The Return of the White Plague

Global Poverty and the 'New' Tuberculosis

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devastating effect on global public health and threaten to overwhelm the prospects for greater social cohesion and economic development. Whilst new technological advances may play a useful role in the treatment of TB the eventual eradication of the disease will rest on wider structural changes in modern societies. Most sufferers from TB have limited political and economic power and their plight remains of only marginal significance in global affairs. Yet the corrosive effect of ill health on social development threatens to expose the specious logic behind a new world order in which much of humanity is condemned to poverty and serfdom. If there is one lesson to be learned from the diseased cities of nineteenth-century Europe and North America, it is that the contemporary global public health crisis will be solved not by medical intervention but by political transformation.

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Immigration, Race and Geographies of Difference in the Tuberculosis Pandemic

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For nearly five months, anyone of Tibetan origin who has come to the Peace Bridge just north of Buffalo, N.Y., has been immediately segregated from others trying to cross into Canada, forced to don a bright yellow surgical mask and wait outside the Canadian immigration office, no matter the weather. . . . The Tibetans are eventually taken, usually by taxi with a driver who also wears a mask, to a doctor in Niagara Falls, who gives them a chest X-ray. Only when the doctor pronounces them TB-free can the Tibetans proceed. Even then, Canadian agents at the border have sometimes greeted the bewildered immigrants in biohazard jumpsuits.[1]

Italy next weekend enters the Schengen Agreement in favour of the free movement of people within most of Europe's borders, raising the spectre of a surge of illegal, diseased and violent Third World immigrants. . . . To survive in hiding, many illegal immigrants turn to crime, or live in unhealthy conditions. Doctors say such conditions help contagious diseases such as tuberculosis, which immigrants may have already contracted elsewhere, to manifest themselves after their arrival.[2]

Some state agencies expressed fears that the opening of the checkpoints would encourage the influx of Karen and Burmese immigrants into Thailand and these aliens might

bring with them contagious diseases such as tuberculosis, elephantiasis, syphilis, malaria and leprosy.[3]

In the years since 1993, when the World Health Organization (WHO) declared tuberculosis a 'global health emergency', numerous observers have argued that any response to this disease must be international in scope, and requires the collaborative effort of both developed and developing nations.[4] However, as the above quotations illustrate, the resurgence of TB has also been met with a renewed concern over the borders that separate people, particularly those borders associated with the nation-state. This concern is supported by overwhelming evidence of significant disparities in TB morbidity and mortality according to race, ethnicity and place of birth. In a number of countries, higher case rates of TB and mortality among immigrants and racial and ethnic minorities have presented public health officials with a dilemma: how do they address significant disparities in health while maintaining policies and practices that are equitable, just and non-discriminatory?

Using insights from history, social science and public health, this chapter examines the role that health disparities and national borders play in international responses to the TB pandemic.[5] In the past, both the association of disease with immigrants, and the recognition of racial and ethnic health disparities have been accompanied by the stigmatization of socially marginalized populations. The widespread discrimination that has accompanied the recent HIV/AIDS pandemic reminds us that these pernicious social responses are still a very real danger.

There is also the danger that uncritical interpretations of statistics on health disparities will oversimplify what is in fact an extraordinarily complex disease. The disproportionate burden of TB on certain populations is seldom the result of a single obvious cause. Moreover, while statistics often appear incontrovertible, the appropriate interpretation of and response to them is not. Any social or public health policy that seeks to address these health disparities must take into account the fact that both the production of official statistics and the subjective interpretation of them take place within national and social contexts laden with debates over racial, ethnic and national difference.[6]

Disease, borders and difference

Scientists and public health officials have responded to differential TB morbidity and mortality rates in several ways. One strategy has been to assume that health disparities are caused by essential differences between people – that is, that TB disproportionately affects certain populations because they are intrinsically different in some way. Under this essentialist view, biological, physiological, genetic or cultural differences cause certain people to be more or less susceptible to TB infection, activation or mortality. As a consequence, if TB morbidity or mortality is higher among certain racial or ethnic groups, it is because those groups are essentially different in some way.

Essentialist explanations for health disparities have often been expressed as origin narratives. A group of people disproportionately affected by a disease is identified as the *cause* or the *source* of that disease, and is seen as a threat to the public's health. In this way, a particular disease is identified as somehow coming from outside – whether that 'outside' refers to a foreign country, or simply to a group of people who in some way are seen as outside the 'general population'. For example, during the early 1980s the recognition that Haitians seemed to suffer disproportionately high rates of HIV/AIDS led many Americans to identify Haiti as the historical 'source' of this disease. This identification was later proved to be wholly erroneous.[7]

Essentialism has also often been expressed in geographical terms. The association of infectious disease with outsiders, especially during periods of the expansion of international migration and commerce, has a long history. The derogatory epithets most commonly directed against immigrants have perennially been 'dirty' and 'diseased'. Since the early sixteenth century, syphilis has alternatively been known as 'morbus gallicus' (the French pox) in Italy, 'le mal de Naples' (the disease of Naples) in France, 'the Polish disease' in Russia, 'the Russian disease' in Siberia, 'the Portuguese disease' in India and Japan, 'the Castilian disease' in Portugal, and 'the British disease' in Tahiti.[8] During the successive waves of immigration to the USA in the late nineteenth and early twentieth centuries, Americans frequently blamed immigrants for the spread of various infectious diseases. In the most famous instance of nativist anxieties determining public health policy, the Irish immigrant Mary Mallon – popularly known as Typhoid Mary

