

UNNATURAL CAUSES ...is inequality making us sick?

A four-hour series airing on PBS and a national public impact campaign

INTERVIEW WITH SIR MICHAEL MARMOT

Edited transcript of interview filmed for UNNATURAL CAUSES

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What led you into public health?

As a young doctor, I used to work in a cardiac clinic and a chest clinic, and we used to see these people come in with heart disease, with chronic lung disease. We'd patch them up and we'd send them home, and three months later back they were again. As a not very well educated young physician, I used to walk around the wards and say, "This doesn't make sense to me. This is applying band aids." I don't think we should withhold band aids. If people are sick, they need to be treated. But shouldn't we be trying to do something to prevent the recurrence of the disease? And then if we think about preventing recurrence of disease, shouldn't we be trying to prevent the illness in the first place?

This came home to me when I had a spell in psychiatry. A woman would come in and she'd say, "Doctor, I'm feeling dreadful. My husband's in prison, my son's been using drugs, my daughter's gone off the rails, and I'm feeling dreadful." And the doctor would say, "Take these blue pills." And I thought: Here's this woman who objectively has a horrible set of circumstances, and we're saying, "Take these blue pills." Shouldn't our responsibility, as people who are concerned with the health of individuals and communities, try and deal with the circumstances that led her to be ill in the first place?

Now, as a single physician, you can't do that. The doctor can't get her husband out of prison, get the son off drugs, and put the daughter back on the tracks. He can't do that, or she can't do that as an individual. It's only as a government, as concerted action, that you can start to take action on the conditions that led to people getting ill in the first place.

So from my own experience as a doctor – not from study and not from understanding from books or journals – I thought, there's got to be a better way. That's what led me not just into public health, but also into public health that looked at the nature of society as it affects illness.

How did the Whitehall study originate and what did it find?

There was the famous Framingham study done in the United States that looked at risk factors for heart disease: smoking, blood pressure, cholesterol, overweight. You study individuals; you look at their risk factors and see if they get disease. And a couple of senior professors in the U.K. wanted to start a sort of British Framingham. Being British, it was going to be done on the cheap, but nevertheless they said, "Let's do it." So it started off in civil servants, because

there're any number of them, and you can get hold of them, and started off as a study of risk factors and disease. When I came along and joined the team and then took it over, I was interested in how social influences affect disease. So we looked at people's grade in the hierarchy, their employment grade. That hadn't been the original purpose of the study. It was to look at smoking, cholesterol, blood pressure, etc., as risk factors of disease – individual behaviors, individual attributes. And the striking thing was the social gradient.

“We find these social gradients in health everywhere”

You have to remember, when we did this, in the 1970s, the conventional wisdom was that it was the business executive who had a high rate of heart attacks. It was the person with executive stress, who was running to keep in place and striving, etc., hard driving. People would say, “Don't work so hard, you'll get a heart attack.” That was the conventional wisdom.

What we found in Whitehall was that the lower the grade of employment, the higher the risk of heart disease. But not just heart disease, every major cause of death. And that was a bit shocking. The higher the grade, the better the health. The lower the grade, the higher the mortality rate and the shorter the life expectancy, in this remarkably graded phenomenon. So if you were second from the top, you had worse health than if you were at the top; if you were third from the top, you had worse than if you were second from the top—all the way from top to bottom.

The other striking thing about Whitehall is that none of them is poor in the conventional sense. We're used to thinking that poverty is bad for health, and so it is. Poverty is dreadful for health. But even the lowest grades of British civil service are not poor in any absolute sense of the word. And certainly it's a puzzle why somebody who is a senior executive officer should have a higher risk of death and a shorter lifespan than somebody who is above him in the hierarchy who is a senior administrator, and the senior executive officer would have lower risk than an executive officer, who would have lower risk than a clerical officer. It was this gradient. It was not just about poverty. .

So we haven't got the richest people in society, we haven't got the billionaires, and we haven't got the poorest people in society, and we haven't got anybody who's unemployed or has any risk of losing their job. And yet we see this remarkable social gradient. The people at the bottom of the hierarchy had four times higher risk of death than people at the top. The people in the middle had twice the mortality risk of the people at the top—in people who were not exposed to any of the usual hazards.

