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EID, Security and Global Poverty

The EID category was coined as an attempt to refocus the scientific community, US politicians and the public, onto the threat that infectious diseases continued to pose (to Americans). The authors of this new category were astonishingly successful in achieving their goal. The term 'emerging infectious diseases' may remain obscure for most lay people, yet even so, the central concept behind the EID concept has gained wide currency in both scientific and lay discourse. That central idea is that infectious diseases are no longer a thing of the past, but are re-emerging to threaten 'us' (in the developed world). The proposition that infectious diseases are re-emerging has become, in effect, common sense.

As discussed in the previous chapter, since it was coined in the early 1990s, the EID concept has also become the template by which new concerns about bioterrorism came to be understood. However, as well as concerns about the possibility of terrorists deliberately using infectious germs as weapons, by the beginning of the twenty-first century, even naturally occurring epidemics of EID were also being described as a security threat.

EID as a security threat

During the Cold War, the term 'security' was understood in the sense of 'national security', as the absence of armed conflict, and 'security' was polarised around the ideological interests of the two superpowers. However, through the 1990s, the USA, together with international bodies such as the UN, began to give more attention to threats arising from mass migration, civil unrest and localised wars. 'Security' became increasingly redefined in terms of 'human security' (Chen & Narasimhan, 2003; Heymann, 2003). Issues that degraded the quality of

life, such as demographic pressures or lack of access to resources, were thus recast as 'security threats'. This broadening of the notion of security was also extended to EID because of their disruptive potential. A number of think-tank reports linked EID directly with US national interests. For example, the Santa Monica-based RAND Corporation, which argued that threats to US security arose not only from military aggression, but increasingly from non-traditional, transnational so-called 'grey area' phenomenon, such as the drug trade, terrorism, and infectious diseases (Brower & Chalk, 2003).

In 2000, a US National Intelligence Council report, *The Global Infectious Disease Threat and its Implications for the United States*, argued:

New and re-emerging infectious diseases will pose a rising global health threat and will complicate US and global security over the next 20 years. These diseases will endanger US citizens at home and abroad, threaten US armed forces deployed overseas, and exacerbate social and political instability in key countries and regions in which the United States has significant interests. (National Intelligence Council, 2000: 5)

Although all EID were said to pose a threat to peace and security in the US and the rest of the world, it was HIV/AIDS specifically that was regarded as a particular threat to security. In 2000, the United Nations Security Council passed a resolution addressing HIV/AIDS as a threat to international peace and security, to the viability of states and to economic development. This was the first time that the council had portrayed a health issue as a threat to security. Their concerns were focused on certain countries in Africa, and increasingly on Ukraine, China and India. In the same year, President Clinton provoked much controversy and comment when he announced that HIV/AIDS constituted a threat to US national security interests.

HIV/AIDS evidently poses a threat to the security of certain countries in sub-Saharan Africa, in terms of the pandemic's potential to damage their political institutions, military capacity, police force and health-care systems. The pandemic also has the potential to unravel traditional systems of social support in developing countries, and undermine development gains as skilled workers are lost and foreign investment reduced (Heymann, 2003). The argument is made that HIV/AIDS, combined with poverty, can cause states to fail, and failed states are unable to stem the growth of terrorist groups such as Al Qaeda within their borders, which in turn threaten the security of the USA. However, there are still

several leaps of unsubstantiated argument involved in connecting the HIV/AIDS epidemic *in Africa* to a putative threat posed to the security of Americans *in America*. Indeed, subsequent analyses have also rejected the notion that the disease was likely to cause widespread social instability in other countries, for example in Russia, where the disease is largely confined to certain groups (Ingram, 2005).

This 'securitisation' of EID poses several difficulties: One danger is that portraying EID as a 'security threat' works against ongoing efforts to normalise attitudes to those people affected by them, such as people living with HIV/AIDS. Another danger of framing EID in the language of security is that it risks pushing responses to them away from civil society, such as humanitarian relief for the poor, and towards immigration, military and intelligence services, with their power to override civil liberties. The discourse around HIV/AIDS and security in Africa often focuses on the role of the African armed forces, which are regarded as a 'high-risk' group. This has led to international policy interventions to educate soldiers and raise awareness of 'safer sex', when the most obvious behaviour change that needs to take place is for soldiers to stop raping women (Elbe, 2008).

In 2003, following the designation of HIV/AIDS as a threat to global security, and also as a result of lobbying by evangelical Christians and African-American groups with long-standing interests in HIV/AIDS and Africa, President Bush launched the President's Emergency Plan for AIDS Relief (PEPFAR). Bush pledged US\$15 billion over five years, US\$1 billion of which was earmarked for the Global Fund to Fight HIV/AIDS, Tuberculosis and Malaria. The money was to be channelled through the US State Department and US embassies rather than through established international health agencies (Ingram, 2007). As a result of PEPFAR, 970,000 people were able to access anti-retroviral drugs, compared to 5,000–10,000 previously. PEPFAR aimed to prevent seven million HIV infections, to provide treatment for two million people, and care for ten million AIDS patients (Fauci, 2006). Before the 2007 G8 summit, Bush announced a further US\$30 billion to continue the programme. In July 2008 the US Congress increased the PEPFAR budget by a further US\$39 billion for AIDS, as well as US\$5 billion for malaria and US\$4 billion for tuberculosis (Kaufmann, 2009).

