontrovertible that biomedicine has transformed human existence for the better in many parts of the world, possibly more so than has any other technology. But, in common with all technologies, biomedicine has a history. During the nineteenth century when biomedical technologies were used experimentally to treat colonized peoples it was assumed that, although outwardly different, the interior of the human body is everywhere essentially the same, thus opening the door to a standardization of medical practice abstracted from the reality of the lives of patients and their families. At the same time, life expectancy increased in Europe and North America, due primarily to two major innovations: the installation of sanitation systems and better distribution of food based on a coordination of transportation networks, thus greatly improving nutrition.

When establishing itself as the dominant form of medical practice over the course of the twentieth century, the emerging profession of biomedicine drew from findings accrued both from experimental medicine in the colonies and from the evidence at home about the effectiveness of public health. Numerous technologies developed were assumed to be universally effective in the prevention, diagnosis and treatment of specific named diseases and disabilities. The result is that, for large segments of the world’s population today, vaccination, antibiotics and surgery, amongst many other biomedical innovations, ensure a life relatively freed up from disability and disease. Above all, biomedical technologies enable an improved quality of life and not merely crude survival, and one of the defining social and political challenges of our time is to provide equitable access everywhere to biomedicine.

This book responds to this challenge through the lens of an anthropology of biomedicine. Understanding biomedicine as a sociotechnical system requires that its logics and practices be situated in historical and social context. This is the task of an anthropology of biomedicine, which draws on ethnography, history and studies of technoscientific knowledge and practice.
We are concerned not simply with improved access to biomedical facilities, but also with the actual implementation of biomedical practice in local contexts. Of interest are the social and political ramifications of the application of these technologies and not merely their medical efficacy. Biomedical technologies are not autonomous entities; their development and implementation are inevitably enmeshed in agendas, medical, social and political, that have practical and moral consequences for well-being. Due to the numerous ongoing crises in the world today their distribution is uneven to the extent that, in some places, vaccinations and basic medications are less available than was formerly the case. Local health care workers put their lives at risk at times to ensure that vaccinations are carried out.

A second focus of an anthropology of biomedicine is on biological variation. On average, the DNA sequence of all humans is 99.5 per cent the same as that of any other human. However, over the course of evolutionary, historical and contemporary times, biological differences have arisen amongst people that are largely of no consequence but at times are of particular significance for health and disease occurrence. With the steady development of technologies that have made it possible to ‘see’ into the body ever more effectively, biomedical practitioners focus increasingly on the diagnosis and amelioration of conditions internal to the body. Causes of ill health originating outside the body of course continue to be recognized, but attention is given primarily to so-called final common pathways resulting in material disease. This preferential viewpoint of biomedicine is increasingly being questioned from many quarters today, notably following the mapping of the human genome.

Our position is that the contribution made over evolutionary, historical and contemporary times to the incidence of disease due to changing environments – physical, social and political – is highly significant. Furthermore, biological difference amongst humans is on the increase due to ever more invasive transformations of local environments in the name of economic development, resulting in forced migrations, destruction of arable land, increased income inequities and climate change, all of which impact negatively on health. Worldwide increases in diabetes, obesity, infertility and the debilitating effects of toxic exposures, amongst many other conditions, have highlighted the challenges and the limitations of biomedicine in its present clinical form and brought to the fore questions of how best to sustain good health and hence better human rights. Findings derived from an anthropology of biomedicine presented in this book make clear that the assumption of a universal body (which every biomedical practitioner well knows is a very crude gloss of reality) should be revised, and the normalized, routinized practice of biomedicine as it is currently implemented modified appropriately.

