

What does the empirical evidence tell us about the injustice of health inequalities?

Angus Deaton
Center for Health and Wellbeing
Princeton University

January 2011

I am grateful to Anne Case and to Dan Hausman for comments on a previous version of this paper, as well as to participants at the Brocher summer academy, July 2010, for discussion and suggestions.

What does the empirical evidence tell us about the injustice of health inequalities?

ABSTRACT

Whether or not health inequalities are unjust, as well as how to address them, depends on how they are caused. I review a range of health inequalities, between men and women, between aristocrats and commoners, between blacks and whites, and between rich and poor within and between countries. I tentatively identify pathways of causality in each case, and make judgments about whether or not each inequality is unjust. Health inequalities that come from medical innovation are among the most benign. I emphasize the importance of early life inequalities, and of trying to moderate the link between parental and child circumstances. I argue that racial inequalities in health in the US are unjust and add to injustices in other domains. The vast inequalities in health between rich and poor countries are arguably neither just nor unjust, nor are they easily addressable. I argue that there are grounds to be concerned about the rapid expansion in inequality at the very top of the income distribution in the US; this is not only an injustice in itself, but it poses a risk of spawning other injustices, in education, in health, and in governance.

1. Introduction

How we should think about inequalities in health depends, in part, on the facts about health inequalities, and on how we understand them. Causal interpretations are required to design policy. Hausman (2009, 237) notes that “understanding the health gradient helps to guide benevolent interventions” and emphasizes the need to clarify causal paths. Facts and correlations, without an understanding of causation, are neither sufficient to guide policy nor to make ethical judgments. Without getting causation right, there is no guarantee that interventions will not be harmful. It is also possible that an inequality that might seem to be *prima facie* unjust might actually be the consequence of a deeper mechanism that is in part benevolent, or that is unjust in a different way.

I provide examples of good inequalities, of bad inequalities, and of inequalities that are neither. In each case, I shall reflect on judgments and on policies. I shall discuss health inequalities within countries, in which differences in health are associated with differences in education, in income, and in status. I shall have something to say about the enormous differences in health between rich and poor countries, and I shall briefly consider the relationship between income inequality and health. Following Hausman (2007), I treat health inequalities as important to the extent that they involve inequalities in overall well-being, and treat health inequalities as unjust when they are not compensated for by other components of well-being, and when they are remediable, but not remediated. At the end, I offer some brief conclusions.

2. The birth of the gradient

It is sometimes supposed that the gradient has always been with us, that rich people have always lived healthier and longer lives than poor people. That this supposition is generally false is vividly shown by Harris (2004, Figure 2) who compares the life expectancies at birth of the general population in England with that of ducal families. From the middle of the 16th to the middle of the 19th century, there was little obvious trend in general life expectancy. For the ducal families up to 1750, life expectancy was no higher than, and sometimes lower than, the life expectancy of the general population. However, during the century after 1750, the life prospects of the aristocrats pulled away from those of the general population, and by 1850-74, they had an advantage of about 20 years. After 1850, the modern increase in life expectancy became established in the general population. Johansson (2009) tells a similar story for the British royals compared to the general population, though the royals began with an even lower life expectancy at birth.

Kings, queens and dukes were always richer and more powerful than the population at large, and would surely have liked to use their money and power to lengthen their lives, but before 1750 they had no effective way of doing so. Why did that change? While we have no way of being sure, the best guess is that, perhaps starting as early as the 16th century, but accumulating over time, there was a series of practical improvements and innovations in health, including inoculation against smallpox (not vaccination, which still lay many years in the future,) Razzell (1977), professional (male) midwives, cinchona bark against

malaria, “Holy wood” against syphilis, oranges against scurvy, and ipecacuanha against diarrhea, Johansson (2009). Many of these innovations were expensive; indeed, in sharp contrast to what would happen later, the “miracle” drugs and methods were imports from afar, Brazil, Peru, China, and Turkey. The children of the royal family were the first to be inoculated against smallpox (after a pilot experiment on condemned prisoners), and Johansson notes that “medical expertise was highly priced, and many of the procedures prescribed were unaffordable even to the town-dwelling middle-income families in environments that exposed them to endemic and epidemic disease.” So the new knowledge and practices were adopted first by the better-off—just as today where it was the better-off and better-educated who first gave up smoking and adopted breast cancer screening. Later, these first innovations became cheaper, and together with other gifts of the Enlightenment, the beginnings of city planning and improvement, the beginnings of public health campaigns (e.g. against gin), and the first public hospitals and dispensaries, Porter (2000), they contributed to the more general increase in life chances that began to be visible from the middle of the 19th century.