What we found in Whitehall turns out to be a remarkably general phenomenon. It was seen in the national statistics in Britain. Then “classless” countries like the United States and Australia and Scandinavia said, “Well, we wouldn't find that here, because we don't have social classes like they do in Britain.” And of course, once people started to look at the United States and Australia and Canada and Scandinavia, they found social gradients in disease of the same order as those we found in Britain. So it was not because the civil service is atypical, and it was not because Britain is a class-ridden society. We find these social gradients in health everywhere.

Why would hierarchy and class status affect health? Is it about medical care? Behaviors? Power?

Well, let me start with the usual suspects. People's first reaction is, "Well, it must be medical care." And that, of course, is the reaction one gets in the United States. In the U.S., where in excess of 40 million people don't have health insurance, and some larger number have inadequate coverage, people's first assumption is that poor health amongst the poor must be due to lack of medical care. Now, we wouldn't claim that the British National Health Service any longer is the envy of the world. On the other hand, there is universal coverage. Everybody has access to medical care. It may not be entirely equal across the social spectrum, but it would be hard to argue that a civil servant second from the top has worse health than one at the top because he has worse access to medical care. It's just not credible. So the medical care argument has to be addressed, and it's very important. Certainly my response to American colleagues who worry about the lack of access to medical care in the U.S. is, "I agree with you 100%. Any civilized society should guarantee universal access to high quality medical care. That's a *sine qua non* of living in a civilized society. And once you've done that, you will *still* find that you have inequalities in health. The social gradient is not primarily due to differential access to medical care."

The second assumption people make is, "It must be due to behavior, to lifestyle. People down at the bottom smoke more; they eat more French fries; they do less exercise. Surely that must be the reason." What we found in Whitehall was the same social gradient mortality in people who'd never been smokers as in smokers. So yes, it is the case that the lower you were in the hierarchy, the more likely you were to smoke, and smoking is an absolutely, fundamentally important cause of premature death and illness. But it was not the main explanation of the social gradient. In fact, a combination of smoking, blood pressure, cholesterol, overweight, sedentary lifestyle, explained no more than about a *quarter* of the social gradient in mortality. So it wasn't medical care and it was not primarily lifestyle.

So then the question is: What is it? It's all very well ruling out the negative; what's the positive? We were very interested in how the circumstances in which people live and work affect health through this most important organ, the brain. And in people who are above the minimum level of absolute material conditions required for good health, the gateway to health inequalities is through the mind.

We have strong evidence that there are two important influences on health in explaining the hierarchy in health. The first is autonomy, control, empowerment. People who are disempowered, people who don't have autonomy, people who have little control over their lives, are at increased risk of heart disease, increased risk of mental illness. In the Whitehall studies, increased risk of absence from work and increased risk of decrements in functioning, in physical, psychological and social functioning. So autonomy, control, empowerment turns out to be a crucial influence on health and disease. And there are good biological reasons why that might be the case.

The second is what I loosely call social participation. It's being able to take your place in society as a fully paid-up member of society, as it were, to benefit from all that society has to offer. Now, in part that's social supports and social networks, but it also functions at a psychological level. It's self-esteem; it's the esteem of others. It's saying that I can benefit from the fruits that society has to offer.

And these two influences seem to be crucially involved in the social hierarchy, because the lower people are in the hierarchy, the less autonomy and control they have, and the less able they are to participate fully in society.

Why would control and empowerment affect health?

If you ask, “Well, what does control mean,” well, we operationalized it in the workplace by asking people seven simple questions that were to do with who makes the important decisions about with whom you work, what you do, when you do it, how you do it, and so on. And the more people say that “other people make those decisions, not me,” when we then follow them, the greater risk of heart disease, of mental illness, of other aspects of illness. And we’ve also shown they had metabolic disturbances, the so-called metabolic syndrome, which increases risk of diabetes. We’ve shown that these work factors increase risk of the metabolic syndrome related to insulin resistance and lipid disturbances that, we think, increase risk of diabetes and heart disease.

“There are all sorts of ways we’ve devised for depriving people of a sense of control over their lives.”