Interwoven Themes

Three interwoven themes bind together the chapters that follow:

First, biological and social life are mutually constitutive over time, as research in epidemiology, population genetics, biological anthropology and an anthropology of medicine have shown convincingly. The biological transformations of human populations that take place over evolutionary time are well recognized. In addition, together with the slow changes brought about by evolution, the effects of more rapid modifications take place simultaneously so that more than one time trajectory is played out at the same time. These more rapid modifications, themselves have several different time dimensions, resultant from inextricably entangled shifting environments in which relatively recent history and associated politics, economics and social variables bring about individual, family and regional changes in biology, health and the incidence of disease. We characterize this phenomenon as ‘biosocial differentiation’.
Biological anthropologists have shown, for example, that the ability to digest cattle milk evolved in herding societies in East Africa centuries ago. Humans everywhere are able to digest milk when born, but the majority gradually lose that ability during childhood. However, most people of East African and northern European origins retain the necessary enzyme, lactase, for milk digestion into adulthood; only 5 per cent are intolerant of milk, whereas up to 90 per cent of individuals in other African and Asian societies cannot comfortably digest milk. Environment and genes are implicated in these differences. Similarly, haemoglobin variations that arose amongst human populations in response to living in regions infested with malaria-carrying mosquitoes are the result of gene/environment interactions over time.

Epidemiologists have shown repeatedly how income and education are intimately related to the incidence and outcome of disease, as is gender. It has also been shown that the experience of racism and stigma can have serious effects on pregnancy and birth weight. In addition to social and political variables, genetic variation amongst humans, most of which is trivial and has no effect on health, can at time be deleterious, as when mutations are present in clusters of extended families around the globe who have rare, so-called single gene disorders, such as those associated with early onset Alzheimer’s disease and Huntington’s disease.

In the medical world, the misuse of antibiotics by both physicians and patients has created new pathogens and made many resistant to antibiotic treatment, resulting in an emerging epidemic of ‘superbugs’ spreading globally. The consumption of so-called junk food worldwide has led to increased rates of obesity, diabetes and heart disease. The levels of smog in major Chinese cities today, together with that produced by fires deliberately set in Indonesia to create palm oil plantations, are just a few of the numerous examples of how changes to environments (often linked to the expansion of capitalist economies) transform biology, more often than not with a negative impact on health. Furthermore, the burgeoning field of epigenetics (see Chapter 15) has made clear that toxic environments, malnutrition and unmitigated stress, closely associated with poverty and/or racially based discrimination, can modify the expression of genes, leading to lifelong effects on the development of individuals that frequently persist into the next generation. The so-called nature–nurture relationship demands renewed attention.

Second, until recently, the majority of social scientists paid little attention to the material body in their ethnographic accounts, in effect black boxing its interior and placing it beyond the limits of investigation. Their assumption has been that the body proper – the normalized biomedical body, subject to the laws of biology – falls outside their domain. Following World War II, with its legacy of scientific racism and ongoing genocides, the question of biological difference amongst humankind has been a particularly charged issue. As a result, many social scientists have been reluctant to consider biological difference as significant given how easily such investigations may be framed in racial and racist terms, with stigmatizing social and political repercussions.

We share this concern but argue, nevertheless, that it is inappropriate to maintain a marked division between the biological body and its social environments. The influence of social and political variables on human health is well recognized by epidemiologists and certain health economists and highlights the socioeconomic and political ramifications of human well-being. We go further and, drawing on the idea of biosocial differentiation, illustrate it in many of the chapters that follow the dynamic process of embodiment. This process involves the internalization of social exchanges, lived experiences and events as emotional responses ranging from happiness to fear, and as sensations of health and illness. But individual embodiment is also informed by the body, itself contingent on evolutionary, environmental, social, economic, political and individual variables that have impinged on it over time and in space – in other words, by ‘local’ or ‘situated’ biologies (see Chapter 13). In addition, embodiment is constituted by the way in which self and others represent the body, drawing on local categories of knowledge,
language and experience. By taking the lived experience of health and illness and the process of embodiment seriously, the limits of the approach commonly upheld in biomedicine that the human body is amenable to intervention through standardization and decontextualization, is called into question.