However, PEPFAR has been heavily criticised for the way its funding was directed towards initiatives judged on moral rather than scientific criteria. For instance, PEPFAR insisted that every recipient of aid money sign a declaration expressly promising not to have any involvement with sex workers (Goldacre, 2008); 50 per cent of the money

was channelled through non-governmental organisations (NGOs) and faith-based organisations; and 33 per cent of prevention funds (US\$1.06 billion) was earmarked for programmes promoting abstinence from sex until marriage. PEPFAR's moralising was directed at African societies who were themselves undergoing religious revivals on the model of the American evangelical mega-churches. For many, PEPFAR was a cynical attempt at 'soft hegemony' by the Bush administration. Although the entire project was funded by the US taxpayer, it was called the 'President's' plan, rather than the US (taxpayer's) plan, or the global plan for AIDS relief. PEPFAR was announced while the USA was preparing for war in Iraq, in an atmosphere of international protests against US militarism and accusations of xenophobia. Bush called PEPFAR 'a work of mercy – to help the people of Africa', and it was designed to rebut these accusations (Pisani, 2008).

The resistance to initiatives such as PEPFAR as 'imperialist' was also expressed in relation to the WHO-sponsored campaign to eradicate poliomyelitis. The campaign, launched in 1988, had led to a worldwide decline in annual polio cases from 35,251 to 1499 by 2005. At one stage the WHO was predicting that polio would be eradicated by 2005, although cases of wild polio virus continued to be reported from Northern Nigeria. The campaign then had to be suspended in Niger and Nigeria in 2005 as a result of local resistance, and soon polio outbreaks began to occur again there, and spread to other African countries and subsequently to Asia. Although resistance to the polio vaccine has been widely attributed to Nigerian Muslims' beliefs that the vaccine was contaminated with anti-fertility substances as a plot to reduce Muslim populations, there were also other more complex reasons for their refusals to vaccinate. Local people questioned the focus on polio, the vaccine for which was free, which they felt diverted resources from other more pressing primary health care needs, such as malaria, the medicines for which they had to pay for. Local resistance to polio vaccination was based partly on the feeling that malaria and measles were a more serious threat to their children, and people felt they had no say in which health problems were being addressed (Renne, 2006).

EID and post-colonialism

The 'securitisation' of infectious diseases, and the moralising of PEPFAR, echoed the colonial and missionary projects of the nineteenth century. Historical parallels can be drawn between EID and the creation of another medical speciality – Tropical Medicine – a hundred years

earlier. While white Europeans could settle the Americas, South Africa, New Zealand and Australia, their inability to deal with malaria and other tropical diseases meant that they were unable to displace native populations in Africa, where Europeans had to limit themselves to the role of financiers and supervisors. Central Africa remained a black continent only because it was the white man's grave (Dubos, 1959). The founding of Schools of Tropical Medicine in Liverpool in 1898 and in London in the following year were thus explicitly linked to colonial politics and imperial expansionism. The Victorian debate about Tropical Medicine centred on the capacity of white bodies to adjust to the pathogenic, medical, moral and cultural climate of the tropical world. The tropics was a place where temperance and morality, such as avoiding inter-racial liaisons, were regarded as essential for survival as acquired immunity and medication (Livingstone, 1999).

Ignorance of actual distribution of disease in colonial populations led nineteenth-century medical and social theorists to assume that the different races were immune to diseases of their homelands, and equally that races would be susceptible to foreign diseases (Anderson, 1996). Although the export of Western medicine (and religion) was one of the chief justifications offered for colonialism as a humanitarian endeavour (King, 2002), in fact the European powers', and later US, interests in colonial public health were to assure the health of white soldiers, traders and settlers. Only later was the focus widened to include the health of indigenous populations, although except for male workers, these improvements were a negligible and secondary side-effect.

If the late nineteenth-century creation of Tropical Medicine related to the vulnerability of white populations to tropical infections in colonial outposts, another concern for the Victorians was that the poor on their own doorsteps also posed a risk of contagion. Again and again, Dickens's novels contain warnings of how all strata of society were vulnerable to the diseases that rampaged, unchecked, through the indigenous poor. For example, the central character of *Bleak House*, Esther Summerson, who, in a chance encounter, contracts smallpox from a street sweeper. While the Victorians dreaded smallpox and TB, their greatest fear of contagion from the poor related to cholera. One of the most shocking revelations about the London cholera epidemic of 1855 was that it happened in the rich district of St James, while the nearby abjectly poor district of St Giles was practically untouched. Londoners thought that if people in fashionable St James could die of cholera, it could happen anywhere (Gilbert, 2005). 'Asiatic' cholera exposed the fault lines of the newly industrialised society. Victorians conceptualised it as an exotic

Indian disease that flourished in the similar conditions found in English cities. A characteristic side-effect of cholera was that its victims' skin became dry and dark, like an African. In a form of reverse colonisation, cholera thus transformed the English into a race of 'savages' (O'Conner, 2000).

Over a century later, we find that the EID worldview is similarly obsessed with the notion that origin of infection resides in other nations or in marginalised groups at home, and seeks to prevent 'leakage' from infected *others* into 'the general population'. This notion holds as much for gay or bisexual men with HIV as it does for asylum seekers with TB, for Africans with Ebola or for Chinese with SARS. But just as the 'War on Drugs' was always more of a war on drug users, so the battle to exclude EID becomes less of a battle to combat these diseases *in situ* (by improving the health of the poor and marginalised in developing nations and at home), and becomes more of a battle to stigmatise and exclude the *other*.