Why is this important? The absence of a gradient before 1750 shows that there is no general health benefit from status *in and of itself*, and that power and money are useless against the force of mortality without weapons to fight. Link and Phelan’s (1995) “fundamental causes” hypothesis, that power and money seek out health improvements, but that these take different forms in different eras, is an important insight and frequently useful for thinking about changing patterns of disease. It also implies that there are periods when there may be

nothing that power and money can do so that there will be a no gradient. Beyond that, when health improvements come through innovation and new knowledge, the first beneficiaries are likely to be those with the understanding and wherewithal to adopt them, which will usually be the better educated and better off. It would be certainly be better still if all beneficent changes came to everyone at the same time, though this may not always be possible especially if the innovations are initially expensive. Moreover, if the initial health inequalities indicate that there are general health benefits to come, we may be more tolerant of an initial temporary injustice. Clearly, the way to eliminate the inequality is to encourage the rapid diffusion of successful innovations, not to prevent the royal family from inoculating their children, nor to suppress the knowledge that cigarette smoking causes cancer. Such leveling-down arguments are often expressed in the epidemiological literature on health inequalities, but are rarely supported by either philosophers or economists.

3. Men and women

Men die at higher rates than women at all ages after conception. Although women around the world report higher morbidity than men, their mortality rates are usually around half of those of men. The evidence, at least from the US, suggests that women experience similar suffering from similar conditions, but have higher prevalence of conditions with higher morbidity, and lower prevalence of conditions with higher mortality so that, put crudely, women get sick and men get dead, Case and Paxson (2005). Perhaps the first reaction is that these inequalities are

biologically determined and are not amenable to human action, so that they are neither just nor unjust. But biology cannot be the whole explanation. The female advantage in life expectancy in the US is now smaller than for many years, 5.3 years in 2008 compared with 7.8 years in 1979, and it has been argued that there was little or no differential in the preindustrial world, Vallin (1991). The contemporary decline in female advantage is largely driven by cigarette smoking, Pampel (2002); women were slower to start smoking than men, and have been slower to quit, so that the decline in associated mortality started much earlier for men. In some parts of Europe, female mortality rates from lung cancer are still rising. It might be argued that these gendered choices have no implications for overall well-being and are no more an injustice than it is unjust for women to choose Jane Austen over Dan Brown, while men choose the opposite. Yet these choices are not made in a social vacuum, nor without the constraints of economic or other circumstance, and injustice may (or may not) lie in these background arrangements. For much of the 20th century, women were unjustly prohibited from smoking, and current outcomes are in part a reflection of that history. Yet that historical injustice of opportunity seems less important than other injustices, such as those of poverty and inequality, so that gender differences in smoking related mortality are surely of less ethical concern than differences in smoking related mortality between poor and rich.

It is hard to see health inequalities between men and women as a justification for differential treatment at the point of care, which would create a procedural injustice. Yet, at a systemic or research level, policymakers and administrators

constantly prioritize one set of conditions over another so that, among other considerations, one might argue that the injustice of men's shorter lives calls for greater attention to diseases that are more likely to kill men. Alternatively, one might also argue that the male disadvantages in life expectancy reflect informed male choices of life style, and are fully compensated by the offsetting benefits of those choices. We might also argue for a broader view, that the inequalities that should concern us are those in overall well-being, not in its components. If men are favored in most domains of well-being, such as power, earnings opportunity, or morbidity, the superior mortality experience of women might actually reduce overall inequalities. On this argument, we would be much more concerned if women had *higher* mortality than men, just as we are particularly concerned about the higher mortality of blacks given that they suffer from a wide range of other disadvantages.

4. Children, race, and health care

Children have worse health outcomes when their parents have less income or less education. The differences are relatively small at birth, but widen throughout childhood; Case, Lubotsky and Paxson (2002) show that the income (but not the education) gradient of child health in the US steadily steepens with age. Similar results have been found for Canada and for the UK, Currie and Stabile (2003), Case, Lee, and Paxson (2008).