Third, ethnography is vital for assessing the impact of biomedical technologies. Over the past 40 years medical anthropologists and other social scientists have written extensively about the introduction of biomedical technologies globally, documenting how such technologies are perceived at local sites and put to work in practice, and with what effects. While a good number of these research findings make clear the positive effects of biomedical technologies, many more evoke startling cautionary tales about the limits of a standardized, largely unreflective approach to the delivery of health care, especially when local knowledge and aspirations are not taken into account.

Clearly, it is essential to develop and sustain an approach to global health that prioritizes reduction of poverty and inequities, especially gender inequities. Health must be a basic human right and its promotion and preservation demand that these inequalities be addressed. We argue that such an approach should be complemented by clear-sighted recognition of unexamined assumptions embedded in the normative technological practices of biomedicine; an understanding of local aspirations and perceived priorities about individual and community well-being; and an acknowledgement of significant global biological diversity produced over evolutionary and historical time. Furthermore, an expectation shared by many today, that science and technology alone will bring about continual improvements in the quality of life everywhere, ignoring the damaging effects of humankind on environments worldwide in this era of the ‘Anthropocene’ must be tempered. In what follows in this introduction, we first situate our arguments in the context of a widely perceived need for global improvement in human health and well-being. We then address the concept of culture as it is made use of in this book and reflect on ethnography and its value as a research tool.

**Improving Global Health: The Challenge**

Biomedical technologies can and have brought about globally significant improvements in health as noted above. However, effective though a large number of biomedical technologies may be, simple technofixes are by no means sufficient. The constitution of the World Health Organization (WHO) states that ‘the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being.’ And yet newspaper reports daily make it patently obvious that large segments of the world’s population do not enjoy these rights. The inequitable distribution of global economic resources is in large part responsible for this situation, exacerbated by structural adjustment loans and conditions for development aid imposed by the World Bank, the International Monetary Fund and other powerful institutions. The effect of these inequities and conditions, despite numerous pledges to reduce disparities, has been that the number of people living in absolute poverty over the past decade, the majority without access to health care, has burgeoned to 1.5 billion at a time when the total world income increased by 2.5 per cent annually. Furthermore, this has happened at a time when biomedical technologies are increasingly disseminated and made use of worldwide.

In light of the dramatic and growing divergences in well-being between the increasingly wealthy and the desperately poor, wherever they live, efforts to improve global health have taken on a new urgency. In fact, the health of the world’s poor has become something of a *cause célèbre*, as captains of industry, academics, retired politicians and rock stars seek to marshal resources for the needy, making the most of media exposure to assist them. Yet the quest for
global health continues to be compromised locally by poverty and the spread of conditions that foster ill health. Worldwide economic forces effect the availability of food and its nutritional composition. The price of food, for instance, depends on multiple factors – amongst them global and local economic policies, agribusiness and changing patterns of land use – over which individuals and even local governments have little or no control. Access to clean water has been privatized in many places, adding to the travails experienced by people with few or no resources and enormously compromising their health. Increasing climate change compounds this burden.7

Governments are expected to ensure basic, minimal conditions for health: clean water, sanitation, access to food, a non-toxic environment, together with basic biomedical technologies designed for disease prevention (such as immunization) and, further, treatment of conditions of public health significance, such as tuberculosis and HIV, as well as other diseases, depending on the country. Increasingly, however, as the media reminds us every day, money is spent on weapons in the name of security or in destructive local conflicts, leaving ever fewer resources for medical care. Furthermore, regulations implemented as a response to threats of terrorism, real and imagined, have brought about restrictions by local governments on the movement of people as they attempt to flee from violence and abject poverty, resulting in a phenomenal rise in refugee and squatter populations.8 Epidemics of infectious disease thrive in conditions of poverty and instability and today have the potential to wreak widespread havoc in a matter of hours, striking even the world’s wealthiest. While the most dramatic example was the 2014 Ebola epidemic in West Africa that killed more than 11,000 people, other epidemics such as the 2002–2003 SARS outbreak, the 2014 MERS-CoV epidemic that spread from Saudi Arabia to South Korea and the annual threat of a flu pandemic serve as constant reminders of potential disaster.