Developed world EID

In Chapter 1 there was a description of the different factors that were said to be behind the emergence or re-emergence of infectious diseases. But by aggregating such a wide range of different diseases and their different causes, the EID worldview obscures the enormous differences in the way that these diseases affect rich and poor, both in developed and developed countries.

Some of the factors causing the emergence of new infectious diseases are more pertinent to or exclusively affect people in the developed world. For example, the demographic change in Western countries towards an ageing population has led to a growing number of immunocompromised people vulnerable to infections. In the developed world, changes in the susceptibility of older people account for most of the apparent increases in infectious diseases. For example, the 58 per cent increase in deaths from infectious diseases in the USA between 1980 and 1992 was largely due to an increased infectious disease mortality rate among people over 65 from respiratory infections. The exception is people with AIDS, who account for most of the infections in those between 24 and 44 (Schwartz & Yogeve, 1996). The peak of incidence of new infectious diseases reported in the 1980s in the USA and other developed countries are thus AIDS-related opportunistic infections (Jones et al., 2008).

One of the factors said to cause diseases to emerge is use of technology, particularly in medicine and in food production. Again this is more

of an issue in developed countries: Some nosocomial infections, such as MRSA, are more common in those developed countries where there is a greater use of medical technology such as intravenous catheters, and antibiotics which are then used to treat infections associated with these technologies. Some food-borne pathogens, such as BSE/vCJD, are also confined largely to the developed world. Although concerns about travel importing EID tends to be framed in terms of poor migrants transporting infections from developing countries to developed ones, rich travellers to developing world countries are also likely to carry certain infections home with them. Half of all tourists and business travellers from industrialised countries who travel to developing countries fall ill with diarrhoea, 50 per cent of those cases are caused by *E. Coli*, 20 per cent by viruses, particularly noroviruses and ten per cent are due to protozoa such as *Giardia*, with the remainder due to other bacteria such as salmonella and shigellae (Kaufmann, 2009).

The rise in reports of infectious diseases in developed countries is also in part an artefact of improved diagnostic and laboratory techniques. For example, the original IOM report includes one of the 'emerging' infections as the bacterium *Helicobacter pylori*, which, in the 1980s, was discovered to be the cause of most gastric ulcers. Yet there is no evidence that the frequency of *H. pylori* had increased. Similarly, there has been an increase in reports of diarrhoea caused by the food-borne pathogen *Cyclosporida*, but this increase in incidence relates to improved laboratory techniques which, from the mid-1980s, allowed for more accurate diagnoses.

A further factor likely to cause the emergence of infectious diseases in developed countries is microbial adaptation and change. Antigenic shifts, such as occur with the influenza virus, can lead to more virulent strains to which people are naive, and the virus thus spreads until either natural or vaccine-induced immunity increases. This might explain the recent variations of invasive group A streptococcal infections ('flesh-eating bacteria') and the emergence of toxic shock syndrome (Schwartz & Yogev, 1996). Other infections that fall under the category of 'emerging' are as old as human civilisation but have changed in some way, such as TB. But usually when microbes have evolved, it is because humans have played a large role in enhancing their pathogenicity through ecological or demographic changes (Morse, 1995).

International travel and commerce are often blamed as a cause of cases of 'exotic' diseases such as Hantaan viruses to emerge in the USA. While some EID, such as SARS, were spread by international travel, the ability of an infection to become established and spread once introduced

to a new area still depends on other factors being favourable to it. For example, in August 1987, there was an outbreak of group A meningococcal meningitis during the annual hajj pilgrimage to Mecca, Saudi Arabia, which resulted in an attack rate among American pilgrims of 640 per 100,000. Yet there was no subsequent epidemic in the USA (Moore et al., 1988). Similarly, sporadic cases of malaria have been reported in Europeans with no history of travel to malarial countries but who lived near to airports, and mosquitoes travelling in the wheel bays of international airplane flights have been suggested as the cause. However, these mosquito vectors cannot thrive and reproduce in colder climates, so the conditions for the disease to spread further are not present. Similarly, developed world levels of sanitation would prevent a faecal–oral disease such as cholera spreading to epidemic levels.

Another factor said to lead to the emergence of epidemics of infectious disease is infections transported in the bodies of infected plane travellers who may not yet display symptoms. The so-called *stepping off a plane* scenario was a feature of the early Ebola reporting and has been a recurring *motif* in the reporting of other EID. There have been well-documented cases of a single plane journey transporting a disease from one country to another, for example with SARS. However, as Paul Farmer points out, ‘transmission of this sort, though dramatic and well-documented, is rare. Far more common is the... hidden-away suffering of a family that will never board a plane to any destination’ (Farmer, 2005: 127). The point is that most people affected by EID are unlikely to *step onto a plane* in the first place because most EID primarily affect the poor. Yet the dread of the poor, of immigrants or of ‘foreigners’, as a source of infection (of the rich) persists as an enduring theme in the history of infectious diseases. The *stepping off a plane scenario* is one modern incarnation of this fear of contagion.

The definition of EID usually rests on increased incidence (the number of newly diagnosed cases during a specific time period) rather than on prevalence (the number of cases alive in a population on a certain date). Investigators have often presented cases encountered in their practice and suggested an increased frequency of a disease, but such extrapolations may not be valid for larger populations, and may also be unreliable for infections that occur in clusters (HIV being an obvious example), where disease rates may vary widely between different communities. Although new clusters indicate a condition whose incidence is changing, they do not in themselves indicate a disease’s ‘emergence’. A cluster of cases may be the result of a virulent strain in an immunologically naive population, or of the transmission of infection between

contacts, or of an environmental exposure to the same source. Furthermore, publication bias means that while investigators who notice an increase in disease frequency are likely to publish their findings, those who do not notice any change are less likely to publish (Schwartz & Yogeve, 1996).