What seems to happen is that the disadvantages at birth from a wide range of conditions (income, housing, nutrition, health care) widen with age because of the

cumulative effects of bad conditions, or because poorer parents are less able to deal with new health conditions as they occur, in part through the costs of doing so, and in part through the difficulty of finding time to take children for treatment while holding down (often multiple) low paying jobs. In consequence, conditions that could be fully treated are sometimes allowed to get worse, or to have long-lasting consequences. In many places, the poor also face lower quality, less well-funded health services. As the children of poor people move into the labor force, their relatively worse health persists into adulthood, leading to poorer job opportunities and greater loss of earnings through a higher likelihood of episodes of ill-health. People who are inadequately nourished as children are shorter in adulthood, and earn less; in both Britain and the US, an additional inch of height comes with 1.5 to 2 percent higher earnings, Case and Paxson (2008). As a result, the relationship between health and income steepens through the working life. After retirement, once the link from health to earnings from work is broken, and selective mortality becomes important, health gradients flatten out again although they never entirely disappear. Parental education also affects child education, and children who are in worse health are more likely to miss school or to learn less in school, so that there is also a mechanism running from health in childhood to lower earnings in adulthood, even conditional on good adult health. The evidence for the multiple pathways is reviewed by Currie (2009); Heckman (2007) develops a model of cognitive and non-cognitive skill formation that integrates health and human capital formation.

These childhood gradients, with their long reach into adulthood, are unjust inequalities that ought to be addressed. Sen (2002) writes “What is particularly serious as an injustice is the lack of opportunity that some may have to achieve good health because of inadequate social arrangements.” Heckman’s work, with its emphasis on dynamic complementarities through which investments in health and education have higher returns for better educated and healthier people, suggests high rates of return to interventions in early life, see Conti, Heckman, and Urzua (2010), so this is a case where justice and economic expediency are well-aligned.

Racial inequalities in the US are my second example of an unjust inequality although, once again, there is controversy about the cause of the inequalities, and the nature of the injustice. In 2006, life expectancy at birth was 4.1 years less for African Americans than for white Americans. There are also pronounced racial differences in treatment patterns, for example for cardiovascular disease, Smedley, Stith, Nelson (2002), or knee arthroplasty, Skinner, Weinstein, Sporer, and Wenneberg (2003). The conventional explanation for these inequalities, endorsed by a 2002 report of the National Academies of Sciences, Smedley, Stith, and Nelson (2002), is that the encounter between healthcare providers and patients leads to poorer treatment of African Americans by largely white providers. More generally, the daily stress of living in a racist society is itself thought to be a cause of poor health outcomes.

There is no doubt something to these accounts, but there is another, perhaps more obvious explanation, which is that African-Americans receive worse health

care because the hospitals and clinics that serve them are of lower quality than the hospitals and clinics attended by other Americans. Hospitals in the US are run on something close to an *apartheid* basis, with few white patients in the hospitals that treat mostly African-Americans, and *vice versa*, Skinner, Chandra, Staiger, Lee, and McClellan (2005); doctors and nurses are much less segregated, with many white doctors in “black” hospitals, and African-American doctors in “white” hospitals. The “black” hospitals have worse outcomes, are less well-provisioned, their pharmacies have fewer drugs, and their providers are less well-qualified, Bach, Pham, Schrag, Tate and Hargreaves (2004). In consequence, people who live in cities with large African American populations—both African-Americans and whites who live in those areas—have poorer healthcare and higher mortality rates than those who live in cities with small African American populations, Deaton and Lubotsky (2003).

Another disadvantage for African-Americans is that they are more likely to live close to environmental hazards. Currie (2011) has recently documented the claims of the environmental justice movement using data on 11.4 million births in five large American states. According to her calculations, 61 (67) percent of black mothers (without high school education), but only 41 percent of white mothers give birth within 2,000 meters of a site included in the US Environmental Protection Agency’s “Toxic Release Inventory.” There is good evidence that pollution from such sites can compromise health at birth.

These explanations for racial inequalities, like the explanation for early life inequalities, while recognizing multiple determinants, put more emphasis on

healthcare (and on environmental pollution) than is usually the case in the health inequalities literature, which tends to focus on more general economic and social forces, either of material circumstances (the effects of poverty on health), or of psychosocial stress (the effects of low status on health), Marmot (2005). According to these explanations, the remedy for the injustice is redistribution of income and wealth, both to address material deprivation, and to reduce the force of the status differentials that are associated with income and wealth, for example by giving people more control in the workplace. The healthcare and environmental explanations, by contrast, are more narrowly focused on the provision of public goods, although income redistribution and educational interventions directed at the children of poor families are also called for.