In summary, the health of people everywhere is inextricably entangled with global politics, social issues and economics.9 Moreover, poverty, malnourishment and poor sanitation are associated with high infant and maternal mortality, a greater exposure to pathogens and toxins, a larger number of illness episodes and shorter life expectancies.10 These outcomes have been documented repeatedly over the past decades and have become a major focus for governments, non-governmental organizations (NGOs) and interest groups that seek to improve health today.

In September 2016 a new geological epoch, the Anthropocene, was officially declared. Its recognition is based on awareness that humans are today making over nature writ large to such an extent that it is being irreparably transformed by human activity. Furthermore, for more than a decade we have been living with another fundamental shift in the world of science known as the ‘postgenomic’ era. The human genome is no longer recognized as the origin and driving force of life but, rather, as ‘reactive’ to environments external and internal to the body (see Chapter 15). In other words, the very ‘nature’ of what it is to be human has been revised on the basis of knowledge brought to light when mapping the human genome, with enormous consequences for understanding human development, health, ill health and possibly our very survival. In sum, environments both macro and micro are in the driver’s seat, bringing about increased inequalities and, for many, intensified misery. This situation makes the research of anthropologists of greater significance than ever before.

Biomedicine as Technology

The following chapters make evident that the application of biomedical technologies brings about radical changes, not merely with respect to individual bodies but also in society at large. While we recognize the significance of dramatic global inequities in health care provision,
this is not our primary focus. Unlike basic requirements such as clean water, biomedical technologies are not essential for life. It is not necessary to have an extended discussion about the possible unintended consequences of providing clean water equitably to people. In contrast, numerous biomedical technologies – recruiting subjects into randomized controlled trials in developing countries to test medications that will be marketed in the West, testing a foetus with the intention of practising sex selection if it is of the ‘wrong’ kind, or ‘pulling the plug’ of a respirator sustaining the life of a patient in persistent vegetative state – raise profound moral questions, very often with legal and political consequences. Even something as apparently simple as taking a pill to prevent or treat an infection may have major repercussions on communities as a whole. Concern is growing that bacteria are becoming resistant to antibiotics, to the extent that the benefits of these important drugs may be lost within a generation. Antibiotic resistance has spread around the world as a result of apparently mundane practices that long escaped attention, ranging from self-medication with leftover antibiotics, substandard ‘counterfeit’ antibiotics widely available in developing countries, overprescription by physicians, global travel, widespread use of antibiotics in poultry and livestock and poor hospital hygiene.

Biomedical technologies are not autonomous entities, nor do they have uniform effects whenever they are put into operation. Professional choices about the use of specific technologies – when exactly to put them into practice and how to interpret the results and effects that they bring about – are combined with broader societal variables including culturally informed values and constraints, specific local and global objectives, economic disparities and inconsistent or non-existent regulations. These variables ensure that the far-reaching effects of biomedical practices of all kinds are understandable only in context, notably at sites of implementation.