Now, there are ways of depriving people of control over their lives, other than in the workplace. Being a single mother is really quite a neat way to have little sense of empowerment, because you’re bound down by responsibilities, you’re poor, you can’t participate. Being relatively poor, having job insecurity. There’re all sorts of ways we’ve devised for depriving people of a sense of control over their lives. Living in a community where it’s not safe to go out, being an older person who can’t get around. All of those things will decrease control over people’s lives, and all of those things are likely to increase risk of illness.

So, how does power – or disempowerment and subordination – get under the skin and affect our physiology?

We’re programmed by our evolutionary past to respond to stressful circumstances in particular ways. The body has defense mechanisms. Now, those defense mechanisms can be elicited by psychological threats, not just by physical threats, not just by predators but by psychological threats. One set of circumstances that elicits these body stress reactions is having little control over the circumstances that are affecting you. And that activates these pathways that are put there by nature, as it were, to defend the body in response to an acute threat. When that threat is prolonged and you get prolonged activation of these stress pathways, then you can have bad effects.

The two pathways that have most been studied – we ourselves have also studied them – is the pathway that goes from the brain to affecting cortisol, and the pathway that goes from the brain to affecting adrenaline, epinephrine, the acute stress response. Both of those are very important. The acute stress response, the epinephrine one, is a bit quicker. The cortisol one is a bit slower.

Now, it’s very necessary to have that cortisol response. It damps down inflammation. It mobilizes glucose when you need it. But if it goes on when you don’t need it, bad things can happen. And we’ve got evidence that when you stress people in a prolonged way, you get changes to that cortisol pathway, and that seems likely in turn to lead to a whole set of metabolic biochemical disturbances in the body that increase risk of diabetes and of heart disease. The so-

called metabolic syndrome that people talk about – with putting on weight round the middle, with lipid disturbances, that increase risk of diabetes – we show that stress at work leads to increased risk of the metabolic syndrome. And the more occasions on which you have stress at work, the more likely you are to have the metabolic syndrome.

But you're not solely concerned with stress at work.

Absolutely not. Stress at work is only one way that you can influence these pathways. When I was talking about control, I said there are any number of ways you can deprive people of control over their lives, other than in the workplace. When we talk about social participation, we don't only mean having a job and going out to work. We mean getting the benefit of the fruits of society in a whole variety of ways. So it's not only about work. It's about where you are in the hierarchy, and how that relates to the circumstances in which you live, grow up, as well as work.

How do the steep inequalities and socio-economic hierarchies in the U.S. relate to the poor health of even our middle class?

I think the point about the hierarchy is of actually fundamental importance in trying to understand what's going on. The ways of doing without have changed. In the past, when people did without, they did without proper housing, they did without clean water, they did without sewage, they did without adequate nutrition. But that's changed. If you ask people what it means to be poor today, they will tell you it's not being able to buy children new clothes; it's not going on a family holiday; it's not being able to entertain children's friends; it's not having a smart pair of clothes to go to a job interview. Now, we don't think those things lead to ill health in the way that lack of clean water and lack of sanitation led to ill health. We think those things are very important for health, but they must be operating through different pathways.

Now, that's very important because what I'm describing, in a sense, is a *relative* concept. That's not absolute. We have what is an accepted standard of living for our society today. Now, that may change. That may change if you're living in Newton, Massachusetts, or if you're living in Harlem. What's considered reasonable in our society will depend in part on the subset of the society in which you live. And you can have all the prerequisites for good health in terms of material conditions, but still be *relatively* deprived.

“Relative deprivation translates into absolute deprivation in how well able you are to participate in society, to take control over your life...”

I think the way to think about this is that relative deprivation in, let's say, the measurement of income or housing size, translates into *absolute* deprivation in what you can do, in other words, how well able you are to participate in society, to take control over your life – what Amartya Sen calls “capabilities.” So relative deprivation is really a very important concept. But it's important because it relates to these concepts that I've

been discussing, about how much empowerment you have and how able you are to participate.

It's of vital importance because when people think about inequalities in health, disparities in health, they tend to think it's a problem of the poor, “them”; it's not a problem of “us”, the non-poor. It's a “them” and “us.” And that's the wrong way to think about it. It is a problem for us. It is our problem. Let me give you one example.