– was incarcerated for twenty-five years on a small island near New York City.[9] More recently, having first identified Haiti as the geographical origin of the HIV/AIDS epidemic, Americans subsequently relocated its origin to Africa. Conversely, the Soviet Union, Japan and Germany blamed the USA for the origin and spread of the disease.[10]

In the last decade of the twentieth century, concerns over the porousness of national borders in a globalizing era framed US and European responses to new and emerging infections. The intensification of international travel and commerce has led to increasing anxiety among affluent residents of the industrialized West, who are increasingly fearful that they are under siege by infectious diseases hitherto thought to be confined to developing nations.[11] This is perhaps best illustrated by US media coverage of a 1994 outbreak of the Ebola virus in Zaire (now Democratic Republic of Congo), which made clear the renewed fear that foreigners might be vectors of a deadly disease: 'We want to know whether Ebola is headed *our* way. Could it reach critical mass in a Third World capital, then engulf the globe? And what if Ebola somehow mutated into an airborne form? Could coughs and sneezes become the agents of mass death?'[12]

TB has also long been associated with racial and ethnic difference.[13] At the turn of the last century, American nativists called TB 'the Jewish disease', despite contemporary evidence that demonstrated lower rates of TB among Jewish immigrants than among native-born Americans. American Southerners believed that African-Americans suffered from a peculiar form of 'negro consumption', and eugenicists, blaming Italian, Jewish and Irish immigrants for importing TB into the USA, argued for selective breeding and strict immigration restrictions.[14] Essential racial, ethnic and cultural differences were also constant reference points for European colonials' explanations of health disparities in Africa and South Asia during the nineteenth and early twentieth centuries.[15]

Essentialism has often proved attractive for a number of reasons. First, it has allowed observers to reduce a complex problem, involving a number of different causal factors, to a clear and distinct problem with a single cause. This reductionism has been practically useful in numerous arenas: in epidemiology, it has facilitated the gathering of basic statistics on the distribution of the disease over time and across space; in public health, it has enabled the provision of efficient, specific and cost-effective targeted interventions in an era in which funding for TB has been severely constrained; and in the political arena it has

facilitated the implementation of policies designed to prevent the spread of the disease. Reductionism has also been politically attractive in a negative sense, allowing pre-existing racist or nativist sentiments to be clothed in the garb of objectivity and scientific authority, and leading to victim-blaming and stigmatization of socially marginalized groups as disease-ridden.[16]

Essentialism has also been attractive because it explains phenomena in terms of 'natural' characteristics that are observable and immutable. Again, this has a practical utility, as it encourages scientific study of the biological or physiological roots of a problem. However, it has also been used as a justification for failing to address the problems of socially marginalized populations. If certain social groups suffer from higher rates of disease because of essential physical differences, then social policy is (under this argument) powerless to address health disparities. This style of thinking is illustrated by a comment by Montana Lieutenant Governor Dennis Rehberg, who bluntly noted in 1994, 'The problem with AIDS is: you got it, you die. So why are we spending money on the issue?'[17]

Essentialism is by no means the only framework available to those who wish to understand and respond to the contemporary TB pandemic. Many public health researchers have adopted 'anti-essentialist' methods of explaining health disparities, emphasizing the contingent and multi-factoral causes of TB morbidity and mortality. Rather than focusing on the tuberculosis bacillus as the single cause of TB, the anti-essentialist viewpoint argues that multiple factors – including poverty, nutrition, homelessness, residential crowding, drug and alcohol use, institutionalization (in hospitals, shelters, and detention facilities such as prisons and refugee camps), and access to health care – contribute to both the spread of infection and the incidence of active cases. These factors are neither natural nor immutable. Rather, they are contingent upon more general social conditions which display immense historical and geographic variability. For these reasons, TB has often been referred to as a 'social disease', or 'poverty's penalty'.[19]

The distinction between essentialist and anti-essentialist theories of disease causation is important because it shapes the ways in which public health officials respond to health disparities. If TB is the result of a number of contingent causes, then disparities according to race, ethnicity or place of birth may be more closely associated with the present social or economic conditions of a group than with some

essential biological or cultural difference. And if this is true, then an appropriate response would not focus on determining or preserving essential differences between racial, ethnic or national groups, but instead would target contingent social and economic conditions.[20] An anti-essentialist understanding of health disparities, rather than assuming that pre-existing categories such as race, ethnicity and nationality necessarily predetermine health disparities, would enquire into the ways in which contingent factors – such as social and economic justice – are mapped onto differences in morbidity and mortality.

Immigration: a cause of the spread of TB

It has become commonplace in a number of nations to identify immigration as a 'cause' of the rising incidence of TB. This observation is supported by substantial epidemiological evidence that, in the developed world at least, TB appears to be imported from elsewhere. As summarized in Table 2.1, studies conducted throughout the 1990s attributed a large proportion of cases in North America, Western Europe and Australia to the foreign-born. In some areas, the observed rates of TB among immigrants have been astonishing. In Western Australia, for example, immigrants accounted for 88 per cent of cases, while in the Netherlands incidence rates of TB in the Somalian community were 1,000 per 100,000 person-years – 200 times the Dutch national rate.[21]

Changes in TB case rates among immigrants have received the most attention in the USA. Between 1986 and 1994, the foreign-born accounted for 25.8 per cent of the total reported cases of TB, and their case rate was more than four times that of people born in the USA. They also have been identified as the most significant contributor to the overall increase in cases in the USA. Between 1985 and 1992, the foreign-born accounted for 60 per cent of the total increase in reported cases, with five border states (New York, New Jersey, Florida, Texas and California) accounting for a full 92 per cent of the increase. Over the next three years, cases in the foreign-born increased 10.6 per cent, while those in the US-born decreased 24 per cent. By 2000, the foreign-born accounted for 40 per cent of cases in the USA, upwards of 50 per cent in many European countries, and 80 per cent in Australia.[22] Recently, immigrants have also been identified as the source of increasing rates of drug-resistant TB worldwide.