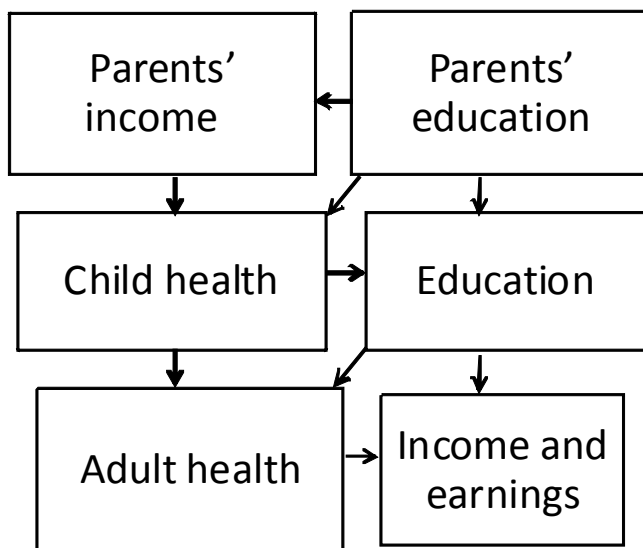
One reason for pinpointing the effects of healthcare is the clear importance of health-related innovations for the decline in mortality in the developed world over the last half century. Life expectancy at birth in the US rose by 7 years from 1960 to 2000, 70 percent of which was due to reduction in mortality from cardiovascular disease, approximately two-thirds of which is medical advance, with the rest attributable to the decline in smoking, Cutler, Deaton, and Lleras-Muney (2006). There has also been a substantial decline in infant mortality, much of it from the introduction of high-tech neonatal intensive care units (NICUs). There has been relatively little reduction in mortality from cancer, although even here, recent data suggest that innovations in treatment are reducing mortality from breast and prostate cancer. Although there are substantial international differences in smoking rates and in mortality from lung cancer, the patterns of decline in

cardiovascular mortality are similar in different countries, much more similar than would be expected from different national patterns in economic and social environments, but exactly as would be expected from the spread of knowledge, drugs, and technology from one country to another, especially among rich countries where there are few barriers to adoption and implementation. Given the importance of these advances for mortality decline, and given that not everyone gets access at the same time—better hospitals adopt new advances more rapidly, and the use of drugs such as anti-hypertensives or preventive screening are more rapidly adopted by the more educated—it would indeed be surprising if the new innovations did not widen the gradients within countries, just as was the case for the first gradients in Britain in the eighteenth century. And the same argument applies here as there, that while we should like to reduce the inequalities, we must be careful that our policies speed up the widespread adoption of beneficial treatments and do not discourage their introduction or the discovery of new treatments, and thus kill the innovative goose that is laying the golden eggs. Wealth has a formidable record of generating new ways of improving health, and we need to harness its power, not muzzle it on the grounds that it generates temporary inequalities in health.

5. Socioeconomic status, education, income, and health

Much of the epidemiological and sociological literature describes and analyzes health inequalities in terms of differences in socioeconomic status, which is taken to be set by some amalgam of income, education, rank, and occupation, among

other things; indeed health inequalities are often described as “social” inequalities in health. The concept of socioeconomic status, although useful as a descriptive, portmanteau term, is unhelpful when we come to think about causation, and beyond causation, about policy. For example, there is much evidence, reviewed for example in Cutler, Lleras-Muney and Vogl (2010), that education directly promotes health, not just that those who are educated are also likely to be healthy because of some third factor, but because the things that are learned in school and college enable people to take better care of themselves as well as to take greater advantage of the healthcare system when they need it. We also know that being sick adversely affects the ability to earn—that is what the word “disabled” means.



In consequence, much of the evidence is consistent with the simple account in the Figure that focuses on health and education in childhood, with child health affecting both education and adult health, with education a major

determinant of adult earnings which may also be limited by ill-health. Sick people earn less, they spend less time in the labor force, and they retire earlier. In this framework, little but confusion is generated by amalgamating a cause (education) and a consequence (income) into a single category labeled socioeconomic status

which in turn is supposed to cause health (both a cause and a consequence.) None of this is to argue against a role for income in adulthood in promoting health, but that the situation is more complicated is a further reason for conceptual clarity, not the opposite. Even more important are the implications for policy; correcting health inequalities through education is very different from correcting health inequalities through taxation, income, or benefit policies.

What do these conclusions imply for policies to correct injustice? Once again, there is a clear rationale for focusing on early childhood health, nutrition, and disease prevention, and for trying to moderate the effects of parental deprivation on child outcomes. Here the policies are identical to those that would be advocated by those who see causality as flowing from socioeconomic status to health. Among adults, however, there is a divergence. If adult earnings is seen as the primary cause of good health, health inequalities need to be addressed through income redistribution—more progressive taxes—or through policies that moderate the benefits of status—though it is not clear what these policies might be. If, by contrast, the mechanism runs from ill-health to low incomes, we need to design policies that prevent the injustice of those who are sick having the added disadvantage of suffering material deprivation at the worst possible time. What are required are health insurance and disability schemes that insure, not one's health, but one's pocketbook against the depredations of a medical system or the inability to work. In my view, it is such policies, which are only poorly developed in the United States relative to Europe, that are required to address the major injustices of health inequalities. Redistributing income is not only politically much

more difficult, but it is likely to be ineffective because it is based on a largely mistaken diagnosis of the problem.