We did a study comparing health – illness; but not mortality; self-reported illness – and biological markers of illness, in Americans and British of age 50 to 65. And what we found in both societies, in England and in the United States, was the social gradient. The lower you were, the more illness. But strikingly, what we found was, the Americans had more illness than the English, even in the top third of the distribution measured on income or education. The better-off Americans had more illness than the better-off English. And in fact, so high was the illness level that the better-off Americans had nearly as much illness as the worst-off English. So it's something that's affecting the whole of society. And if you look at the U.S. as a whole, the U.S. is the second richest country in the world after Luxembourg, in terms of income. The U.S. ranks 29th in life expectancy. All this wealth is maldistributed. There are huge inequalities in this society, and I think that's in part why the U.S. as a whole has relatively poor health amongst the rich countries, and why even the better-off people are suffering.

Are hierarchies at the workplace – and thus graded health outcomes – inevitable?

One of the real dilemmas is that when you look at any complex organization, you realize, of course, that you have to have a hierarchy to make the thing function. You can't have everybody trying to make the decisions all the time, at every level. It doesn't work. Any complex organization needs that. So you could ask the question: Is it not inevitable that people lower in the hierarchy will have less control over their working lives than people above them in the hierarchy? And the answer is yes, to some extent it is inevitable, but that can be managed in a variety of different ways.

The management hierarchy can be arbitrary, it can be unfair, it can be difficult, it can not listen, it can do a whole set of things that take from people any sense of empowerment, any sense of involvement. Or it can be responsive, it can listen, it can be fair, it can operate the hierarchy in a reasonable way. Our evidence shows that's likely to lead to better health in the people that are in the hierarchy than the organization that doesn't take their needs into account.

So yes, there will always be hierarchies in a complex organization like hospital. There has to be. But those hierarchies can be operated in a way that's better for people's health or worse for people's health.

How does the wealth-health gradient in the U.S. compare to other nations?

One of the difficulties in getting national figures in the United States is that there hasn't been a long tradition of having income or social class, or education even, in nationally collected data. There've been lots of special studies that show the gradient in health. One way people have tried to look at national figures is to look at geographic areas. And one of the things that struck me is how dramatic the differences are in relatively small geographic areas.

I've used the analogy of a ride on the Metro system in Washington. If you get on the Metro in Washington DC and travel about 12 miles out to Montgomery County, Maryland, life expectancy has risen about a year and a half for each mile traveled. There's a 20-year gap in life expectancy between the low rate of about 57 for men in Washington DC, and 77 for men in Montgomery County, Maryland. A 20-year gap. So you've got the best-off and the worst-off living cheek by jowl in one geographical area.

Now, we see differences like that in London. In the London borough of Camden, where I live and work, I can get on my bicycle and I can cycle across, in about 25 minutes, a life expectancy gap of 10 years. So we do see a 10-year gap within one London borough of a population of about 300,000. In Washington DC, it's 20 years. So there's every reason to believe that these gradients in health are as big if not bigger in the United States as they are in other industrialized countries.

Why should viewers be concerned?

One way of thinking about the problem of inequalities in health is to say, "Well, there's poor people and that's unfortunate that poor people have poor health, but I'm concerned about the Siberian leopard, and I'm concerned about the penguins in the Antarctic, and I'm concerned about poor people in the same way that I want the Siberian leopard to survive." So it's a bad thing if poor people die, but it doesn't touch me." That's one way of thinking about it.

I think that's unfortunate for two reasons. The first is, I don't think poor people within our society are of equivalent moral standing, as it were, to the Siberian leopard. I think that our society is responsible for the higher mortality and the worst health of poor people within it. I'm a member of the society, which means I'm responsible.

But the second reason is that it touches me. Even if I didn't think of myself as a responsible member of society, and I couldn't care less what my society does to the less privileged and less advantaged people, the second reason for caring is not just "There but for the grace of God go I," but "There go I." This social gradient in health means that everybody below the top has worse health than people at the top. And we think that that is not inevitable. In other words, we're all in this together. We're all affected by it. You and I are affected by it. We're all affected by it, because the social gradient in health runs from top to the bottom.

"The large mass in the middle of society is also being affected by these societal and economic determinants of health."

What we see, taking American society, is that the best-off in the U.S. in terms of health are not as healthy as the best-off in some other countries. The best-off in the U.S. have worse health, more morbidity, more illness, than the best-off in England. So this inequality is a problem for society not only because it affects the health of the people at the bottom, but because it affects the health of everybody. It's our problem.

