

# Status syndrome

Health and longevity are intimately related to position in the social hierarchy. The lower the status, the higher risk of illness and death, and consequently the shorter the life expectancy. In his book of the same name, **Michael Marmot** calls this social gradient in health the “Status Syndrome”. So what exactly is the cause of this gradient?

As described in *Status Syndrome*<sup>1</sup>, the gap in life expectancy between the top and bottom of the hierarchy is big. This can be illustrated in the USA by a ride on the Washington DC metro. Travel from the south east of downtown Washington to Montgomery County Maryland. For each mile travelled life expectancy rises about a year and a half. There is a 20-year gap between poor blacks at one end of the journey and rich whites at the other. Men in Japan have the longest life expectancy in the world at 77; men in Kazakhstan in the former Soviet Union are way down at 57. Within Washington and its environs, we see differences as big<sup>1</sup>.

## Poverty?

This headline figure of a gap of 20 years between the top and bottom of the hierarchy could be read as implying that the poor have poor health and the non-poor have reasonable health. They do, but this is to miss the challenging point, which is that health follows a gradient: the higher the social position, the better the health. Absolute poverty won't do as an explanation. This can be illustrated by three examples.

First is the one that has occupied me for the last 28 years: the Whitehall studies of British civil servants. The original Whitehall study showed that, among men aged 40–64, the higher the rank in the civil service, the lower the risk of death over successive periods of follow-up. None of these civil servants could be described as materially deprived in the sense of England during the 1930s or earlier, for example, yet position in the hierarchy was intimately related to health and life chances<sup>2,3,4</sup>.

Second come the Oscar winners. Redelmeier and Singh showed that actors who win an Academy award

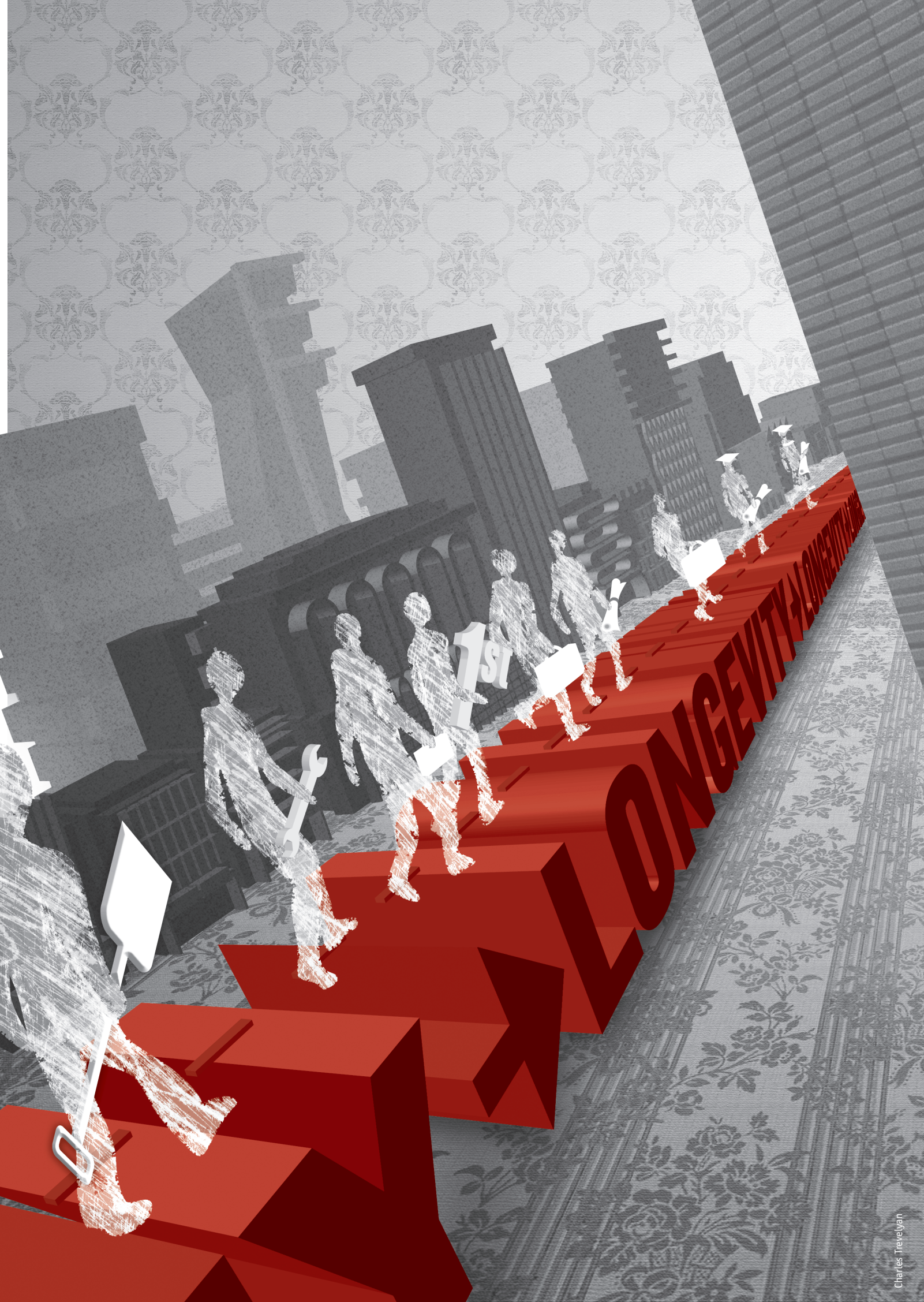
live an astonishing 4 years longer than other actors<sup>5</sup>. 4 years is enormous. Removing coronary heart disease—the number one cause of death, statistically—would add about 3.6 years to the nation's life expectancy. Can winning an Oscar be causal and responsible for such a profound improvement in health? Or is it the other way round: the longer an actor lives, the more chance he or she has of winning one eventually? Redelmeier and Singh deal with this by taking two comparison groups: actors who were nominated and did not win, and actors who were in the film in which the winner appeared. Adjusting for age, they found that the Oscar winners lived about 4 decades after winning their award; the also-rans about 4 years less. The longer life expectancy was unlikely to be the result of simply having more money. The control group made an average of 47.4 movies in their careers.