Table 2.1 Percentage of TB cases attributed to the foreign-born, by country.

Country/Region	Percentage of reported cases of TB attributed to the foreign-born	Date of report
Australia	73	1992
Western Region	88	1997
Canada	57.8	1995
Southern Alberta	70.6	early 1990s
Montreal	77.3	early 1990s
Denmark	38	1991
Israel	57*	1999
Italy	22.8	1999
Netherlands	56	1997
New Zealand	66	1997
Sweden	41	1991
Switzerland	51	1991
USA	36.1	1996
California	66.2	1995
Los Angeles	62	1993
New Jersey	37	1995

* Cases of MDR-TB only

Sources: Australia: Mario C. Raviglione *et al.*, 'Global Epidemiology of tuberculosis: Morbidity and Mortality of a Worldwide Epidemic', *Journal of the American Medical Association*, vol. 273:3 (18 January 1995): 220–26. Canada: E. Anne Fanning, 'Globalization of Tuberculosis', CMAJ, vol. 158:5 (10 March 1998): 611. Denmark, Sweden and Switzerland: Raviglione *et al.* Israel: J. Sosna, *et al.*, 'Drug-resistant Pulmonary Tuberculosis in Israel, A Society of Immigrants: 1985–1994', *International Journal of Tuberculosis and Lung Disease*, vol. 3 (August 1999): 689–94. Italy: L. R. Codecasa *et al.*, 'Tuberculosis Among Immigrants from the Developing Countries in the Province of Milan, 1993–1996', *International Journal of Tuberculosis and Lung Disease*, vol. 3 (July 1999): 589–95. Netherlands: R. Bwire, 'Tuberculosis Screening Among Immigrants in The Netherlands: What is Its Contribution to Public Health?' *Netherlands Journal of Medicine*, vol. 56 (2000): 63–71. New Zealand: Adrian Harrison, 'Tuberculosis in Immigrants and Visitors', *New Zealand Medical Journal*, vol. 112 (24 September 1999): 363–5. USA: S. Jody Heymann *et al.*, 'The Need for Global Action Against Multidrug-Resistant Tuberculosis', *Journal of the American Medical Association*, vol. 281:22 (9 June 1999): 2138–40; Raviglione *et al.*; Kathryn DeRiemer, 'Tuberculosis Among Immigrants and Refugees', *Archives of Internal Medicine*, vol. 158 (13 April 1998): 753–60; Zhiyuan Liu, 'Distinct Trends in Tuberculosis Morbidity Among Foreign-Born and US-Born Persons in New Jersey, 1986 Through 1995', *American Journal of Public Health*, vol. 88 (July 1998): 1064–7.

After reviewing the sobering epidemiological evidence of disparities in health according to place of birth, many observers have concluded that increased immigration is a significant cause of the rising incidence of TB in the developed world. This has led public health officials to recommend a range of responses, from better policing of national borders and tighter controls on legal and especially illegal immigration, to better screening and treatment of the people crossing those borders.[23] However, framing the problem of international TB control in these terms raises a number of difficult issues with regard to epidemiology, public health and social policy.

National borders and the politics of blame

The identification of immigration as a cause of increased TB case rates focuses attention on the bodies of people crossing international borders. This focus is rhetorically useful, in that it alerts the often-complacent lawmakers and citizenry of the industrialized West to the importance of investing in international TB prevention and control. On a more practical level, governmental institutions are already in place to process and monitor the movement of bodies across national borders, providing a convenient location for data collection and preventive public health measures.

Yet the close association of immigrants and disease also raises the ugly spectre of racist and nativist hatred and the scapegoating of immigrants for social problems.[24] While it may be convenient to regard such beliefs as relics of the past, the 1980s and 1990s saw a marked resurgence of nativist and anti-immigrant sentiment in the industrialized nations of Western Europe and the USA, precisely the countries that consider themselves to be under siege by TB carried in from outside. A 1994 *Journal of the American Medical Association* report claiming that the foreign-born were responsible for 60 per cent of the recent increase in TB in the USA attracted the interest of anti-immigration groups such as the Federation for American Immigration Reform, which invoked the threat of tubercular immigrants as a justification for cracking down on legal and illegal immigration. In the same year, voters in the state of California passed Proposition 187, a statute that prohibited publicly funded facilities from providing non-emergency medical care to illegal immigrants.[25] In addition, it required

such facilities to verify the immigration status of prospective patients, and to notify the Immigration and Naturalization Service and the Attorney General of California if they suspected that a patient was an illegal alien, thus effectively transforming physicians into border police. Though eventually ruled unconstitutional in a federal court, this proposition inspired the introduction of several federal bills aimed at eliminating social services for illegal immigrants. As numerous observers noted at the time, the immigration and welfare reform policies of the 1990s discouraged immigrants from seeking care out of fear of the immigration authorities and, in some extreme cases, these policies denied care to potentially infectious individuals.[26]

It is also important to note that 'immigrant' is an extremely ambiguous term.[27] Two contrasting definitions of this word uneasily coexist. On the one hand, the term seems to denote a contingent property, pertaining to the recent movement of bodies in space: an 'immigrant' is someone who crosses a national border, often with the purpose of eventually residing in the destination country. However, most of the institutions of the nation-state (such as the Immigration and Naturalization Service in the USA) do not treat all such border crossings similarly, as international travellers and workers are exempt from the screening that 'immigrants' must undergo. Not all bodies that cross national borders are immigrant bodies.