So it's pulling the whole society's health and wellbeing down.

It's an important question to ask, "How does this operate?" One way to be if it were simply: Well, the health of the poor people is lowering the average, because there're a lot of people there who have poor health so the average comes down. That's a statistical problem, and you could say I as an individual don't care much for statistics so that doesn't bother me.

But if it's the case that the conditions that lead to poor health amongst the poorest of our society lead to decrements in health amongst people who we don't think of as poor – "us" – then that's a much more immediate concern. The conditions in which we live and work: whether it's the safety of our communities, whether it's the nature of our working lives, whether it's job security, or whether it's the fact that, for example, in the period in the United States right through the

1980s and into the early 1990s, the bottom 80% of the income distribution had *declines* in real income – it was only the top 20% that had improvements. It's saying that the conditions that show up in stark form in the poor health of the poor, are showing up in somewhat less stark form—but nevertheless they're evident—in people who we don't think of as poor, who are above some threshold of poverty, who are in the middle. The large mass in the middle of society is also being affected by these societal and economic determinants of health.

Why do we also see a social gradient in behaviors like smoking?

It's a fair question. Why should we have a social gradient in smoking? Don't people know that smoking's bad for them? The answer is: Absolutely. Everybody knows that smoking is bad for them. All the evidence is that people aren't smoking out of ignorance. They know smoking's bad for them. One bit of evidence in support of that is, most smokers have tried to give up at some point. So that they know it's bad for them and they've tried to give up.

Why don't they? And I think the response is, "Do me a favor. I've got other problems to worry about. You're going to talk to me about smoking? I'm a single mother with two children." And again in Britain, nearly 100% of women in that category are smokers, single mothers with children. "I'm worrying how to pay the rent. I'm worrying how to feed my children. I don't have a single penny to spend on myself except the cigarettes. And you want to take that away from me? I'm worrying about how to get through next week, never mind worrying about avoiding lung cancer when I'm 60. I've got other things to worry about. Do me a favor."

If I went into an inner city area in the United States, where there's crack dealing and violence and society disruption, and say, "You know, you really shouldn't smoke," what do you think the reaction to me would be? I think that we've got to understand that it's not ignorance that leads people to continue to smoke. It's, they've got other worries and other concerns. And we've got to understand that.

So the question of why there is a social gradient in smoking, what to do about it, is of course of fundamental importance. But that's not the whole story. What we find, even for diseases related to smoking, is that a poor smoker has a higher rate of disease than a rich smoker. So heart disease among smokers, if a poor person's smoking, he or she has a higher rate of disease than if a wealthy person is smoking. And then we find, amongst people who've never smoked, we still find the social gradient in disease. So smoking is extremely important. We have to understand the social reasons why we find these hierarchies in smoking. But that's not the whole story. We actually find that there are socioeconomic differences in disease occurrence that cannot be attributed only to smoking.

Why do new immigrants tend to be healthier than the average American, and why do they get sicker the longer they live here?

When you look at the health of migrants, there are a number of influences on them. The first, which people tend not to think about very much, is: How do you become a migrant? And there tends to be a screening out of illness. You've got to be healthy enough to negotiate the whole process. Whether it's legal migration and not being refused because you've got tuberculosis or malaria or something else, or illegal migration and however else you manage to do it, you've got to be healthy enough to get through the process. And we see not only in the United States but we

see it in Britain as well: In immigrant after immigrant group, they're healthier than the country from which they came. They're healthier than the average of the country from which they came. And in some cases, that will make them healthier than the destination country, be it the U.S. or Britain. So it's a so-called "healthy migrant effect," because they're screened to be healthy. And we see that in workplaces as well, "healthy worker effect." People have got to be healthy enough to be in the workplace, so workers tend to be healthier than non-workers. But that wears off.

So then a second influence is this balance between the lifestyle, habits, community relations that people bring with them, and the degree of acculturation or change to the host society. I cut my epidemiological teeth on a study of Japanese migrants. It was when I was working in Berkeley, California. We did this study of Japanese living in Japan, Hawaii, and California. And graphically, as the Japanese move across the Pacific, their rates of heart disease go up, and their rates of stroke go down. So that people of Japanese ancestry in Hawaii have higher rates of heart disease than those in Japan, but lower rates than those of Japanese ancestry living in California. And stroke rates go the other way. They go down.