A 1996 study for the WHO and the World Bank entitled *The Global Burden of Disease* reported that infectious diseases accounted for only one of the ten leading causes of death in developed countries – lower respiratory infections was number four on the list and accounted for 3.5 per cent of total deaths. By contrast, infectious diseases (lower respiratory infections, diarrhoeal disease, tuberculosis, measles and malaria) accounted for five of the ten leading causes of deaths and in total account for 26.8 per cent of all deaths in developing countries (Hinman, 1998). Yet even this crude division between developed and developing countries obscures the fact that infectious diseases affect certain developing world countries more than others. In the two poorest regions in the world, sub-Saharan Africa and India, infectious diseases, together with maternal and peri-natal causes of death and nutritional deficiencies, account for the majority of deaths: 65 per cent of deaths in sub-Saharan Africa and 51 per cent of deaths in India. They account for 31 per cent of deaths in Latin America and the Caribbean, 16 per cent of deaths in China, and slightly more than 40 per cent in the other developing regions (Heuveline et al., 2002).

Even a country-by-country analysis obscures the way in which the burden of infectious disease weighs most heavily on the poor, because within both poor and rich countries it is the poorest people who are more likely to succumb to infections. As discussed in Chapter 3, by the late 1980s the idea that AIDS was an exclusively gay disease changed, so the notion that ‘everyone was at risk’. Whilst it is true to say that everyone is *potentially* at risk of contracting HIV, it does not mean that everyone is *equally* at risk. EID are portrayed as ‘democratic’ or ‘equal opportunity’ illnesses which threaten ‘us’ all, when in fact the patterns of who is infected and affected by them betray fault lines of social inequality and injustice. The concept of epidemiological transition suggests that as nation states develop they go through predictable epidemiological transformations, so that in richer countries, people are more likely to die of the so-called ‘diseases of civilisation’. Yet this model masks the fact that even in the richest countries, the chances of becoming ill or dying prematurely from the ‘diseases of civilisation’ – cardiovascular disease, diabetes, cancer, even accidents – are inversely related to how rich you are.

This correlation between poverty and increased risk of illness and death is just as valid for infectious diseases as it is for cancer or cardiovascular disease. For example, discussions about the 1918 influenza pandemic frequently cite its death toll of anything between 40 and 100 million people. Yet less often discussed is the variation in mortality rates. In the 1918 outbreak the majority of influenza sufferers recovered within about a week. About 20 per cent developed severe secondary infections that gave rise to fatal pneumonia, sometimes within 24 hours. The deadly complication of influenza pneumonia killed 40 to 50 per cent of people with these secondary infections. Although deaths from TB *decreased* in England and Wales during 1918–19, in the USA, TB mortality peaked along with influenza in 1918. In the USA, co-infection with TB may have contributed to the lethality of the 1918 influenza pandemic because of the synergism between influenza virus and coexisting bacterial infections (Herring, 2009).

The concept of *syndemic* has recently been introduced by medical anthropologists to label such synergistic interaction of two or more coexisting diseases and the resulting excess burden of disease (Singer & Clair, 2003). At its simplest level, and as used by some CDC researchers, the term refers to two or more epidemics interacting synergistically and contributing as a result of their interaction to the burden of disease in a population. For example worldwide, 11 million people are co-infected with both TB and HIV, and TB is the most common HIV-related infection in developing countries. The important point is not just the co-infection with HIV and TB but the enhanced infection due to the interaction of the two diseases. Co-infection reduces the survival time of patients compared with those infected with one or the other as co-infection with HIV and TB can cause reactivation of underlying TB disease. People with HIV may also be more susceptible to infection with TB, and once infected progress more rapidly to disease (Blanc & Uplekar, 2003).

Over and above this sense of *syndemic* as co-infection, the term also points to the sociopolitical context of sufferer's health. Social factors like poverty, stigmatisation, racism, sexism and structural violence (poverty) may be of far greater importance than the nature of pathogens or the bodily systems they infect. Syndemics also involve the interaction of diseases and other adverse health conditions such as malnutrition, substance abuse or stress, as a consequence of health threatening social conditions such as noxious living or working environments. In other words, a syndemic is a set of mutually intertwined and mutually enhancing epidemics involving disease interactions at the biological

level that develop and are sustained in a population because of harmful social conditions (Singer & Clair, 2003).

Returning to the 1918 influenza pandemic, the disease also had a disproportionate death toll among young adults, pregnant women, in immigrant and poor neighbourhoods, and in marginalised communities that lacked access to health care. While most national estimates of death rates in 1918–19 ranged between 20 and 50 per 1,000 people, in Europe, influenza mortality rates were lower, ranging from 2.4 per 1,000 in Russia to 12.7 per 1,000 in Hungary. In Canada and the USA they were about six per 1,000. In the Americas, they ranged from 1.2 per 1,000 in Argentina to 39.2 per 1,000 in Guatemala. But in African nations, they ranged from 10.7 per 1,000 people in Egypt to an extraordinarily high 445 per 1,000 in Cameroon (Herring, 2009).