The idea that the boost in status that goes with winning an Oscar is responsible for the longer life may, at first blush, seem to be contradicted by the fact that screen writers who win an Oscar don't have longer life expectancy than other screen writers<sup>6</sup>. But does winning an Oscar increase a screen writer's status? Can you name a screen writer who won an Oscar?

The third example of the gradient is Erikson's study of the whole Swedish population, linking census data to mortality follow-up<sup>7</sup>. People with a PhD have a longer life expectancy than those with a Master's degree or professional qualification,

“Position in the hierarchy is intimately related to health and life chances”







who, in turn, have longer life expectancy than those with a Bachelor's degree and so on down the educational hierarchy. Income is a predictor of mortality, and it is not straightforward to separate the "effects" of income and occupational status because they are correlated. Adjusting for income may be to adjust for status, to some extent. Nevertheless, educational status does appear to predict mortality independent of income.

The gradient is relevant to the issue of explanation. The difference in health between top grade civil servants and those near the top cannot be attributed to differences in poverty, any more than can the better health of Swedish PhDs compared with graduates with a Master's. There is something else going on related to relative position in the hierarchy.

### Selection?

Behind each of these examples lies the question of selection. This can take two forms: health selection and social selection. Health selection implies that ill-health determines social position, not the other way round: good health leads to winning the Oscar. Social selection implies that characteristics that lead to your social position also lead to your health status—these characteristics could be nature or nurture: the characteristics of beauty and charisma that lead to Oscar-winning also lead to longer life.