And then we studied people of Japanese ancestry living in California, and we actually measured the degree of acculturation. And the hypothesis that we had was that the change was related to the nature of Japanese society. Now you remember, in the 1960s, when they were first looking at this and we were studying them in the sixties and seventies, Japan had relatively low life expectancy. It wasn't the world champion that it is today, with a life expectancy of 82, but it was relatively low life expectancy. But we nevertheless argued that part of the reason for the low rate of heart disease in Japan was that Japanese culture had stress-reducing devices: the cohesion, of Japanese culture, the fact that it's well organized, it's not a culture in great flux, people know where they are and their position in the hierarchy and so on. And we argued that to the degree that Japanese people in California had that Japanese way of relating, of relating within the culture, the heart disease rates would be lower. And the more Americanized they become, the heart disease rates would be higher. And that indeed is what we found.

"To the degree that Japanese people in California had that Japanese way of relating within the culture, the heart disease rates would be lower..."

Now you might say, "Yes, but they were eating more hamburgers too, or they were smoking more." Well, they weren't smoking more, because in fact the smoking rates are very high in Japan. Yes, they were eating more hamburgers, and we controlled for that. For example, we looked at plasma cholesterol levels. And what we found is, this difference in heart disease, this high rate of heart disease in Japanese who are more acculturated, more assimilated, was *despite* any differences in plasma cholesterol level, in blood pressure, in smoking levels. There was something else going on.

So I think that is important. That reflects not only on migrant populations but on the population at large. The degree to which people are able to live in society groups with which they're comfortable seems to have a powerful influence on their health.

Is America making immigrants sick?

I wouldn't put it quite as strongly as saying "America is making migrants sick," because particularly where people came from poor countries, where the general society and economic

conditions for health were not good, then they're going to be better off when they come to a country with better society and economic conditions for health. The healthy migrant effect wears off, so they get sicker. But not necessarily sicker than they would have been had they stayed at home. So I don't think it's quite fair characterization to say America is making them sick. But the healthy migrant effect *is* wearing off.

What one can then look at, and one has to look at in much more detail, is different migrant subgroups, and to ask: Are they able to educate their children? Are they able to get good jobs? Do they have supportive communities? Or, for example, are they subject to great racial discrimination, living in disrupted communities, lack of access to good jobs, lack of access to good education for their children? So I wouldn't generalize and say America is making migrants sick. Far from it.

How does unemployment impact health?

When we look at unemployment, the evidence is very clear: the unemployed have worse health than people who remain employed. If we then stratify and look at the level in the hierarchy from which they departed, we find that people who were at higher levels and became unemployed have higher mortality than the ones at that level who remain employed; and people who are in the intermediate level who became unemployed have higher mortality than people at that level who remain employed, and so on. So we reproduce the social gradient in the unemployed, but at a higher level than the people who are employed.

And that's important because obviously one thing that happens when people become unemployed is, they become poorer. And the question: Is it just poverty of material circumstances that leads to worse health? And my answer is: I'm sure poverty of material circumstances is important, but not because they turn off your water supply and you start having to drink dirty water, or the toilets don't flush anymore, you no longer have adequate sewage. But I think because it decreases what you're able to do. If you had a certain standard of living—and interviews with unemployed people make this very clear—part of the hurt is the feeling that they can't take their place in society anymore. They blame themselves. They feel that they are not respectable members of the peer group. If it's men, their wives start saying, "Well, Bill's still got a job. Why haven't you still got a job?" And Tom thinks, "Yeah, maybe she's right. Maybe it really is me." And so they blame themselves. And they feel inadequate compared to their society group. So even though they still may have adequate resources to lead a modicum of a reasonable middle-class life, they can't do what they could before. They can't take their place in society.

And of course the other thing that unemployment does is, it disempowers you. You no longer have control over your life. You no longer can control things in the way you could when you were in a job.

And we find this even in people who have threatened unemployment. Job insecurity actually leads to worse health. It's the anticipation that your control is going to be taken away from you. The anticipation that you're going to be thrown on the scrap heap and not be a full participant seems to have a deleterious impact on health, as well as the actuality of having it happen.