Another example of how the infectious disease burden falls disproportionately on the poor even in the developed world is provided by the re-emergence of TB in NYC in the 1980s. As discussed in Chapter 1, this epidemic was one of the drivers that prompted the creation of the EID category. Yet a resurgence of a disease like TB in an industrialised society does not happen by accident, it requires a massive social upheaval. The TB situation had improved in NYC in the 1960s and 1970s to the point that most new cases were reactivations of latent infections in older people. The root cause of the 're-emergence' of TB was the deliberate destruction of poor neighbourhoods in NYC in the 1970s.

While slum clearance had become legally and politically difficult by the late 1960s, similar aims were achieved in NYC between 1969 and 1976 by a deliberate policy of reducing the fire service in poor, overcrowded neighbourhoods with ageing housing. This resulted in a wave of building fires and a related rise in building abandonment by landlords, with a loss of hundreds of thousands of housing units. Officials gave the impression that a huge proportion of these fires were arson, and thus labelled the slum dwellers as lawless, pathological and antisocial. In fact, less than half of the fires were even suspicious, and proven arson only accounted for a tiny proportion of them. As a result of the social unravelling subsequent to this 'firebombing' of the ghettos, conditions deteriorated from housing overcrowding and social disruption and about 1.3 million white people left New York. About 0.6 million poor people were displaced and had their homes destroyed. In around five years almost two million people moved, a massive population instability. Effective TB control involves contact tracing and ensuring adherence to medication regimens and is only really possible in stable

communities. The re-emergence of TB in NYC in the 1980s was thus a direct consequence of the deliberate policy of de-development. The destruction of housing stock set in motion unintended consequences which spilled out from the ghettos into middle-class neighbourhoods (Wallace & Wallace, 1998; Wallace & Wallace, 2003).

Developing world EID

As in the developed world, in developing countries population-wide averages disguise the way that the burden of infectious diseases bears down most heavily on the poor. In many developing countries, 'epidemiological averages' can seemingly portray a picture of transition towards developed world patterns of morbidity and mortality, giving a misleading impression of population-wide health improvement. However, in effect, the rich and poor, urban and rural dwellers, and other sub-groups of populations in countries may live in different 'epidemiological worlds' (Phillips, 1994).

As discussed in previous chapters, unrestrained *laissez-faire* capitalism and the exploitation of the new industrial urban working class in Europe resulted in nineteenth-century epidemics of classic 'crowd diseases' such as smallpox, tuberculosis and cholera. Similarly, late modern unrestrained economic globalisation has led directly to the emergence of infectious diseases such as HIV/AIDS and re-emergence of older infectious diseases, including TB.

The process by which this came about started with the liberalisation of the global financial markets in the 1970s and 1980s. This led to a far less stable financial system and to poor countries building up debt which they could not repay. Although academics and politicians usually focus on the supposed incompetence of debtor governments and on corruption in poor countries, it was the 'structural adjustments' to developing world economies designed by their creditors, the International Monetary Fund and The World Bank that obliged poor highly indebted nations to repay Northern creditors by diverting money away from improving living standards for their people, including efforts to improve health and tackle infectious diseases (Pettifor, 2006).

For the Victorians, the consequences of the excesses of industrial capitalism and the desperate poverty it caused were present before their very eyes. Today, for most people in developed countries, the wretched poor may now be in 'far-flung' locales, but in a reverse of the 'modernist' belief in progress, the disparities of wealth between the rich and poor are, if anything, growing. For example, at the beginning of the twentieth

century, the wealthiest 20 per cent of the world's population were nine times richer than the poorest 20 per cent. That ratio had grown to 30 times richer by 1960, 60 times richer by 1990 and over 80 times richer by 1995. One billion people in the world live well, some in great luxury, while three billion live in poverty. Between 1975 and 1995 the number of extremely poor people in the world doubled. Absolute poverty has also increased more than a quarter of the world's population live on less than US\$1 a day. Over half of the 4.4 billion people in developing countries lack access to clean water and essential medicines, and almost a quarter are underfed. As a result of globalised inequalities, there has also arisen a large illicit globalised economy, comprising an illicit arms trade, an illegal drugs trade worth over US\$500 billion a year, money laundering, people smuggling, trafficking in endangered species, toxic waste dumping, prostitution, sexual exploitation and child labour (Benatar, 2003).

The slums of early industrialised Europe were known as 'fever nests', but the scale and abject misery of the new developing world mega-slums dwarfs those of Victorian Europe. The British and other colonial powers in Africa, India, Burma and Ceylon built slums and shanty towns on the fringes of segregated cities for the local labour force to live in, resulting in huge death tolls from plague, cholera and influenza in colonial times. Today's developing world slums are the legacy of this colonial urban squalor. The civil wars and political instability of the post-colonial period forced the rural poor to migrate to increasingly overcrowded city slums, where uncollected waste harbours rats and insect vectors like mosquitoes, and where there is no basic sanitation or potable water (Davis, 2006). This type of overcrowding is the most common significant independent predictor of EID, which are found where there are the greater concentrations of people, rather than on the remote fringes of society (Jones et al., 2008).

One of the factors that is said to lead to infectious diseases 'emerging' is changes in agricultural practice. Yet these changes are also a direct result of neoliberal globalisation since the 1980s. In particular they are the result of the reorientation of underdeveloped agricultural subsistence economies towards producing cash crops for export. The forced incorporation of developing world economies into global markets has resulted in the creation of a global class of hungry semi-peasants lacking security of subsistence. Global economic forces that 'push' people from the countryside include the industrial scaling-up and introduction of mechanised agriculture, food imports, and the competition from and the consolidation of smallholdings into larger ones. These changes, combined with population growth and the speed and

scale of urbanisation, have led to rising demand in developing countries for poultry, pork and dairy products. This has led to the industrialised mass production of food, the so-called 'livestock revolution', which, like the Green Revolution before it, has favoured corporate mega-producers of food over peasants and family farmers (Davis, 2006).

