

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

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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 them as unjust when they are not compensated for by other components of well-being, when they do not play an essential part in some other good outcome, or when they cannot plausibly be attributed to freely undertaken personal choices. Health

inequalities are unjust when they are part of an overall distribution of well-being that is different from what it ought to be.

Finally, 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 life expectancy among the general population. For the ducal families up to 1750, life expectancy was no higher than, and sometimes lower than, the life expectancy of the general population. This changed in the century after 1750 when 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 were the first to give up smoking and to adopt 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? Absent some extraordinary constellation of offsetting factors, 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. The possession of power and money may have protected health in some ways and hurt it in others, but the overall point is the same, that without some understanding of causes and cures for ill-health, high status affords no protection. 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, in periods when there is nothing that power and money can do, 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 if, for example, the innovations are initially expensive. Moreover, if the initial health inequalities indicate that there are general health benefits to come, and provide incentives for the spread of innovation, we may be more tolerant of an initial temporary inequality. 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.

I am *not* arguing that innovations are the *only* cause of health inequalities; for example, we know that health inequalities differ between places and countries

with the same health knowledge and technology and, as we shall see, there are many other causes of health differences between groups. Nor am I arguing that public policy should not target the health inequalities caused by new knowledge and treatments; indeed such inequalities are likely to be a good target, if only because we know something about how to address them. The argument is that these types of inequalities indicate the workings of a benevolent process, and policies to address inequalities should be designed so as not to hinder the diffusion of better health.

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 should take the 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. It is possible that African-Americans accept these conditions in return for other goods like cheaper housing near polluters. Even so, one might wonder whether they fully understand the trade-offs that they are making and, even if they do, the injustice is shifted back to the distribution of income, not removed.

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, even though income is likely to be one of the upstream causes of environmental injustice just as racism is certainly implicated in the general under-provision of public goods for African-Americans or indeed of welfare benefits more generally in the US relative to Europe, Alesina and Glaeser (2004). But the understanding of mechanisms is important, and it will often be easier and more effective to address the immediate causes rather than waiting for more general social change.

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—wealthy nations have both the means and the desire to extend their lives—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 some amalgam of income, education, rank, social class, 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 knowledge and life-lessons that are learned in school and college enable people to take better care of themselves and to take good advantage of the healthcare system when they need it. We also know that being sick adversely affects the ability to earn and to accumulate wealth—that is what the word “disabled” means. One of the many harms of ill-health is that it limits the way a person can achieve their goals, such as developing a successful, well-paid career, and accumulating wealth. Failing at those things is also a likely cause of ill-health, but any credible investigation of that link must adequately deal with the obvious deleterious effects of ill-health on income, position, and wealth. Wrapping education, position, income and wealth into an ill-defined object labeled “socioeconomic status,” taken to be the primary (and often only) cause, muddies the water and muddles the argument.

Almost certainly the most famous and influential work on socioeconomic status and health comes from studies of Whitehall civil servants led over many years by Michael Marmot, see for example, Marmot et al (1991), Marmot (1994), and Marmot (2005). This work shows a consistent link between civil service rank—in practice measured by income—and a wide range of health outcomes, a link that is interpreted as the effect of high rank on promoting health, and of low rank as a risk to health. These effects, attributed to psychosocial stress, appear to operate independently of standard risk factors, such as smoking and obesity.

It is easy to believe in the operation of these factors, but there are other mechanisms at work. In particular, even on their first day as civil servants, the future mandarins of Whitehall are not the same as the future clerks; they are better educated, their fathers come from higher social classes, they are taller, and they had better health as children. The later links between health and position within Whitehall are, to some extent, the working-out of these long-determined factors, “the long reach of childhood health.” Not surprisingly, civil servants do not look like the general population—they are much better educated, and more likely to be drawn from higher social classes—which means that analyses *within* Whitehall cannot correctly disentangle the competing effects on health of early events and of civil service rank. In an important recent paper made possible by the much-welcomed (but very recent) release of Whitehall data, Case and Paxson (2011) show that an uncorrected analysis of Whitehall data leads to an *understatement* of the effects of early life conditions, and an *overstatement* of the effects of rank. The mechanism is straightforward. If a lower status youth is to

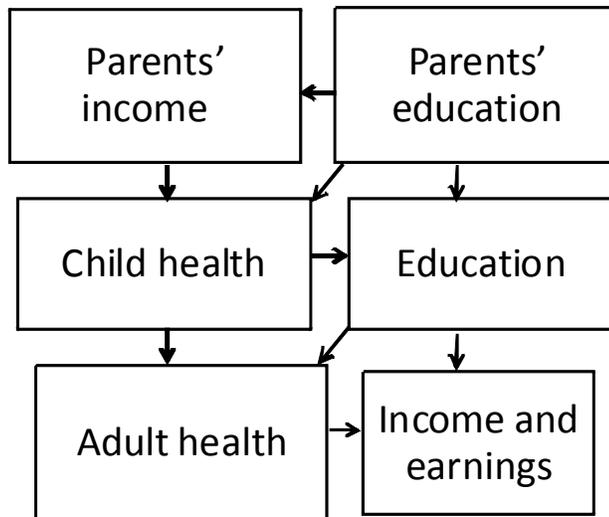
make it through the Whitehall selection process, he or she must have some compensating ability or special talent, and those unobserved factors are almost certainly positively correlated with health. In consequence, the relationship between early life circumstances and health is attenuated within those who actually make it into Whitehall, because those from poorer backgrounds are much better on other things that we cannot measure, and part of what should be attributed to early life finishes up being attributed to rank. Case and Paxson carefully document the reality of these biases by comparing the Whitehall civil servants with matched samples from two British cohort studies.