On the other hand, in the social and political arenas, 'immigrant' is often used less as a description of the contingent movement of bodies through geopolitical space, and rather more as a description of (or proxy for) essential racial or ethnic characteristics. Much of the anti-immigrant sentiment in the USA and Western Europe is a reaction to the presence of racial or ethnic minorities rather than to the movement of bodies in space.[28]

The difficulty is that there is considerable slippage between these two definitions of 'immigrant'. The social and medical response to the prevalence of TB among 'immigrants' cannot be disentangled from the symbolic definition of the nation-state and its citizenry; likewise, the legitimate observation that certain social groups might have a higher incidence of TB than others can too easily be transformed into fear and stigmatization of 'diseased and violent Third World immigrants'.[29]

Immigration and epidemiological knowledge

Blaming immigration for the recent rise in TB cases also obscures significant complexities in the dynamics of transmission of TB between individuals and populations. Since TB can remain latent for many years, careful distinctions must be made between TB cases that are the result of recent transmission (e.g., 'secondary cases'), and cases that are the result of reactivation of old infections. Using molecular epidemiological techniques, recent studies have demonstrated that most TB cases among immigrants to the USA are the result of reactivation of latent infections.[30] The activation of latent infections in recent immigrants is likely to be due to the peculiar stresses that they face during migration. Many are forced to move because of economic deprivation, natural disasters, political instability and wars in their home country.[31] During migration and upon arrival in their destination country, they are subject to a number of factors that contribute to the reactivation of TB infections. These include the stress of relocation, concurrent illness and poor overall health, poor nutrition, cramped living conditions in institutions such as refugee camps, hospitals, prisons and holding facilities, lack of access to adequate health care, and socioeconomic marginalization in the form of inadequate housing, low income and poor working conditions.

It is thus inaccurate to say that immigrants transport TB from one country to another. Most immigrants do not *transport* active cases of TB, but rather *develop* active cases within the first few years after their arrival.[32] The higher rate of TB among immigrants thus owes as much to the hardships they face during and shortly after migration, as it does to their country of origin. Focusing too closely on immigrants as vectors of disease conceals the causal roles played by inadequate health care and social and economic injustice in their destination country.

A number of recent studies also call into question the assumption that immigrants are a significant source of new infections in their destination countries. Studies of the transmission of TB in San Francisco found that, in eight of nine 'clusters' of TB cases (89 per cent), the direction of transmission was from US-born to Mexican-born individuals, not the reverse; the US-born, though accounting for only 27 per cent of the total cases, accounted for 51 per cent of the secondary cases.[23] Another study indicated that only 2 of 115 secondary cases in the US-born could be directly attributed to foreign-born sources, and a similar study in the UK found no evidence of cross-infection between immigrants from South Asia and the rest of the population.[34] The low incidence of transmission between foreign-born and native-born populations illustrates the danger of assuming that 'immigrants' – even those from high-prevalence countries – are responsible for transmission of TB to native-born populations. The fear of the 'threat' that immigrants present is not only politically alarming but also epidemiologically unsound. In addition, it indicates that social, geographic and economic borders between people *within* countries may be far more significant than the political borders *between* countries.

Finally, blaming 'immigration' for the increased incidence of TB vastly oversimplifies an extraordinarily complex problem regarding the causes of TB incidence and transmission. Focusing too closely on the role of individual carriers of the tubercle bacillus diverts attention from the more complicated socioeconomic and structural problems that contribute to the spread of TB. It is, for example, much simpler to identify Russians as potential carriers and screen them upon entry into the USA, than it is to interrogate the role of the recent 'shock therapy'-driven transition to a market economy in the explosion of TB in that country.[35] It is a time-consuming but easily intelligible task to divide the world geographically into 'low-incidence' and 'high-incidence' nations, identify people who cross the borders between these areas, and either prevent them from crossing these borders, or, more humanely, treat them once they do. It is a much less intelligible task to identify the complicated transnational factors of political economy responsible for the increased incidence in TB among socially and economically marginalized populations worldwide.

Health disparities and racial difference

As with immigration, there is considerable epidemiological evidence establishing a link between race, ethnicity and TB. Since the early 1970s, researchers have noted clear and alarming racial and ethnic disparities in infection rates, morbidity and mortality from TB.

Over the course of the twentieth century in the USA, mortality from TB declined more slowly in minority groups than the nation as a

whole, even following the mid-century chemotherapeutic revolution. The resurgence of TB in the 1970s and 1980s also affected racial and ethnic minorities disproportionately. Between 1985 and 1992, TB cases in the nation as a whole increased 20 per cent. However, there was a profound differential distribution according to race: during this period, TB cases increased 27 per cent among blacks, 75 per cent among Hispanics and 46 per cent among Asian/Pacific Islanders, but decreased 10 per cent among non-Hispanic whites, and 23 per cent among American Indians.[36] In 1993 in the UK, although they accounted for only about 5 per cent of the population, non-whites accounted for 56 per cent of the cases of TB (up from 16.4 per cent of cases in 1965).[37] We should also note that race and ethnicity do not necessarily map clearly onto nationality – indeed, some studies indicate that race is more important than place of birth as a risk factor for TB in the USA.[38]