What are the health consequences of government economic policies?

Well, I think the first thing is to understand that they happen. We had a minister of finance in Britain say that if an increase in unemployment is the price we have to pay to keep inflation down, then it's a price worth paying. Now, let's change that sentence a bit. If an increase in mortality rate of 20% is the price we have to pay to keep inflation down, it's a price worth paying. Can you imagine a minister of finance saying that? That's what an increase in unemployment means: an increase in 20% in mortality rates of the people who've been made unemployed. We have ministers of finance, as you do, who say labor market flexibility is a good thing. That's what makes the economy strong. The other side of labor market flexibility is job insecurity. If you think labor market flexibility is good for the economy, then in a way, you're saying making people sick because of job insecurity is good for the economy. I think the statement might be tempered if one actually understood the health implications of these policies.

Now, if you asked me: Are you therefore saying we shouldn't have labor market flexibility? Well, I'm not an economist, and happily nobody's ever asked me to design economic and employment policy for a country. I am, however, saying: Understand the fuller effect on individual of policies that are taken for other reasons.

Why might it be in a company's interest to give workers greater authority and autonomy?

I'd like to think that when we think about the health of a corporation and the health of the employees of that corporation, there's a virtuous circle; that what's good for the health of the employees is likely to be good for the health of the corporation. If you've got people who are healthier, they're likely to be happier, they're likely to be more productive. For example, we know that depriving people of control in their work circumstances leads to increased rates of sickness absence. I don't have the evidence but I'm willing to speculate that depriving people of control probably leads to lower productivity. If it certainly leads to them not coming to work, then it probably leads to lower productivity. So giving people more control in the workplace is probably good for their health *and* good for productivity, so it's good for the health of the corporation.

Now, making people insecure, management by big stick, keeping them on their toes, I think the evidence that that actually leads to a more productive company is pretty slim. So the idea that, "well, the most expendable thing we have are the workers, so if things are going well, we'll take them on, and things are going badly, we'll throw them away," is probably misguided, is probably not a good way to run a business. Because the most valuable thing you have are the workers, and the most valuable they can be for the company is by being loyal and motivated and hard-working, and seeing that their personal interests and the interests of the company are aligned.

And I think it's not too fanciful to suggest that that is what happens in Japan, that workers do identify with the company. They do see that their interests and the company's interests are aligned. And the company sees that the most precious resource it has is its employees. People have said that the fabled Japanese employment system of security of tenure isn't quite as widespread as we'd like to believe it is, but it's nevertheless a good deal more widespread than in the U.S. or

"Giving people more control in the workplace is probably good for their health and good for the health of the corporation."

the U.K.. Because there is stability of employment, people tend to commit to the company, they tend not to change from one company to another nearly as they do in the Anglo-Saxon community. The Japanese are selling more cars to your country and my country than we're selling to them. They don't seem to be doing too badly.

How does education affect health?

The way I think about education and health is in at least three ways. The first is that people who had better education, in general, came from more advantaged backgrounds; and that more advantaged background, including education, may have a long-lasting effect on health, because what happens early in life, including your education, may influence health subsequently, because all sorts of things get set early in life.

A second is that education is a pathway to better adult circumstances, and that those better adult circumstances lead to better health. So if you got more education, you get a better job, you get more money, you live in a better neighborhood, you're more able to cope with the demands of modern society and so on. So the first is a long-lasting effect of exposures early in life; the second is a pathway by which education leads to better society circumstances in adult life.

And the third is that it's education *per se*; that education ("health literacy," as people call it) actually helps you negotiate your way through the medical system, helps you understand the health messages and cope with doctors and understand what is expected of you in the medical care system. My own view is, the third is probably less important than the other two, but it still may operate.

Are you hopeful that we can change patterns of health and illness and close the gap? If so, how?

Well, firstly there's a general phenomenon that gives me optimism. If these inequalities in health, this gradient in health, was a fixed property of society and never changed, then you'd say, "Well, we can't do anything about it. It's just related to the hierarchy. We can't deal with hierarchies. We're stuck." But that's not the case.