Much of the link between rank and health in Whitehall can also be explained by standard health behaviors. A paper by members of the Whitehall team, Stringhini et al (2010), but writing without Marmot, shows that “the association between socioeconomic position and mortality... was substantially accounted for by adjustment for health behaviors, particularly when the behaviors were assessed repeatedly” (p 1159). Earlier studies had measured behaviors at baseline only.

These two new studies, although only two among many, undermine one of the main conclusions of the Whitehall studies to date, that rank, in and of itself, is protective against mortality. When we also note that much of this literature makes no allowance for the “obvious” causality acting in the opposite direction—even in Whitehall, early onset Alzheimer’s, or chronic emphysema must negatively affect promotion and income prospects—it is unclear how much evidence is left for the operation of psychosocial stress working through rank. Of course, none of this is to

deny the importance of social forces on health, and in particular why health

behaviors are so socially graded, a topic that I turn to in the next section.



My own reading of the most important links is shown in the (over)simple account in the Figure. This 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 some divergence of views. 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 is required is the construction of health insurance and disability schemes that insure, not 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 among adults. 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.

Even so, and as I shall note in my final section, income inequality may, in some circumstances, pose a threat to society's ability to offer equal opportunity to its children, and education and public health programs may not be able to do the job on their own. To this degree, income redistribution may be important for children, if less so for adults.

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), are more likely to live in a polluted atmosphere, and are more likely to drink alcohol immoderately. While there is an element of choice in occupation, location, 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 adverse 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, Muirinen and Le Grand (1985), Case and Deaton (2005). If we believed that these life style choices were freely enough made so that people can be held responsible for them, it might be argued that the health inequalities that they cause are not unjust. This may be true in part, but the social patterning of these behaviors should make us cautious about any such supposition.

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 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. If we think that where people are born has no moral relevance for assessing their outcomes, 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, who believe that national borders are morally irrelevant, 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), or Sen (2008). Other philosophers, such as Rawls (1999) and 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. Justice, according to this argument, is part of the social contract within a state, it is what is owed by the state to its citizens; "A political community that exercises dominion over its citizens, and demands from them allegiance and obedience to its laws, must take up an impartial, objective attitude toward them all," Dworkin (2000, quoted by Nagel). No such obligation exists between different peoples. Indeed, Rawls argues that "decent" peoples have a moral standing of their own *as peoples*, so that interference from outside to enforce a global interpretation of justice would be no more justified than the interference by one family in the affairs of another on the grounds that it was insufficiently egalitarian. Similarly, a world government, whose putative powers of remediation might render international inequalities unjust, would bring injustice of another kind, Wenar (2006). 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.

An important counterargument is that the world is not a set of islands on which the different peoples live, but a deeply interconnected global community, within which at least some international organizations -think the IMF or the World Trade

Organization—have substantial powers over the global distribution of income, powers that arguably carry an obligation to international justice, Van Parijs (2007). Even Rawls and Nagel argue for an obligation to assist those peoples who do not have the resources to be “decent,” at least to the extent that it is feasible for the international community to do so, about which Rawls himself expressed considerable skepticism, especially through financial transfers. Given the depths of poverty and ill-health in much of the world, the obligation to assist and the obligation to justice may not look very different in practice. Yet there are clear areas where cosmopolitanism does indeed seem to risk injustice in its health practices. One example comes from important recent initiatives by the UN and the WHO to target non-communicable diseases, especially heart disease and cancer, on the grounds that most deaths in poor countries—outside of Africa—are now from these causes. These initiatives may be helpful in finding new ways to treat these conditions in resource-poor contexts. Yet these international priorities may not be those that individual countries would adopt on their own; for example, India might very reasonably choose to give child malnutrition (largely among the poor) higher priority than treatment for (say) diabetes (largely suffered by the better-off), even though there is more diabetes in India than anywhere else in the world. Yet international priorities often have a large effect on national policies.

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, the very essence of domestic justice. The development of these institutions may 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 suffering and (cosmopolitan) injustice.

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 or ignored

because of the weakness of Wilkinson's evidence and the controversy that surrounds it.

Inequality has 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 prefer-

ences 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 innova-

tions 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 do not believe that labeling them as an international injustice is either correct or helpful. To the extent that it is possible, individuals, individual nations, and the international community have an obligation to assist those who are suffering the worst of health and material deprivation, but the argument should be on the grounds of common humanity, and not international justice. Whatever the motivation, feasibility is a serious concern. 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.

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