Drawing largely on ethnographic research, our objective is to illustrate the impact and repercussions associated with the application of several biomedical technologies in many locations, north and south, east and west, including some that are well established and widely used and others more recently developed. Our discussion highlights professional and popular discourse about these technologies and the effects of their implementation on individuals, families, communities and nations. Local and global policymaking in connection with their use is also examined. Such discussion cannot be separated from a reciprocal consideration of the broader global interests and objectives of international organizations such as the WHO and the World Bank, governments of both wealthy and poor countries, special interest groups, multinational businesses and industries, philanthropic foundations, medical communities and NGOs, all of which at times facilitate or impede the distribution of technologies. Throughout this book we direct our attention towards the vibrant entanglements of human activity in connection with biomedical technologies. However, we give relatively little attention to the minutiae of laboratory activities: gene splicing, micromanipulation of human gametes, drug preparation and so on, nor do we examine the marketing of biotechnological products. Our focus is on taken-for-granted objects of knowledge in the worlds of medicine, public health and health policy, and how they are put into practice. Further, we discuss how various practices and technologies are legitimated and in particular expose the value judgements (often unrecognized) that are embedded in this type of discourse. We draw extensively on historical and ethnographic research because the impact of biomedical technologies cannot be understood without an appreciation of how they are incorporated into the historical trajectory and everyday social life of the locales in which they arrive. This research shows that it is impossible to assess the effects of technologies without obtaining extensive first-hand accounts from affected populations about their experiences in adopting (or being forbidden to adopt) specific biomedical technologies.
While quantitative survey research can produce findings that are useful to change practice and policy and even spur innovation, evidence in the form of accounts given by those who should benefit (whether targeted communities or local or national populations) must also be drawn on. This is because the promise and the effects of biomedical technologies are embedded in the social relations and moral landscapes in which they are applied. Ethnography and other forms of knowledge that explicitly engage the views of local actors provide insights into how biomedicine – in both its global dissemination and its specific local forms – transforms not only human bodies, but also people’s hopes and aspirations in ways that may well have broader repercussions for society at large, a point that will be developed in several of the chapters.

Does Culture Exist?

Throughout this book the concept of culture is drawn upon, at times explicitly, at other times implicitly, as an analytic tool. The idea of ‘culture’ has a tortuous genealogy, in part as a result of its separate origins in several European languages beginning approximately in the fourteenth century and its continued use since then in several different ways. From the time that anthropologists first took up this concept in the mid-nineteenth century, hundreds of definitions of culture have been created and debate and discussion about its worth persists.11 For this reason, we briefly discuss this slippery concept and how we make use of it in this book.

The anthropologist Clifford Geertz, writing about the concept of culture in the 1990s, stated that the task of ‘other-knowing’ – the work of many anthropologists – ‘is a delicate business’.12 As part of the escalating process of globalization, borders dissolve and boundaries that are drawn to demarcate one group from another – whether justified in terms of politics, economics or the idea of culture – tend to become less meaningful and, in many instances, actively disputed. The assumption, held formerly by the majority of anthropologists and others, that in a culture everyone participates equally in local socioeconomic arrangements, exhibits similar behaviours and adheres to shared values is no longer tenable: individuals cannot be reduced to an assumed cultural totality. The majority of anthropologists now agree that culture is a dynamic, fluid concept. Cultures are at once permeable and can span great distances, carried by migrants and media. Although many medical anthropologists have in the past given priority to ‘culture’ as an explanatory concept in connection with matters relating to health, it has become obvious to most that this concept has serious limitations.

In privileging culture, anthropologists often set aside the political and economic contributions to health and illness, notably the impact of inequities and discrimination on well-being and longevity.13 But beyond this difficulty is another, bearing on the culture concept itself, that involves a vexing debate about what exactly is being conveyed by using culture as an analytic tool. While anthropologists point to the fallacy of ‘essentializing’ individuals in terms of their culture, medical anthropologists underscore that ‘culturalizing’ difference masks fundamental political and economic factors influencing health.

More than any other eminent anthropologist Clifford Geertz wholeheartedly promoted the concept of culture. In 1995, he defended his continued support for its utility:

Everyone, everywhere and at all times, seems to live in a sense-suffused world, to be the product of what the Indonesian scholar Taufik Abdullah has nicely called a history of notion-formation ... one can ignore such facts, obscure them, or pronounce them forceless. But they do not thereby go away. Whatever the infirmities of the concept of ‘culture’ (‘cultures’, ‘cultural forms’ ...) there is nothing for it but to persist in spite of them.14
The anthropologist Marilyn Strathern, writing for a largely medical audience, also defends the use of culture and argues that the concept draws attention to the way things are formulated and conceptualized as a matter of practice or technique. People’s values are based in their ideas about the world; conversely ideas shape how people think and react.