6. Unhealthy behavior by the poor

One of the major causes of health inequalities is differences in behavior across income and educational groups; in rich countries, poorer people are more likely to smoke, are more likely to be obese (at least among women), are less likely to exercise regularly, are more likely to work in jobs that pose a risk of injury or disability (physical labor in a modern economy is more likely to be bad than good for health—think of a delivery driver carrying heavy packages), and are more likely to drink alcohol immoderately. While there is an element of choice in occupation and lifestyle, poor people lead heavily constrained lives, in terms of money, time, and choices, and some of these choices, even with their poor health consequences, may not be easily avoided under the circumstances. For example, without human capital from education, or financial capital from inheritances, people must often rely on their physical capacities and energies, and adopt occupations, as well as consumption styles, that involve heavy wear and tear on their bodies and on their health, Muurinen and Le Grand (1985), Case and Deaton (2005).

The health inequalities that come about through these life-style and occupational “choices” are once again addressable, if only in part, by addressing early life inequalities in health and in education, the same prescription that runs throughout this essay.

7. International health inequalities

The differences in life expectancy between countries dwarf those between different groups within countries. (This is true for income inequalities too.) There is an eight year difference in life expectancy between Japanese women (86.1 years) and Japanese men (78.0 years), but both Japanese men and women can expect to live almost twice as long as a newborn in the lowest life expectancy countries in sub-Saharan Africa (Zambia, Angola, and Swaziland.) Infant mortality rates—which are the main drivers of differences in life expectancy between rich and poor countries—vary from three per thousand in Iceland and Singapore (who says the tropics must be unhealthy?) to more than 150 per thousand in Sierra Leone, Afghanistan, and Angola. In 1990, more than a quarter of children in Mali did not live to see their fifth birthdays, a marked *improvement* over 1960 when around half died in childhood—or put even more starkly, when median life expectancy at birth was only five years.

The children who die in poor countries would not have died had they been born in rich countries. The same is true of adults with AIDS, whose life expectancy is greatly prolonged in rich countries by the routine use of anti-retroviral drugs that are far from universally available elsewhere. At a medical level, we also know how to prevent the death of children in poor countries. They are not dying of exotic, tropical diseases for which there are no medicines, but from respiratory infections, from diarrhea, from diseases associated with malnutrition, from lack of neonatal care, or from diseases like polio or measles, for all of which there are known, cheap, cures or preventions. Children in rich countries do not die of these

causes, although they once did, and as with health inequalities within countries, these international inequalities are a consequence of the unequal adoption of once new methods and knowledge. These deaths are surely the greatest of the health-related injustices. Yet matters are even worse, because these health injustices are compounded by income injustices. As with health, between country inequalities in income are much larger than within country inequalities in income, and the countries that are at the bottom of the health heap are generally also the countries that are at the bottom of the income heap. A newborn child in Angola or in the Democratic Republic of Congo not only has a life expectancy that is about half of that of a newborn child in Japan but while alive, can expect to “enjoy” an income level that is only 6.4 percent (Angola), or less than one percent (DRC) of Japan’s.

For cosmopolitan philosophers, international health and income inequalities are injustices that ought to be corrected by the international community, and in the absence of a world government, this is a task for individual donors working through international NGOs and their own governments, as well as for the World Bank, the United Nations or its relevant arms, such as the World Health Organization or UNICEF, see for example Pogge (2002), Singer (2002, 2009). Other philosophers, such as Rawls (1999) or Nagel (2005) argue that the concept of justice does not apply in this international context, and that these inequalities, however extreme, are neither just nor unjust. A world government, whose putative powers of remediation might render the inequalities unjust, would bring injustice of another kind. That poor health in poor countries is internally unjust seems clear, especially

in those cases where first-world medical care and outcomes are found side by side with some of the world's worst health conditions. But the remedy for this injustice falls, not on the international community, but on domestic governments, which sometimes seem to have little interest in or ability to address it. Of course, these arguments do not absolve rich people from an obligation to assist those who are suffering, to the extent that it is feasible for them to do so.