As discussed in Chapter 5, in light of fears about 'bird flu', mass poultry culls have been carried out in countries across South East Asia. Yet little attention has been paid to the impact of these culls on the food security, nutrition and health of the poor people who bear the brunt of these policies. Chicken is often the cheapest animal protein in developing countries. Over 250 million chickens, mostly from family farms in rural communities, have either died from avian influenza or have been culled in an attempt to stop the spread of the infection. Culling therefore places a large economic burden on farmers who are most vulnerable to economic failures and nutritional inadequacies. Culling poses a threat to families who may only lose a few birds, because these birds represent a measure of food security when shortages in other staples such as fish may occur due to fishing being dangerous during storms (Lockerbie & Herring, 2009).

Similarly, another of the factors often highlighted as causing the emergence of zoonotic infectious diseases, such as HIV, is the supposed African 'fondness' for bushmeat. Yet research into the trade in bushmeat from Ghana demonstrates that increased hunting in nature reserves coincides with years of poor fish supply, the primary source of animal protein consumed in West Africa. Local market data provide evidence of a direct link between poor fish supply and subsequent bushmeat demand – Ghanaians substitute bushmeat for fish because of protein deficiency. Furthermore, declines in fish stocks in West Africa between 1950 and 2000 have coincided with more than tenfold increases in fish harvests in the region by foreign and domestic fishing fleets. The largest foreign presence in West African fisheries is EU boats, which have increased their fishing harvest by a factor of 20 in the same period. Despite declining fish stocks, the EU financial support of its foreign fleet increased from about US\$6 million in 1981 to more than US\$350 million in 2001, significantly and artificially increasing the profitability for EU boats of fishing in African waters (Brashares et al., 2004).

Another of the factors listed as leading to EID 'emerging' is war in and between developing countries. Yet rarely discussed is the relationship between wars and colonial histories, or to the instability caused by economic shock therapy, as discussed above, which have led directly to a rise in insecurity, violence, terrorism and war. Globally there have

been 350 wars, revolutions and *coups d'état* since the end of the Second World War, mostly in developing countries (Smallman-Raynor & Cliff, 2003). Modern wars are no longer confrontations between lines of troops, but are more likely to involve civilian populations in close proximity to conflict areas, and civilians and civilian infrastructure such as healthcare facilities are more likely to be seen as legitimate targets. Of those dying in conflict zones, the proportion of civilians has risen from approximately 10 per cent in the First World War to 50 per cent in the Second World War and to 80 per cent in subsequent wars (Weinberg & Simmonds, 1995).

War brings with it mixing of military and civil populations, decreased resistance to infections as a result of physical and mental stress, nutritional deprivation, insanitary conditions, concentration and overcrowding, the interruption of disease control programmes such as immunisation programmes, and the collapse of conventional rules of social behaviour, including rape (Smallman-Raynor & Cliff, 2003). One of the most devastating effects of war is its subsequent forced migration of those refugees fleeing the conflict. In another affront to modernist ideas of 'progress', in 1980, there were 8.4 million people displaced by war, famine and ecological disaster worldwide. By 1992, that number had risen to 17.8 million, and by 2005, the total number of people of concern to the United Nations High Commission for Refugees (UNHCR) was 19.2 million (Pettifor, 2006).

TB, MDR-TB and HIV/AIDS

The decontextualisation of the 'factors' causing infectious diseases to 'emerge' from their social, economic and political causes is nowhere more evident than in discussions of the 're-emergence' of TB. Nearly one-third of the world's population – two billion people – is infected with the tuberculosis bacterium and at risk of developing the disease. About eight million people develop active TB every year, and two million die, of which some 95 per cent of cases and 98 per cent of deaths are in the developing world. In much of the world, TB is the leading killer of young adults, in spite of effective treatments being available for the past 50 years. As well as this holocaust of entirely preventable illness and premature death, the economic costs of TB to patients and their families can be crippling, as they not only lose income due to inability to work, but also have to liquidise whatever meagre assets they may have in order to pay for treatment (Blanc & Uplekar, 2003).

The 'conquest' of TB is one of the heroic narratives of the 'golden age of medicine'. Yet as the anthropologist and medical doctor Paul Farmer has argued passionately, although there have been dramatic shifts in local TB epidemiology in certain populations, a more global analysis does not suggest there has been major decreases in TB as a cause of death. The invisibility of the disease in the 1970s and 1980s relates to disease awareness – TB did not 're-emerge' so much as emerge from the ranks of the poor. In spite of theoretical risks to the 'general population' the majority of US cases of TB remain among the inner-city poor, in prisons, homeless shelters and public hospitals. The 're-emergence' of 'new' TB is a result of global social and economic changes, which has led to mass movements of people in response to war, economic insecurity and community breakdown, spreading TB and other infectious diseases in overcrowded and makeshift housing (Gandy, 2003).