While the evidence for racial and ethnic disparities in health is clear, the explanation for such disparities is not. To begin with, the categories of 'race' and 'ethnicity' have for some time been the objects of substantial controversy. For much of human history, these categories have been assumed to be essential forms of human difference – that is, rooted in fundamentally physical or biological characteristics, such as skin colour, blood type or genetic makeup. More recently, scientists and other scholars have argued that in fact these categories are 'social constructions' – that is, that race and ethnicity are social or cultural categories, and do not directly correspond to measurable physiological, biological or genetic differences.[39]

The impact of this reformulation of racial and ethnic categories on the understanding of health disparities is profound. On the one hand, if such differences are essential in nature, then one could reasonably assume that health disparities arise out of biological differences. Indeed, a number of scientists have speculated that genetic differences may be responsible for disparities in TB incidence between blacks and whites, though at this time no definite linkage between race, genetics and health disparities has been proved.[40] If, on the other hand, racial and ethnic differences are social constructions, then many health disparities cannot necessarily be explained by reference to physiology, biology or genetics.[41]

What then might account for the significant, measured racial and ethnic disparities in TB incidence and mortality? Two interconnected possibilities are likely: first, that disparities according to race and ethnicity are in fact the result of another variable, such as income level or access to health care; second, that despite their questionable physical or biological foundations, perceptions of racial and ethnic difference still have significant social consequences.

TB has long been recognized as a disease that targets the socially and economically marginalized, especially those who are poor, homeless, or confined to crowded institutions such as jails, prisons and shelters. In many countries, those categorized as racial or ethnic minorities are disproportionately represented among these groups – thus engendering a vicious cycle of stigmatization and social and economic marginalization. For example, in the USA, although they made up only one tenth of the total population, African-Americans have accounted for 38 per cent of the homeless – and in some urban areas this percentage has approached 80 per cent.[42] African-Americans have also been disproportionately more likely to be incarcerated in jails or prisons, to use intravenous drugs, and to be severely economically marginalized.[43] One contemporary study found that adjusting for six indicators of socioeconomic status (crowding, income, poverty level, public assistance, unemployment and education) accounted for roughly half of the racial disparity in TB case rates among native-born Americans.[44] Another study of TB rates in urban areas found that death rates of whites and blacks living in poor sections of a given city were generally almost three times – and in some cases as much as six times – the rate of those living in affluent areas. In a number of cities TB mortality rates among poor whites were significantly higher than among non-whites.[45]

It is difficult to disentangle fully the relationship between socioeconomic status and racial difference. However, it is clear that observed racial or ethnic disparities in health often obscure underlying disparities according to socioeconomic status, place of residence (for example, in areas with high rates of poverty, or with a high amount of residential crowding), and institutionalization rates. Disparities in health that may at first seem to arise from essential racial or ethnic differences are often in fact the result of contingent socioeconomic differences.[46] In addition, whether or not essential racial or ethnic differences exist, the perception that they do has important consequences. Recent epidemiological work indicates that racism and racial discrimination play a significant role in health inequalities, and contribute to higher rates of physical and mental health problems among racial minorities.[47] Social and economic

discrimination against racial and ethnic minorities often leads to higher rates of homelessness, incarceration, and lack of access to health care and social services, all of which are important risk factors for TB.[48]

For these reasons, researchers and policymakers must take great care in identifying the causes of, and the appropriate responses to, observed racial or ethnic differences in TB case rates. Even if scientists and social scientists are able to articulate the complex relationship between health, race and political economy in a fair and just manner, the historical record indicates that it can easily be oversimplified on the social and political level. Historical scholarship also alerts us to the role that racial discrimination can play in medical research and practice. Physicians and scientists, like other members of a society, often consciously or unconsciously exhibit the racial biases and essentializing tendencies prevalent in that society. In its most extreme forms, this has contributed to racist and unethical practices such as eugenics and the Tuskeegee Syphilis Study.[49] The likelihood that contemporary TB control efforts will replicate these ethical lapses is remote. However, it is worth noting that, in the past, the humanitarian motivations of public health workers have not always been enough to ensure that pernicious measures – such as forcible detention of 'unruly' populations of alcoholics and vagrants – will not be used to achieve the laudable ends of TB control.[50]

Rethinking geographies of difference

> Such cases [of transnational TB] remind us that much of the current literature conflates administrative boundaries with those of biological salience. Although turbulence may be introduced at national borders, they have proven ineffective in stopping the expansion of MDR-TB outbreaks. So too have prison walls and city limits.[51]

For those concerned about the global TB epidemic, thinking in terms of borders and difference is often immensely constructive. Epidemiologists ask how and why this disease affects some people more than others, and why some borders are more effective than others at containing its spread. Using the knowledge gained from epidemiological research on disease and difference, public health officials design

specific interventions targeted at those populations most at risk of developing TB. When compared to less specific programmes, targeted interventions are typically more efficient, cost-effective and successful at curing the sick and preventing the spread of the disease.

However, focusing on borders and difference brings risks as well as rewards. The historical record indicates that essentialist understandings of difference have played a role in the institution of some of the more pernicious nationalist and racist social policies during human history, and for this reason they should be deployed cautiously. An uncritical reliance upon essentialist understandings of difference risks introducing elements of stigmatization and racism into social policies and public health practices. Even the most scrupulously objective scientific study of health disparities can be misused in the public sphere. It is tempting to believe that scientific advances, such as the discovery of a new vaccine or a 'miracle drug', will eventually render the subjectivism of politics and social policy irrelevant. However, with the threat of drug-resistant TB increasing, it would be folly to wait for that time.