She goes on: ‘ideas always work in the context of other ideas, and contexts form semantic (cultural) domains that separate ideas as much as they connect them.’ Strathern is adamant, as are many other anthropologists, including ourselves, that if we are to use this slippery concept, then it must be applied ubiquitously, to all societies and to all aspects of knowledge, including scientific knowledge.

Other writers stress that culture should be understood as neither static nor totalizing; culturally informed values are subject to dispute, distributed unequally across groups of people and used to gain power, define moral order and maintain inequalities. However, borders and boundaries can no longer easily be demarcated and, given the global economy, are best interpreted as a ‘complex, overlapping, disjunctive order’. Arjun Appadurai argues that a major problem today is ‘the tension between cultural homogenization and cultural heterogenization’. He points out that while homogenization usually means ‘Americanization’ and/or ‘commoditization’, a second process often goes unnoticed, one of ‘indigenization’. In this process, newly diffused ideas, knowledge, behaviours, technologies and material goods are appropriated and actively transformed in order to ‘fit’ with the cultural horizons of their new localities. Artefacts, including biomedical technologies, may be introduced to new locations without the simultaneous adoption of the use originally intended for them. New meanings and social relations coalesce around transported artefacts, whatever the direction of their travel. This is not an argument for the autonomy of artefacts (or for that matter for the autonomy of culture), but rather for their inherent heterogeneity as social objects, a point to which we return in the following chapters.

Today, nation-states often draw self-consciously on the idea of a unique shared history and culture that holds their peoples to a common set of assumed ‘traditional values’ that serve as a moral code for conduct. This idea has been described by the anthropologist Daniel Valentine as ‘mythohistory’ and, when invoked, can have profound effects on the application of technology. Nationalistic sentiments such as these serve to re-essentialize the culture concept at a time when anthropologists are voicing concern about its misapplication. Many people who formerly assisted in anthropological research as local ‘informants’ react strongly today to being ‘treated as specimens of cultural difference and otherness’. Equally evident, the self-conscious fostering of the idea of a shared culture is, in most parts of the world, subject to interrogation or rejection by segments of the populations in question. In other words, the very idea of culture is being politicized and has become a touchstone for mobilizing dissent often in opposition to ‘outsiders’.

In contrast, in health care settings in the West, in an effort to promote what is sometimes termed ‘ethnically sensitive health care’ or ‘cultural competence’, health care professionals in the United States, Great Britain, Canada and elsewhere are frequently encouraged to pay attention to the impact of culture and ethnicity on the knowledge and behaviour of their patients. This practice can perhaps be characterized as the ‘medicalization of culture’. Such an approach makes few allowances for the following: highly divergent countries of origin of immigrants who speak the same language; generational, educational and value differences amongst immigrants; and embedded gender inequalities that can be profoundly damaging to the health of women and children. No standardized approach to acquiring ‘cultural competence’ is adequate; the challenge demands a great deal of careful, context-sensitive reflection, rather than simply adding on clichéd notions of ethnicity as another variable in a patient history.

Despite the promotion of so-called cultural competence, a widespread tendency to ethnically stereotype ‘others’ persists amongst certain health care professionals, many members of the
public and the media.26 The reason for this is, in part, because most medical professionals assume that ‘culture’ is composed largely of irrational and superstitious beliefs that inhibit the acceptance of scientifically grounded knowledge and practices, and that such beliefs must be circumvented in order to bring about patient compliance. Didier Fassin notes that health care authorities, including those employed by the WHO, frequently cite cultural beliefs as the reason why women choose not to cooperate with the modernization of maternity practices: ‘In incriminating culture, as certain health authorities willingly do, sometimes supported by anthropological data, they are in fact blaming victims while masking their own responsibility in the matter.’27 Using a case study of indigenous people from Ecuador, Fassin stresses that poverty and difficulty in travelling to biomedical facilities have much greater explanatory power in accounting for apparent non-compliance than does the idea of embedded cultural resistance. Fassin, himself a physician/anthropologist, argues that this situation is exacerbated by a lack of understanding and sympathy amongst local health care professionals. He insists that ‘culturalism’ – by which he means the assumption that culture is a unified entity and may be used to fully account for people’s behaviour – is drawn on by powerful individuals and institutions to divert attention from the social, economic and political origins of ill health.28