Whether or not we adopt a cosmopolitan position, it is clear that neither the international organizations, private NGOs, nor the governments of rich countries have more than a very limited ability to correct international health inequalities, so that the practicalities are against the cosmopolitans. This is not a matter of the citizens of the rich world being unwilling to pay the (relatively low) financial costs of the required vaccines, medicines, and health clinics. International health inequalities cannot be eliminated without the construction of well-functioning domestic healthcare systems that provide to the citizens of poor countries the preventative, pre- and post-natal and maternal care that is routine in rich countries. These systems cannot be constructed from the outside, but require domestic state capacity, institutions, and responsibility to citizens that is often missing in poor countries, and that may well actually be undermined by large financial flows from outside, Moss, Pettersson and van de Walle (2008), Epstein (2008). If this undermining is important, as I believe it is, there is a risk that a well-meaning cosmopolitan attempt to address international health inequalities might actually make them worse and cause even greater injustice and suffering.

None of this is to deny that much has already been done to improve health in poor countries by the application of first world knowledge (the germ theory of disease) and techniques (vaccination, smallpox eradication). Nor that rich countries cannot do more through basic research (e.g. that AIDS is a sexually transmitted disease, or the development of ARV drugs) or international legal arrangements (e.g. trade rules governing the international prices for vaccines and medicines.) Yet the leading sources of mortality in poor countries, especially among children—respiratory infections, diarrheal disease, lack of vaccinations among hard to reach populations—are not addressable by “vertical” health campaigns run by or with the assistance of international organizations.

8. Income inequality as a risk factor for health

The health inequalities literature frequently argues that differences in incomes cause health differences, a position that I have argued is largely mistaken. A related but different view is that differences in income are themselves a risk factor for the *level* of health (as well as for the levels of other good social outcomes), so that the rich as well as the poor are hurt by large income differences, Wilkinson (1986), Wilkinson and Pickett (2010). In effect, income inequality is a form of social pollution which, like actual particulate or chemical pollution, risks the health of everyone, rich and poor alike. That income inequality should be a risk factor is sometimes referred to as the “relative income hypothesis,” but this is a misnomer because it is possible for health to depend on income relative to others, on rank, or on status, without income inequality having

any effect on health, Deaton (2003). The evidence for the income inequality hypothesis, which has taken different forms over time, typically rests on correlations across countries, or across American states, of various health measures with various measures of income inequalities. I have argued elsewhere that these contentions are incorrect, Deaton (2003), and similar conclusions have been reached in the epidemiological literature, Lynch, Davey Smith, Harper, Hillemeier, Ross, Kaplan and Wolfson (2004), Lynch, Davey Smith, Harper, and Hillemeier (2004); nothing in the more recent literature invalidates these conclusions. Yet there are other arguments about inequality, injustice, and health that are quite different from those advanced by Wilkinson, and that are at risk of being undermined ignored because of the weakness of Wilkinson's evidence and the controversy that surrounds it.

Inequality had important historical effects on health, but the mechanisms were not through pollution-type effects of *income* inequality, but through political *inequality*. Szreter (1988) has argued that the cleaning up of the cities in Britain in the middle of the 19th century had to await the elimination of a political injustice, that working people—who suffered from the dreadful sanitary conditions produced by the industrial revolution—were not permitted to vote. After the Reform Acts, and the extension of the franchise, new political coalitions were formed which led, in turn, to an emphasis on urban health. Another example comes from the effects of the Civil Rights Act in the United States on the desegregation of clinics in the American south, Almond, Chay and Greenstone (2007). Again, when voting machines with candidates' photographs were introduced in Brazil between 1994

and 2002, illiterate or poorly educated voters were better enfranchised, and the spatial pattern of the introduction of the machines matched the spatial pattern of subsequent improvements in spending on public health, in pre-natal care, and in the fractions of low birth-weight babies, Fujiwara (2010).

In the United States today, and to a lesser but parallel extent in the other rich English speaking countries, Atkinson (2003), there has been an almost unprecedented expansion in the fraction of national incomes going to those at the very top of the income distribution. Writers from Plutarch to Hume have emphasized the risks that extreme wealth concentration pose for good government, and there is good evidence that American government today is much more sensitive to preferences of the rich than to the preferences of the poor, or even the middle classes, Gilens (2005), Bartels (2008). Indeed, it is likely that at least some of the increase in the pre-tax incomes of top corporate executives and of financial managers have come about through the dismantling of regulations for which those interests have lobbied fiercely, Hacker and Pierson (2010). The very rich have no need of national health insurance, of disability or income support schemes, of public education, or of public policy that will limit the inheritance of deprivation from parents to children. They do not wish to pay taxes to support such schemes, and their immense wealth and political influence provides them with a potent weapon to prevent them having to do so. There is much to fear from the expansion of this kind of income inequality where injustices in one aspect of well-being can breed injustices in others.