This is hardly a new argument. Durkheim pioneered the study of social causation of illness (and inspired my discussion, in *Status Syndrome*, of the protective effects of social re-

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lations). In studying suicide he noted the apparent protective effect of marriage. He did, however, consider selection:

*Not everyone who wants to, gets married; one has little chance of founding a family successfully without certain qualities of health, fortune and morality. People without them ... are thus involuntarily relegated to the unmarried class which consequently includes the human dregs of the country. The sick, the incurable, the people of too little means or known weakness are found here. Hence, if this part of the population is so far inferior to the other, it naturally proves this inferiority by a higher mortality, a greater criminality, and finally by a stronger suicidal tendency<sup>8</sup>.*

With a touch of moderation to allow for political correctness, one could use a similar argument to apply to the worse health of those low in status, the unemployed, the poor, those without friends or social networks. This leads rapidly away from social causation to sickness begets sickness or, more generally, to endogeneity: one set of personal characteristics is related to another. Scientific positions then be-

come mingled with political ones. Those who want society to be a better place join the social causation camp and see the selectionists as conservatives who stand in the way of political and social progress.

Selection must exist. But, to take health selection first, there are a number of lines of evidence that suggest that it is not the major explanation of the social gradient in health. Birth cohort studies show that social position precedes the development of ill-health. Similarly, the strong link between education and subsequent mortality from diseases that have their onset after education has been completed makes health selection less likely. In the Whitehall II study we showed that job promotion led to better health, rather than the reverse.

In my experience, if you are an inveterate health selectionist none of this evidence will lead you to desert your position. It is always possible to speculate that vitality led to people earning PhDs or becoming permanent secretaries, and vitality led to lower risk of major illness. But then entrenched positions are not new to this debate. (Did not the revered R. A. Fisher argue strongly that the higher risk of lung cancer in smokers was due to the smokers, not the smokes?)

A particularly potent argument against health selection comes from comparing whole countries—making a virtue out of the ecological fallacy. I argue that the factors responsible for the social gradient in health within countries may be responsible for the deterioration in health in the countries of central and eastern Europe compared with those of western Europe. The economic and social crises of the countries of the former Soviet Union, I suggest, led to rapid deterioration in health. It was not deterioration in health that led the post-Soviet states into economic meltdown and social collapse.

Social selection is more difficult. The evidence is clear that, to some extent, inequalities in health in adulthood have their origins in early life. There are three ways this can operate: a latency effect, accumulation of disadvantage and a pathway effect. In the last, genes and environment from early life determine where someone ends up socially, but it is the conditions associated with where they end up that are more important for health, and in generating health inequalities. There is evidence to support all three of these models.

**If it is relative position that is important, what can we do?**

Is there not something deeply pessimistic at the heart of this enquiry into status and



A higher degree of health

health? I am arguing that it is not the absolute level of resources that is important for health in a rich country such as the UK. To see why I do not think it is money *per se*, contrast studies of individuals with studies of whole countries. In the USA, people with household income (in 1993 dollars) of \$17 000 have about twice the mortality risk of people with twice that income. Now compare countries. Greece has a gross national product, adjusting for purchasing power, of \$17 000, and the USA twice that at \$34 000. Yet Greece has longer life expectancy than the USA. I suggest that, within a country, income is a guide to social status. It is not the income itself that buys the better health.

### **“Your status is related to two fundamental human needs: to have control over your own life and to be a full social participant”**

But status is a relative concept. Your status is higher than mine; mine is higher than someone else's. All societies have hierarchies. There will always, therefore, be people of lower status. If lesser health chances follow from this lower status, are we not doomed always to have inequalities in health?

My answer is in three parts. First, health for everyone can improve. Life expectancy for today's people of lower social position is longer than for those of higher social position in the 1960s. There are no grounds for pessimism if everyone's health can improve, regardless of social position.

Second, the steepness of the social gradient in health is not uniform, either across countries, or within countries at different time periods. The gradient became steeper in England and Wales, for example, between the 1970s and 1990s. If it can increase, surely it can decrease, as it did in the period leading up to the 1970s.

That leads to my third response to resolve the issue of whether relative rankings are something we simply have to accept. In support, I appeal to economist Amartya Sen's notion of capabilities. Sen argues it is not so much what a person has that is important, but what he or she is able to do<sup>9</sup>. Sen suggests: “Relative deprivation in the space of incomes can yield absolute deprivation in the space of capabilities”. He uses “space” in a similar way to dimension.