Culturalism often ensures that ‘target populations’ themselves are assumed to be the cause of difficulties encountered in trying to implement changes in health care; furthermore, Fassin states, such an attitude denies people a right to dissent from biomedical norms. He decries the violence implicitly associated with culturalism, but concedes that it is possible to retain the idea of culture as a useful concept (in the form of widely shared values within a group of people), provided that it is used as an explanation of last resort and then only as a politicized concept. A study of culture must move out of the realm of moral assumptions, he argues, and into the domain of politics. It is then possible to better comprehend the dangers associated with acting upon the assumption that culture determines behaviour. A political analysis of culture reveals how the concept, often linked with religion, can be mobilized for nationalistic purposes by powerful groups, frequently in opposition to perceived threats to society as a result of the ‘Westernizing’ influences of modernity.

We agree that the effects of inequities, discrimination and injustice on health and on life itself must be exposed; these variables account, more than do any others, for the unequal distribution of disease, disability and early death.29 But, in addition, recognizing how culturalism contributes to the perpetuation of inequities and injustice within and amongst societies is crucial, especially as the majority of individuals today no longer live in a situation where a dominant culture exerts a hegemonic hold. Increasingly, as a result of exposure to other ways of being, people in most parts of the world are able to reflect on their lives and exert agency in the hope of bringing about change. Although living under an oppressive political regime places major limitations on such activities, it is nevertheless clear that communication technologies, notably the Internet, globally disseminate ideas of many kinds, and that these have the power to influence how a large proportion of the world’s population today imagines a better life.30

In his recent comprehensive genealogy of the anthropological uses of culture, Michael Fischer explains how the concept of culture remains of great significance today. He argues that culture is, in effect, ‘an experimental tool’ for anthropologists – one that assists in making ‘visible the differences of interest, access, power, needs, desires, and philosophical perspective[s].’ Fischer goes on to note the importance of the concept of culture for understanding new developments in the life sciences: ‘as we begin to face new kinds of ethical dilemmas stemming from developments in biotechnologies, expansive information and image databases and ecological interactions, we are challenged to develop differential cultural analyses that can help articulate new social institutions for an evolving civil society.’31
Many of these emerging institutions are assemblages whose networks straddle the globe and are by no means confined within one or more region. Increasingly, facets of biomedical research are deeply embedded in such networks; the repercussions of this for clinical care and the promotion of public health are discussed in Section 3 of this book.

A word About Ethnography

Historically the practice of ethnography was devoted to providing detailed descriptions of the ‘exotic other’ in order to ‘make the strange familiar’. During the latter half of the twentieth century, a second objective was made explicit, namely to use such descriptions to reflect on how ‘our own common sense is structured’. The anthropologist George Marcus, in writing about the techniques and uses of ethnography in a globalized world at the end of the twentieth century, calls for a significant shift in the orientation of ethnographers away from an emphasis on localized, discrete societies. If the findings of ethnographic projects are to have significance beyond anthropological circles, he argues, then they should be multisited. Marcus insists that no one site can any longer be regarded as insular; documenting the worldwide networks in which linked sites are embedded, and giving voice to all involved actors, powerful and otherwise, wherever they reside, is crucial. This does not necessarily mean literally visiting a string of field sites but rather documenting how larger forces, both past and present, impinge on local sites. Giving voice to peoples whose opinions and experiences are rarely heard or known has been common anthropological practice. Such research continues to be important, but taking a multisited approach allows the study of the many factors affecting an object or phenomena under investigation, and permits the inclusion of a multiplicity of perspectives, for example, those of experts, policymakers and health care practitioners, in addition to those with less power.