In response to the rise in transmission of TB and outbreaks of multi-drug-resistant TB (MDR-TB) associated with HIV, the Global Project on Drug Resistance was launched in 1994 to monitor trends. Between 1997 and 2000, reports showed that drug resistance was present worldwide and the prevalence of MDR-TB ranged from 0 to 14 per cent of new cases (median 1.4 per cent) and 0 to 54 per cent of cases of previously treated cases (median 13 per cent). Between 1999 and 2002 there were decreases in MDR-TB prevalence in Hong Kong, Thailand and the USA, but significant increases in Estonia, Lithuania, Russia and Poland. Most western and central European states only see a few cases of MDR-TB each year, but two Chinese provinces, Henan and Hubei, saw more than 1000 cases each year, and Kazakhstan and South Africa have more than 3000 cases each (Victor & Young, 2005).

Biomedical publications often talk of MDR-TB being the result of 'sub-optimal dosage' and 'poor drug absorption' while remaining coy about why people take their anti-TB medication erratically, or ignoring the issue of lack of access to optimal treatment in poor communities in the USA and elsewhere. Often social scientists talk of non-adherence to therapies being the result of 'behavioural problems', or anthropologists of 'health beliefs' 'sorcery' or 'folk beliefs'. The effect of poverty on people's ability to receive effective treatment is less often mentioned. In most places, the degree to which patients are able to comply with their TB treatment regimens is significantly limited by forces outside of their control (Farmer, 1997).

Just as the re-emergence of TB in NYC in the 1980s followed a massive social upheaval in the city, so the re-emergence of TB in the post-Soviet bloc countries was also caused directly by the social disruption and

capital flight that accompanied the end of the communist era. In the Soviet era, TB care was organised, and there were programmes for BCG vaccination and mass TB screening programmes. As a result, by the 1970s, instances of TB were rare. By 1989, just at the end of the Soviet era, the TB rate was 44.7 per 100,000. Yet by 1998, the TB rates were 81.3 per 100,000 for Latvia, 82.4 for the Russian Federation, 89.1 for Turkmenistan 96.4 for Georgia, 114 for Romania, 122.9 for Kyrgyzstan and 126.4 for Kazakhstan (Stern, 2003). In the 1990s, using the money they had sequestered during the 'privatisation' of former Soviet assets, the new Russian super-rich oligarchs hugely inflated prices of luxury housing in London and elsewhere. Meanwhile the economies of the former Soviet countries dramatically unravelled. As a result, millions of people who had previously maintained a moderate standard of living found themselves abruptly plunged into poverty.

The economic crisis in the former Soviet Union led to massive social disruption, a sudden increase in crime and a consequent increase in the prison population. By 2000, the Russian Federation had imprisonment rates of 678 per 100,000, the second highest in the world after the USA at 682 per 100,000. (By comparison, southern Europe's median rate is 70 and in England and Wales it is 125.) In 1998, a Moscow press conference organised by three NGOs announced that 100,000 prisoners, one in ten of the Russian prisoner population, suffered from active TB, and 20,000 had MDR-TB (Stern, 2003). Russian prisoners were developing MDR-TB as a result of ineffective treatment of the strains of TB which were resistant to the drugs being administered to them. Various observers, including some from international human rights organisations, argued that these prisoners have 'untreatable forms' of TB, although treatment based on the standard of care expected elsewhere in Europe and North America would cure the vast majority of these cases. 'Untreatable' in this context means 'too expensive to treat' (Farmer, 2005).

It has been said that the impact of the syndemic of HIV/AIDS and TB in South Africa within the next five to 20 years may reduce the country to widespread social anarchy – a society reduced to living out the values of a movie gangland dystopia such as that portrayed in the movie *Mad Max* (Shell, 2000 in Brower & Chalk, 2003). South Africa is now listed by the WHO as one of the highest burdened countries in terms of MDR-TB. In fact, MDR-TB was first identified in South Africa, in the Western Cape area, in 1985. By 1994, MDR-TB accounted for 2 per cent of TB in the region (Victor & Young, 2005). Just as the re-emergence of TB in NYC was the unintended but direct result of racist housing policies in the city, so South Africa's TB and HIV/AIDS syndemic, the worst in the

world, is also a direct consequence of generations of racist government policies there.

The history of TB in South Africa dates back to the discovery of diamonds and gold there in the 1880s. This led to a rapid urbanisation of Africans, and a devastating epidemic of TB, as Africans came into contact with infected European immigrants in overcrowded slums. As a result of a lack of medical attention, overcrowding in slums and a poor diet, Africans either succumbed to TB, or survived to becoming reservoirs of infection for others. Sick migrant workers were repatriated to rural areas, infecting others who subsequently migrated to urban areas carrying with them latent TB infections. In the 1920s and 1930s South Africa's TB policy was to exclude and segregate cases through slum clearance, rather than dealing with the underlying causes. In the late 1930s and 1940s, there was a new wave of TB disease amongst blacks, which by 1945 led to white public hysteria about the threat to both labour supply and to the health of whites (Packard, 1989).

The victory of the South African National Party in 1948 marked the beginning of an era marked by dramatic changes in the epidemiology of TB in South Africa. Although urban TB mortality rates began to fall in response to new treatments, between 1948 and 1985 there was little or no amelioration of the underlying causes of TB. Millions of Africans were forcibly moved to already overcrowded reservations. The residents of the new townships had to travel long distances to work on overcrowded public transport, exposing them to the risk of TB infection. The inequitable distribution of health services in South Africa, combined with the pattern of racial segregation, decreased the likelihood that black TB cases would be effectively cured, and increased the numbers of partially cured cases who would be a source of infection to others. So even before the impact of HIV/AIDS in the 1990s, the TB rates in urban South Africa were already extremely high. Between 1979 and 1989 over 25,000 people died of TB in South Africa, nearly all of whom were Africans, coloureds and Asians. In 1989, white cases made up only one per cent of new cases each year (Packard, 1989). HIV/AIDS undoubtedly contributed to the TB epidemic in South Africa, as it did in certain US and European cities. Yet HIV/AIDS did not cause TB to 're-emerge'. In developed and developing countries, the 're-emergence' of TB had begun long before HIV had penetrated poor communities.