In addition, focusing on borders and difference may also ultimately obscure as much as it reveals about the incidence and transmission of infectious disease. In the future, successful global TB control will have to rely upon a fundamental reworking of these categories in epidemiology and public health. For example, researchers and public health officials would do well to think in *transnational* as well as *international* terms. This means focusing less on the transgression of borders by individuals, and more on the formation of transnational connections between spaces and populations once thought to be disconnected or insulated from one another. The notion that TB is transmitted from 'high-incidence' to 'low-incidence' countries may have less utility than a recognition that particular neighbourhoods in different cities are connected through transnational social networks that transcend national borders.[52]

Finally, future responses to TB will have to be built not upon an essentialized geography of national, racial or ethnic differences, but rather upon a transnational geography of contingent differences in levels of poverty, social justice, nutrition, employment and access to health care and adequate housing. The most salient observation for TB control in the future may be that TB, rather than being 'transported' across national borders, is activated in disparate locations by similar social conditions. A genuinely global response to the resurgent TB

pandemic does not simply mean that the affluent residents of the West should address the disease in other countries, either out of humanitarian concern or national self-interest. It means that we must fundamentally rethink the geographies of difference that influence the incidence and transmission of TB worldwide.

3

Gender and Tuberculosis: A Conceptual Framework for Identifying Gender Inequalities

Anna Thorson and Vinod K. Diwan

> Gender of itself is not the cause of morbidity and mortality in tuberculosis, but it is a powerful indicator of disadvantage, a marker of the many factors that influence health and the utilisation of health services.
>
> I. Smith[1]

Few scientific studies have been published on gender aspects of tuberculosis, even though TB kills more women than any other infectious disease, including malaria and AIDS, and available data show that more women die from TB than from all causes of maternal deaths put together.[2]

The concept of gender was introduced by the American anthropologist Gayle Rubin in 1975 in order to distinguish the predetermined biological characteristics of the sexes from the socio-cultural factors that create 'maleness' or 'femaleness' as well as the power relations between men and women.[3] The use of the term 'gender' instead of 'sex' served a purpose by taking a standpoint that opposed the essentialist view on femaleness and maleness as created by biological sex, and thus being predetermined and unchangeable. The fast development thereafter in feminist and gender research has given the concept of 'gender' new and wider definitions. The dichotomy of the division into biological sex and social sex (gender) and the conception of predetermination have been criticized by recent post-structuralist thinkers, who have suggested that sex should be viewed not as predetermined, but instead as gendered in itself.[4] This abstract concept would indicate that

81. See Paul Farmer, 'Social scientists and the new tuberculosis', *Social Science and Medicine*, vol. 44, 1997, pp. 347–58.
82. Eric Naterop and Ivan Wolffers, 'The role of the privatization process on tuberculosis control in Ho Chi Minh City Province, Vietnam', *Social Science and Medicine*, vol. 48, 1999, pp. 1589–98. See also P. Kamolratanakul *et al.*, 'Economic impact of tuberculosis at the household level', *International Journal of Tuberculosis and Lung Disease*, vol. 3, 1999, pp. 596–602.
83. Theodore H. Tulchinsky and Elena A. Varavikova, 'Addressing the epidemiologic transition in the former Soviet Union: strategies for health system and public health reform in Russia', *American Journal of Public Health*, vol. 86, 1996, pp. 313–23; R. Wallace *et al.*, 'The spatiotemporal dynamics of AIDS and TB in the New York metropolitan region from a sociogeographic perspective: understanding the linkages of central city and suburbs', *Environment and Planning A*, vol. 27, 1995, 1085–1108; R. Wallace and D. Wallace, 'The destruction of US minority urban communities and the resurgence of tuberculosis: ecosystem dynamics and the white plague in the de-developing world', *Environment and Planning A*, vol. 29, 1997, 269–91.
84. World Health Organization 1948 cited in Mildred Blaxter, 'Health', in William Outhwaite and Tom Bottomore, eds., *The Blackwell Dictionary of Twentieth-century Social Thought*, Oxford: Blackwell, 1993, p. 254.
85. World Health Organization, *TB – A Global Emergency*, Geneva: WHO, 1994.
86. Laurie Garrett, *Betrayal of Trust: The Collapse of Global Public Health*, New York: Hyperion, 2000; Claire Ainsworth and Debora MacKenzie, 'Coming home', *New Scientist*, vol. 171, 7 July 2001, pp. 28–33.

2 Immigration, Race and Geographies of Difference in the Tuberculosis Pandemic

This chapter contains material from Chapter 4 of my PhD thesis, 'Infectious disease in a world of goods', Harvard University, 2001. I would like to thank Orit Halpern, Allan M. Brandt, Jeremy Greene, David Jones, Julie Livingston, and Abena D. A. Osseo-Asare for helpful comments on earlier drafts of this chapter.

1. Susan Sachs, 'More screening of immigrants for TB sought', *New York Times*, 3 January 2000, p. A1.
2. Bruce Johnston, 'Italians fear new surge of illegal migrants', *Sunday Telegraph*, 19 October 1997.
3. Preecha Srisathan Kanchanaburi, 'New drive to promote regional trade links. Opening checkpoints "may spread diseases" ', *Bangkok Post*, 5 April 1998.