9. Conclusions

Health inequalities are a matter of great moral concern. But whether we see them as an injustice, and whether and how we design policy to correct them, depends on how they come about. In this essay, I have argued that childhood inequalities are the key to understanding much of the evidence, and that public interventions would do well to focus on breaking or weakening the injustice of parental circumstances determining child outcomes. Among adults, the main priority should be the design of schemes that prevent the impoverishment that can come from ill-health, through loss of the ability to work, or through the costs of treatment. It is also important not to use health inequalities as an argument for limiting health innovations that will benefit all, though there will often be a role for public policy in ensuring that beneficial innovations spread rapidly through the population. As to the largest health inequalities of all, which come from poor health in poor countries, I believe that these cannot be regarded as an injustice, or at least not an international injustice, and that assistance from outside, while sometimes possible and effective, may also undermine the institutions that are needed to support domestic health. Finally, I believe that the recent concentration of wealth at the very top of the income distribution in the United States (and other English speaking countries) is a serious threat to well-being, through its possible long-term effects on health, education and democracy.

9. Citations

- Almond, Douglas V., Kenneth Y. Chay, and Michael Greenstone, 2007, "Civil rights, the war on poverty, and black-white convergence in infant mortality in the rural south and in Mississippi," Department of Economics, MIT, September.
- Atkinson, Anthony B., 2003, "Income inequality in OECD countries: data and explanations," *CESifo Economic Studies*, 49:4, 479-513.
- Bach, Peter B., Hoangmai H. Pham, Deborah Schrag, Ramsey C. Tate, J. Lee Hargraves, 2004, "Primary care physicians who treat blacks and whites," *New England Journal of Medicine*, 351:6, 575-84.
- Bartels, Larry, 2008, *Unequal democracy: the political economy of the new gilded age*, Russell Sage,
- Case, Anne, and Angus Deaton, 2005, "Broken down by work and sex: how our health declines," in David A. Wise, ed., *Analyses in the economics of aging*, Chicago. Chicago University Press, 185-205.
- Case, Anne, Diana Lee, and Christina Paxson, 2008, "The income gradient in children's health: a comment on Currie, Shields, and Wheatley Price," *Journal of Health Economics*, 27:3, 801-7.
- Case, Anne, Darren Lubotsky and Christina Paxson, 2002, "Economic status and health in childhood: the origins of the gradient," *American Economic Review*, 92:5, 1308-34.
- Case, Anne, and Christina Paxson, 2005, "Sex differences in morbidity and mortality," *Demography*, 42:2, 189-205.
- Case, Anne, and Christina Paxson, 2008, "Stature and status: height, ability, and labor market outcomes," *Journal of Political Economy*, 116:3, 499-532.
- Conti, Gabriella, James Heckman, and Sergio Urzua, 2010, "The education-health gradient," *American Economic Review, papers and proceedings*, 100:2, 234-8.
- Currie, Janet, 2009, "Healthy, wealthy, and wise: socioeconomic status, poor health in childhood, and human capital development," *Journal of Economic Literature*, 47:1, 87-122.
- Currie, Janet, 2011, "Inequality at birth: some causes and consequences," *American Economic Review*, 101, forthcoming.
- Currie, Janet and Mark Stabile, 2003, "Socioeconomic status and child health: why is the relationship stronger for older children," *American Economic Review*, 93:5, 1813-23.
- Cutler, David, Angus Deaton, and Adriana Lleras-Muney, 2006, "The determinants of mortality," *Journal of Economic Perspectives*, 20:3, 97-120.
- Cutler, David, Adriana Lleras-Muney, and Tom Vogl, 2010, "Socioeconomic status and health: dimensions and mechanisms," forthcoming in *Oxford Handbook of Health Economics*.
- Deaton, Angus, 2003, "Health, inequality, and economic development," *Journal of Economic Literature*, 41:1, 113-58.
- Deaton, Angus, and Darren Lubotsky, 2003, "Mortality, income, inequality, and race in American cities and states," *Social Science and Medicine*, 56:6, 1139-53.