The fact that the HIV/AIDS epidemic is worse in sub-Saharan Africa than anywhere else in the world is usually blamed on African sexuality, prostitution, ignorance and corruption, rather than on unrestrained globalised capitalism, exploitation and racism. African sexuality is often

portrayed as rooted in 'traditional' African culture, and thus difficult to change. Yet contemporary African sexual mores are, at least in part, a legacy of colonial racist policies. As discussed above, the colonial powers needed cheap African labour for activities such as mining and construction. At the same time, so that they would not have any claims on urban land, African migrant workers were denied permission to bring their families with them. One effect of this was the breakdown of traditional rules and protocols of marriage, leading to unprecedented inter-ethnic (transient and longer-lasting) sexual relationships and marriages (Aina, 1988).

This brings us back to the discussion in Chapter 3 and to the questions posed in the debate around AIDS in the late 1980s: Why was there a HIV/AIDS epidemic amongst gay men in the West, yet the predicted Western heterosexual epidemic did not materialise? And, conversely, why is there such a catastrophic HIV epidemic amongst heterosexuals in certain countries in sub-Saharan Africa but not elsewhere?

The reason why gay men are disproportionately at risk of contracting HIV is often assumed to be as a result of anal sex. As discussed in Chapter 3, the widespread belief is that because the anus was not 'designed' for penetration, it is less 'rugged' than a vagina, and thus more at risk of tearing, and hence HIV transmission. Yet while unprotected anal sex may be slightly more dangerous than unprotected vaginal sex in terms of the likelihood of HIV transmission, unprotected vaginal sex is still a perfectly efficient way of passing on the HIV virus, as the experience in sub-Saharan Africa and elsewhere demonstrates. The reason why gay men are more 'at risk' of contracting HIV relates not to anal sex, but to patterns of partner change.

The model for sexual partner change amongst modern Western heterosexuals is slow serial monogamy. This heterosexual model is bolstered by legally binding and socially sanctioned marriage, and by extension the societal recognition of long-term unmarried heterosexual partnerships. AIDS affects both Africans and gay men disproportionately, something often 'explained' away with the word 'promiscuity', without giving any social context of why that might be the case. When HIV was spreading through the gay communities of Europe and North America in the 1970s and 1980s, the same social forces that keep heterosexual couples together were pushing in the opposite direction, away from the possibility of gay men forming stable relationships. The strength of continuing opposition to 'gay marriage' in many Western countries, such as Italy and the USA, illustrates the discrimination and homophobia that formed, and still forms, the background to many gay men's lived experience.

The 'promiscuity' of gay men and Africans is at least in part a product of a set of particular social circumstances, rather than something 'natural', 'cultural' or a taken-for-granted 'fact'. With the exception of people infected by blood products or transfusions, what all people affected by HIV have in common is their marginalised status: whether as a result of their sexual orientation, of poverty, and in some societies their ethnicity or gender (Pisani, 2008).

The idea that 'everyone is at risk of AIDS' is therefore only true in about 3 per cent of the world. Patterns of sexual partner change account for the fact that for many years now, most new HIV infections in Asia, Europe, the Americas, Australasia, the Middle East, North Africa and even parts of West Africa are either the result of sex between men, drug use, or amongst people who buy and sell sex (Pisani, 2008). The difference between Africa and the rest of the world in terms of HIV transmission is that in much of East and Southern Africa heterosexuals, like some Western gay men, have sex with networks of people, often regular partners, but who themselves may also be having sex with more than one regular partner.

The burden of infectious disease falls disproportionately on the poor, particularly, though not exclusively, poor people in the developing world. Yet the discourse around EID is itself rarely contextualised in terms of the burden of other infectious diseases left outside the 'emerging or re-emerging' category (because they do not threaten people in the developed world). AIDS kills about one million people a year, but malaria has a similar death toll. Yet malaria is thought of not as an 'emerging' disease, but rather as 'endemic' in the developing world. Malaria only registers in the EID discourse in terms of the discussion of global warming, with fears that malaria may 'emerge' in 'our' part of the world. AIDS is an 'emerging' disease insofar as it is new, yet the context of AIDS in Africa is that 50 per cent of Africa's population would have died before the age of forty even without AIDS, while in Western Europe and Japan 50 per cent of the population will live past 80 (Alcabes, 2009).

On many levels, the late modern discourse about the risk of EID echoes the arguments that were being made in the earlier industrial era, and which led to the modern public health movement. Infectious diseases thrive in conditions of poverty, social exclusion and inequality. Part of the thinking behind the EID worldview is to motivate rich countries to improve infectious disease control and surveillance through enlightened self-interest. But in order to stop infectious diseases from emerging and re-emerging, we cannot simply draw up the bridges by which they travel from the poor to the rich. Exclusion in itself will never

be sufficient to prevent or contain EID, even supposing that such a strategy would be possible in our globalised world. In order to really stem EID we would need to start by distributing the world's resources more fairly, and to tackle the discrimination, homophobia and racism that blight so many lives. These are the factors that lead, directly and indirectly, to the emergence and re-emergence of infectious diseases.