4. S. Jody Heymann *et al.*, 'The need for global action against multidrug-resistant tuberculosis', *Journal of the American Medical Association*, vol. 281, 9 June 1999, pp. 2138–40; David E. Griffith, 'The United States and worldwide tuberculosis control: a second chance for Prince Prospero', *Chest*, vol. 113, June 1998, pp. 1434–6; Charles D. Wells, 'A study of tuberculosis among foreign-born Hispanic persons in the US states bordering Mexico', *American Journal of Respiratory and Critical Care Medicine*, vol. 159, 1999, pp. 834–7. See also Patrick L. F. Zuber, 'Long-term risk of tuberculosis among foreign-born persons in the United States', *Journal of the American Medical Association*, vol. 278, 23 July 1997, pp. 304–7.
5. For providing a model for the role of historical scholarship in the analysis of contemporary epidemics, I am indebted to Allan M. Brandt's essay, 'AIDS in historical perspective: four lessons from the history of sexually transmitted diseases', *American Journal of Public Health*, vol. 78, April 1988, pp. 367–71.
6. For the sake of clarity and brevity, this chapter focuses primarily on the United States and, to a lesser extent, Western Europe. Many of the points contained in it are applicable to other parts of the world. However, it is important to note that American and European understandings of race and immigration are rooted in those countries' peculiar histories, and thus do not necessarily reflect the experience of other countries or regions.
7. Paul Farmer, *AIDS and Accusation: Haiti and the Geography of Blame*, Berkeley: University of California Press, 1992.
8. Roy Porter, *The Greatest Benefit to Mankind*, New York: W. W. Norton, 1997, p. 166.
9. Judith Walzer Leavitt, *Typhoid Mary: Captive to the Public's Health*, Boston: Beacon Press, 1996.
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11. This topic is covered in detail in my PhD thesis, 'Infectious disease in a world of goods'. See also: Joshua Lederberg *et al.*, eds., *Emerging Infections: Microbial Threats to Health In the United States*, Washington: National Academy Press, 1992; Board on International Health, Institute of Medicine, *America's Vital Interest in Global Health: Protecting Our People, Enhancing Our Economy, and Advancing Our International Interests*, Washington, DC: National Academy Press, 1997.
12. Geoffrey Cowley, 'Outbreak of fear', *Newsweek*, 22 May 1995, p. 52.
13. Often used inconsistently and without clear or precise definition, the terms 'race', 'ethnicity', and 'immigrant' present any researcher with a number

of problems. Each has long been recognized by scientists and social scientists alike as social constructs rather than essential biological characteristics, and there is considerable debate over whether these terms have any utility in the theory and practice of public health. In this chapter, I assume that – whether or not they are either 'real' or useful – the continued usage of these categories by social actors (including scientists, policymakers and lay people) has important ramifications on both health and health policy. See Nancy Kreiger, 'Refiguring "race": epidemiology, racialized biology, and biological expressions of race relations', *International Journal of Health Services*, vol. 20, no. 1, 2000, pp. 211–16; Lara Marks and Michael Worboys, 'Introduction', in Marks and Worboys, eds., *Migrants, Minorities and Health*, London: Routledge, 1997.

14. Georgina D. Feldberg, *Disease and Class: Tuberculosis and the Shaping of Modern North American Society*, New Brunswick: Rutgers University Press, 1995, pp. 104–9; Alan M. Kraut, *Silent Travelers: Germs, Genes, and the 'Immigrant Menace'*, Baltimore: Johns Hopkins University Press, 1994.
15. On the relationship between tuberculosis and racial and cultural difference, see the following: Mark Harrison and Michael Worboys, 'A disease of civilization: tuberculosis in Britain, Africa and India, 1900–39', in Marks and Worboys, eds., *Migrants, Minorities and Health*; Randall M. Packard, *White Plague, Black Labor: Tuberculosis and the Political Economy of Health and Disease in South Africa*, Berkeley: University of California Press, 1989, pp. 105–8.
16. David McBride calls this 'sociomedical racism'. See Chapter one of his *From Tuberculosis to AIDS: Epidemics Among Urban Blacks Since 1900*, Albany: State University of New York, 1991. See also: Kraut, *Silent Travelers*; Treichler, 'AIDS and HIV infection in the Third World'; Watney, 'Missionary positions'.
17. Quoted in 'Perspectives 1994', *Newsweek*, 26 December 1994, p. 85.
18. The terms 'essentialist' and 'anti-essentialist' are not used by public health researchers themselves. The distinction between strategies that emphasize essential and contingent differences is, of course, itself an oversimplification. The two approaches are not necessarily mutually exclusive, and observers often display a wide range of both responses simultaneously. Nevertheless, I believe that the distinction is useful as a heuristic device in evaluating political and public health responses to health disparities.
19. The classic source for the formulation of tuberculosis as a 'social disease' is Rene Dubos and Jean Dubos, *The White Plague: Tuberculosis, Man, and Society*, New Brunswick: Rutgers University Press, 1987 [1952]; see also Barbara Rosenkrantz's introductory essay to the Dubos volume; Kevin B. Weiss, 'Tuberculosis: poverty's penalty', *American Journal of Respiratory and Critical Care Medicine*, vol. 157, 1998, p. 1011.
20. The exact relationship between these factors and tuberculosis is extremely complicated, and has inspired considerable debate in a number of areas.