Hierarchies are inevitable. The sum of relative positions will always be the same, but

what it means to have a particular rank in society will vary with our set of social arrangements. In a small band of hunter-gatherers the differences in material resources enjoyed by the top rank and the bottom rank person is small. By contrast, the gap between Bill Gates and the poorest American is simply enormous. The consequences for health of relative rank will therefore be contingent on the society in which those ranks exist.

### **What is it about relative position?**

The answer, I argue, is that your status is related to two fundamental human needs: to have control over your own life and to be a full social participant with all that implies about being a recognised member of society.

The argument takes two forms: the evidence in favour of these propositions, and the evidence against those who argue that something more prosaic must be going on: social differences in medical care, smoking, poor diet, lack of education that impedes ability to follow a healthy lifestyle. We hear so much about genes; why not grasp the political nettle and admit that low status people have worse health because of their genes? The reason to dismiss these explanations is not lack of political correctness, but fallibility. They do not explain the link between status and health.

In the Whitehall studies of British civil servants, smoking was more frequent among individuals the lower they sat in the social hierarchy. Yet we found that the social gradient in illness was as steep in non-smokers as it was in smokers. A combination of smoking, plasma cholesterol, blood pressure level, overweight and lack of physical activity accounted, statistically, for less than a third of the social gradient in coronary heart disease incidence and mortality.

In the USA, the lack of health insurance for upwards of 40 million people focuses attention on lack of medical care. The fact of the National Health Service in Britain does not guarantee that access to and quality of care are equal across social groups. But there is a social gradient in incidence of disease that is difficult to attribute to differential access to quality medical care.

Researchers, for good reason, consider education to be vital for health. And so it is. In poor countries where malnutrition and unsanitary conditions are rife, mothers with more education have healthier babies than those with less. But why should having a PhD in Sweden be better for your health than having a Master's?

In seeking explanations we do well to look at hierarchies not just in human communities but in non-human ones as well. Rhesus macaques who are low in status have more disease of the coronary arteries than those who are high<sup>10</sup>. None of the monkeys belongs to a fitness club, reads the health pages or has health insurance, but they too show the social gradient in health.

### **“The key to the status syndrome lies in the brain”**

No, the key to the status syndrome lies in the brain. It is stress arising from the inability to control our lives, to turn to others when we lose control or to participate fully in all that society has to offer. The myth that it is more stressful to be at the top of the pile than at the bottom should long ago have given way to facts. A way to stress an animal, of the human or non-human variety, is to remove control. This is true whether the animal or person is high status or low status, but low control is more common the lower down the pile you find yourself. Low grade chronic stress, acting through the brain, mobilises hormones—cortisol and adrenaline and noradrenaline—that lead to profound biological changes. Among these is likely to be the metabolic syndrome, linked to insulin resistance that increases risk of diabetes and heart disease.

These effects can be counteracted by the benefits of social support and participating fully in society. People who are supported and participate in social networks have better health than those who do not. Being part of a socially fractured community adds the insult of low social participation to the injury of low control over life circumstances.

### **What is to be done?**

The Acheson Inquiry—the Independent Inquiry into Inequalities in Health set up by the Labour Government in 1997—made 39 recommendations for reducing health inequalities<sup>11</sup>. I emphasise four areas: early child development and education, work environments, building healthy communities and supporting active social engagement of older people. Is there evidence from randomised controlled trials that these would work? Of course not. How could there be? I have tried suggesting to employers that we organise a trial of randomising workers to having control or no control over their work, large enough to have coronary heart disease as an endpoint. I





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was rapidly shown the door. Sure Start, an intervention aimed at early child development, is being evaluated, but not as a randomised controlled trial. The conclusions we reached on the Acheson Inquiry was that evidence was vital, but we did not require evidence from controlled intervention trials.

The implication of the status syndrome is that improving the health of the population, and reducing inequalities in health, requires action in a range of domains across the social and political spectrum.

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