- Epstein, Helen, 2008, *The invisible cure: why we are losing the fight against AIDS in Africa*, Picador.
- Fujiwara, Thomas, 2010, "Voting technology, political responsiveness, and infant health: evidence from Brazil," Department of Economics, University of British Columbia. <http://grad.econ.ubc.ca/fujiwara/jmp.pdf>
- Gilens, Martin, 2005, "Inequality and democratic responsiveness," *Public Opinion Quarterly*, 69:5, 778-96.
- Hacker, Jacob S., and Paul Pierson, 2010, *Winner-take-all politics: how Washington made the rich richer and turned its back on the middle class*, Simon and Schuster.
- Harris, Bernard, 2004, "Public health, nutrition, and the decline in mortality: the McKeown thesis revisited," *Social History of Medicine*, 17:3, 379-407.
- Hausman, Daniel M., 2009, "Benevolence, justice, well-being and the health gradient," *Public Health Ethics*, 2:3, 235-43.
- Hausman, Daniel M., 2007, "What's wrong with health inequalities?" *The Journal of Political Philosophy*, 15:1, 46-66.
- Heckman, James J., 2007, "The economics, technology, and neuroscience of human capability formation," *Proceedings of the National Academy of Sciences*, 104:33, 13250-5.
- Johansson, Sheila Ryan, 2010, "Medics, monarchs, and mortality, 1600-1800: origins of the knowledge driven health transition in Europe," Available at SSRN: <http://ssrn.com/abstract=1661453>
- Link, Bruce, and Jo Phelan, 1995, "Social conditions as fundamental causes of disease," *Journal of Health and Social Behavior*, 35 (extra issue), 80-94.
- Lynch, John, George Davey Smith, Sam Harper, Marianne Hillemeier, Nancy Ross, George A. Kaplan, and Michael Wolfson, 2004, "Is income inequality a determinant of population health? Part 1. A systematic review," *The Milbank Quarterly*, 82:1, 5-99.
- Lynch, John, George Davey Smith, Sam Harper, and Marianne Hillemeier, 2004, "Is income inequality a determinant of population health? Part 2. US national and regional trends in income inequality and age- and cause-specific mortality," *The Milbank Quarterly*, 82:2, 355-400.
- Marmot, Michael G., 2004, *The status syndrome: how social standing affects our health and longevity*, New York, Holt.
- Moss, Todd, Gunilla Pettersson, and Nicolas van de Walle, 2008, "An aid-institutions paradox? A review essay on aid dependency and state building in sub-Saharan Africa," in William Easterly, ed., *Reinventing foreign aid*, Brookings, 255-81.
- Muurinen, Jaana-Marja, and Julian Le Grand, 1985, "The economic analysis of inequalities in health," *Social Science and Medicine*, 20:10, 1029-35.
- Nagel, Thomas, 2005, "The problem of global justice," *Philosophy and Public Affairs*, 33:2, 113-47.
- Pampell, Fred, 2002, "Cigarette use and the narrowing sex differential in mortality," *Population and Development Review*, 28:1, 77-104.
- Pogge, Thomas, 2002, *World poverty and human rights*, Polity Press.

- Porter, Roy, 2000, *The creation of the modern world: the untold story of the British Enlightenment*, Norton.
- Rawls, John, 1999, *The law of peoples*, Harvard.
- Razzell, Peter E., 1977, *The conquest of smallpox: the impact of inoculation on smallpox mortality in eighteenth century Britain*, Firlie. Caliban.
- Sen, Amartya K., 2002, "Why health equity?" *Health Economics*, 11, 659-66.
- Singer, Peter, 2002, *One world: the ethics of globalization*, Yale.
- Singer, Peter, 2009, *The life you can save: acting now to end world poverty*, Random House.
- Skinner, Jonathan, James N. Weinstein, Scott M. Sporer, and John E. Wennberg, 2003, "Racial, ethnic, and geographical disparities in rates of knee arthroplasty among Medicare patients," *New England Journal of Medicine*, 349:14, 1350-9.
- Skinner, Jonathan, Amitabh Chandra, Douglas Staiger, Julie Lee, and Mark McClellan, 2005, "Mortality after acute myocardial infarction in hospitals that disproportionately treat black patients," *Circulation*, 112, 2634-41.
- Smedley, Brian D., Adrienne Y. Stith, and Alan R. Nelson, eds., 2002, *Unequal treatment: confronting racial and ethnic differences in health care*, Washington, DC. Institute of Medicine.
- Szreter, Simon, 1988, "The importance of social intervention in Britain's mortality decline c 1850-1914: a reinterpretation of the role of public health," *Social History of Medicine*, 1, 1-37.
- Vallin, Jacques, 1991, "Mortality in Europe from 1720 to 1914: long-term trends in patterns by age and sex," in R. Schofield, D. Reher, and A. Bideau, eds., *The decline of mortality in Europe*, Oxford University Press.
- Wilkinson, Richard G., 1996, *Unhealthy societies: the affliction of inequality*, London: Routledge.
- Wilkinson, Richard G., and Kate Pickett, 2009, *The spirit level: why more equal societies almost always do better*, London. Allen Lane.