For example, a number of historians contend that changes in political economy – including rising standards of living and better sanitation and nutrition – rather than specific therapeutic or preventive efforts were responsible for the massive mortality decline in the nineteenth and early twentieth centuries. This debate has been carried into the present by those who wonder what is the most appropriate strategy to address TB in the future. The classic source is Thomas McKeown, *The Role of Medicine: Dream, Mirage, or Nemesis?* Oxford: Blackwell, 1979 [1976]. See also: Nancy J. Tomes, 'Essay review: the White Plague revisited', *Bulletin of the History of Medicine*, vol. 63, 1989, pp. 467–80; Leonard G. Wilson, 'The historical decline of tuberculosis in Europe and America: its causes and significance', *Journal of the History of Medicine and Allied Sciences*, vol. 45, July 1990, pp. 366–96; David S. Barnes, 'The rise or fall of tuberculosis in Belle-Epoque France', *Social History of Medicine*, vol. 5, 1992, pp. 279–90; Simon Szreter, 'The importance of social intervention in Britain's mortality decline, 1850–1914: a re-interpretation of the role of public health', *Social History of Medicine*, vol. 1, 1988, pp. 1–37; Amy Fairchild and Gerald Oppenheimer, 'Public health nihilism vs. pragmatism: history, politics, and the control of tuberculosis', *American Journal of Public Health*, vol. 88, July 1998, pp. 1105–17; Paul Farmer and Edward Nardell, 'Editorial: nihilism and pragmatism in tuberculosis control', *American Journal of Public Health*, vol. 88, July 1998, pp. 1014–15.

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22. Statistics for the United States from Zuber, 'Long-term risk of tuberculosis'; Nancy J. Binkin, 'Overseas screening for tuberculosis in immigrants and refugees to the United States: current status', *Clinical Infectious Diseases*, vol. 23, 1996, pp. 1226–32; P. L. Zuber *et al.*, 'Tuberculosis among foreign-born persons in Los Angeles County', 1992–1994', *Tuberculosis and Lung Disease*, vol. 77, December 1996, pp. 524–30; Michael F. Cantwell, 'Epidemiology of tuberculosis in the United States, 1985 through 1992', *Journal of the American Medical Association*, vol. 272, 17 August 1994, pp. 535–9.
23. Barbara Sibbald, 'Infected MD calls for tougher medical screening of newcomers to Canada', *Canadian Medical Association Journal*, vol. 160, 20 April 1999, pp. 1201; Michael D. Iseman and Jeffrey Starke, 'Immigration and tuberculosis control', *New England Journal of Medicine*, vol. 332, 20 April 1995, pp. 1094–5.
24. Kevin R. Johnson, 'Fear of an "Alien Nation": race, immigration, and immigrants', *Stanford Law and Policy Review*, vol. 7, 1996, pp. 111–26.
25. Since tuberculosis is not recognized as a medical emergency (unless it is

meningeal, pulmonary with respiratory failure, or involves massive haemoptysis), Proposition 187 effectively prevented tubercular immigrants from receiving a timely diagnosis and treatment.

26. Kimberly A. Johns and Christos Varkoutas, 'The tuberculosis crisis: the deadly consequence of immigration policies and welfare reform', *Journal of Contemporary Health Law and Policy*, vol. 15, Fall, 1998, pp. 101–30; Julia A. Martin, 'Proposition 187, tuberculosis, and the immigration epidemic?' *Stanford Law and Policy Review*, vol. 7, 1996, pp. 89–109; Guido S. Weber, 'Unresolved issues in controlling the tuberculosis epidemic among the foreign-born in the United States', *American Journal of Law and Medicine*, vol. 22, 1996, pp. 503–36; Steven Asch, 'Does fear of immigration authorities deter tuberculosis patients from seeking care?' *Western Journal of Medicine*, vol. 161, October 1994, pp. 373–6.
27. The following argument also applies to its more palatable but no less ambiguous cousin, 'foreign-born'.
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29. Johnston, 'Italians fear new surge of illegal migrants'.
30. P. M. Small *et al.*, 'The epidemiology of tuberculosis in San Francisco: a population-based study using conventional and molecular methods', *New England Journal of Medicine*, vol. 330, 16 June 1994, pp. 1703–9; C. R. MacIntyre and A. J. Plant, 'Longitudinal incidence of tuberculosis in South-East Asian refugees after resettlement', *International Journal of Tuberculosis and Lung Disease*, vol. 3, April 1999, pp. 287–93; Bwire, 'Tuberculosis screening among immigrants in the Netherlands'.
31. N. W. Schluger, 'The impact of drug resistance on the global tuberculosis epidemic', *International Journal of Tuberculosis and Lung Disease*, vol. 4, p. S74.
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33. R. M. Jasmer *et al.*, 'Tuberculosis in Mexican-born persons in San Francisco: reactivation, acquired infection and transmission', *International Journal of Tuberculosis and Lung Disease*, vol. 1, 1997, pp. 536–41; M. W. Borgdorff *et al.*, 'Transmission of tuberculosis in San Francisco and its association with immigration and ethnicity', *International Journal of Tuberculosis and Lung Disease*, vol. 4, April 2000, pp. 287–94. See also Matthew T. McKenna, 'The epidemiology of tuberculosis among foreign-born persons in the United States, 1986 to 1993', *New England Journal of Medicine*, vol. 332, 20 April 1995, pp. 1071–6.
34. On the US, see Daniel P. Chin *et al.*, 'Differences in contributing factors to tuberculosis incidence in US-born and foreign-born persons', *American Journal of Respiratory and Critical Care Medicine*, vol. 158, 1998, pp. 1797–1803; Kathryn DeRiemer, 'Tuberculosis among immigrants and refugees', *Archives of Internal Medicine*, vol. 158, 13 April 1998, pp. 753–60. On the UK, see Peter Ormerod, 'Screening immigrants at risk of tuberculosis', *British Medical Journal*, vol. 308, 12 March 1994, pp. 720–1.
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3 Gender and Tuberculosis: A Conceptual Framework for Identifying Gender Inequalities

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6. E. M. Rathgeber and C. Vlassoff, 'Gender and tropical diseases: a new research focus', *Social Science and Medicine*, vol. 37, 1993, pp. 513–20.
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