Marcus cautions, particularly when portraying the positions of those in power, that it is important to interrogate key categories that appear commonsensical and are used unreflectively by researchers, practitioners and policymakers. A multisited ethnographic approach can question ontological assumptions about what are ‘natural kinds’, that is, what is assumed to be ‘real’ and fundamental. Epistemological assumptions about how we should go about establishing what we want to know are also interrogated. One effect of a multisited approach is to highlight how scientists, health policymakers and the public are caught up in culturally informed realities that are sometimes mutually reinforcing and at other times divisive. Disputes amongst scientists and clinicians, as well as competing positions taken by government factions, advocacy groups and affected families and individuals, are made visible by means of ethnography and archival research. For example, research on HIV should include interviews with experts and policymakers who seek to change sexual behaviour through HIV prevention programmes and not be limited solely to individuals who are targeted by these programmes. Current debates about the role of male circumcision, abstinence or condom use in HIV prevention require that the beliefs and practices of people employed by NGOs, development agencies, and international organizations be explicated, and not solely the ‘culture’ of their intended ‘beneficiaries’.

A good number of medical anthropologists have made use of ethnography over the past 30 years to examine some of the unexamined assumptions embedded in biomedicine. This differs from the manner in which ethnographic methods are used in much qualitative health research for more descriptive purposes. A critical use of ethnography reveals hidden logics in the creation of biomedical categories of disease, the manner in which populations are delineated, and other fundamental assumptions about what constitutes a natural fact. The idea of the gene, for
example, is presently undergoing a transformation in the minds of many scientists and is no longer understood as a singular material entity, the beginning and end of which is readily delineated. In the ‘postgenomic era’ it is recognized that very few genes code for a single protein; the majority respond to environmental stimuli internal and external to the organism and, furthermore, work in concert with numerous other genes. To think of a gene as an isolable entity is inappropriate; genes determine nothing and as such have little explanatory power – an insight that has enormous repercussions for predicting genetic risk, to be explicated in Chapter 11. Similarly, until relatively recently it was believed that nerve tissue could not regenerate. That belief is now thoroughly overturned and extensive brain ‘plasticity’ is recognized amongst neuroscientists, also with significant scientific and social repercussions.

This book is not itself an ethnography, but in creating our arguments we have drawn extensively on ethnographic research that we find particularly helpful in revealing entanglements amongst biology, history, politics, economics and cultural values, with an emphasis on the global circulation of biomedical technologies. Wherever they live, the vast majority of people are by no means passive recipients of new technologies, and a variety of disputes and responses are evident in any given setting. Attention to these responses, as highlighted in the following chapters, shows the severe limitations of a top-down approach to the implementation of biomedical technologies.

We are concerned with the way in which culturally infused assumptions are embedded in scientific knowledge, health policymaking, and clinical care and the significant consequences of these assumptions for local populations. The cultures of the organizations associated with biomedicine and of health care workers are often more pertinent factors in shaping the outcomes of public health initiatives than are the values held by targeted populations, yet are studied only rarely. We discuss the several bodies of knowledge, unexamined assumptions, and expectations evidenced amongst the many actors participating in medically related projects, including politicians, NGOs, basic scientists, clinicians, patients, families and communities.

We also consider the implementation of biotechnologies at local sites, wherever their origin – global, regional or local – giving recognition to the ever-present possibilities for fluidity, transformation and surprise. It is clear that culturally infused values have relevance both for the reception of biomedical technologies and the uses to which they are put or, alternatively, their rejection, as was the case in the United States during the George W. Bush administration in connection stem cell technology that made use of discarded human embryos. In a very different setting in eastern Sierra Leone in the wake of the Ebola epidemic, some secret societies – specific to certain ethnic groups in the area – began to make use of the protective gear (positive pressure personal protection suits, referred to colloquially as ‘moonsuits’) that health workers used when tending to those afflicted with the highly infectious and deadly virus.

The book is divided into five major sections. Each section opens with a brief introduction about its overall objectives and short summaries of the chapters that follow.
Section 1