And firstly, we can see that the magnitude of the inequalities in health changes over time. It can get rapidly worse, and if it can get rapidly worse, it ought to be possible to make it rapidly better. We've seen both in the United States and in the U.K. that the magnitude of the differences between top and bottom increased between the 1970s and the early part of the new millennium. Increased. But before that, it had decreased throughout the 20th century. So it means that this is not just, "Oh, it's capitalism or it's hierarchies. We've just got to live with this." It can get better and it can get worse. So that gives me some optimism in a general sense that it's changeable, if one understood how to do it and one had the will to try and do it.

Now, I think we do understand much of what we have to do. I don't think it's as mysterious as it used to be. And in Britain for example (and I have two specific grounds for optimism in Britain), I've been involved in an activity that the government set up, asking: What is it we can do to reduce inequalities in health? And we made 39 recommendations to government, but let me summarize.

I think there are four areas on which we need to concentrate. The first is early child development and education. This starts at the beginning of life. And I think the evidence is really pretty good right from the beginning of life, and I mean support to women of childbearing age and pregnant mothers, and support of young mothers with newborn children and infants and young children in the pre-preschool phase. That's a prime area where intervention is likely to make a big difference to life chances subsequently.

I think the second area is working life. And we've talked a great deal about the nature of how working conditions can affect people's health.

I think the third area is the structure of communities, of what we do in how we create better and worse communities in cities particularly.

And the fourth area is in support for older people in society. Are they thrown on the scrap heap, deprived of a role? Or are they continuing to have a role in society, to be more integrated into society?

Now, if you ask: Would anybody, of whatever political persuasion, be interested in these? And I would turn the question back and say: Why would they not be? Why would anybody, regardless of their political persuasion, not think that early child development and education were fundamentally important, that good working conditions were important? Because if you're the boss, it's likely to improve productivity as well as improve the health of your workers. And living in communities that were not hotbeds of violence and crime and insecurity, and that had amenities where people can enjoy living and growing up and having children. And support for older people. This is something that you would think would unite all swathes of society, of whatever political persuasion.

The other reason for some optimism is, I'm now involved in a new activity. I'm chairing a commission that the World Health Organization has set up, a Commission on Social Determinants of Health that was established by the director general of the WHO. And this commission is set up to examine inequalities in health within countries, and inequalities in health between countries, and to ask: "What can we do, on the society determinants of these inequalities in health, in order to improve things? We want to learn from what some countries

"We've got to create a movement where people understand we're talking about leading more flourishing lives..."

are already doing." So part of what the commission is doing is actually working with a number of partner countries. And part of what the commission is doing is actually synthesizing knowledge so we can make recommendations on what should be done.

Somebody asked me the other day, "Why are you optimistic that this will have more success than any previous attempt to trying to deal with these issues?" And I said, "Well, I'd have difficulty getting up in the morning if I didn't believe that we had some chance of success." And he said, "Well, that's why *you're* optimistic." He said, "Why should *I* be optimistic?" I said: "Well, I think there's a growing recognition." The

fact that the World Health Organization, really for the first time, has set up an activity like this, the fact that we've got buy-in from several countries who are supporting the commission, who are partnering in the commission, suggests that there's a recognition from governments as well as public health people in several countries that this is what we have to do in order to improve health; and that simple disease-control programs that don't pay attention to society determinants of health are likely to be less effective than those that do pay such attention.

What can individuals do to make a difference?

What can individuals do? Individuals can change the world, and nobody else can. If you ask, “Can I, as an individual, walk in and tell my boss to give me more control, or tell people to stop messing up my neighborhood and make it a more amenable place to live?” well, no, you don’t do that on your own. But to get local governments, national, state governments, federal governments to move, to get workplaces to change, individuals have got to force people in control to change, and force by becoming part of a collective, using their voting powers, changing the climate of understanding. Actually, governments will never move until the whole population’s moving in a certain direction, and then governments get round the front and pretend they led. We’ve got to create a movement where people understand we’re talking about leading more flourishing lives. It’s not only about health, important as that is. But health is a marker of an ability to lead a more flourishing life. And what these health gradients are showing us is that that potential is not working to the full. And it’s up to all of us, as individuals and working in concert with each other, to change that.

Recorded in Cambridge, Massachusetts on April 10, 2006 for use in the series UNNATURAL CAUSES: Is Inequality Making Us Sick?