

THE ADAM SMITH
LECTURE SERIES



Professor Sir Angus Deaton

THE ADAM SMITH
LECTURE SERIES

**TECHNOLOGY, INEQUALITY
AND SOCIAL ESTEEM**

26 May 2021

CAROLINE HOWITT: Hello and a very warm welcome to the Adam Smith Lecture Series here at Panmure House. I'm Caroline Howitt, Panmure's Programme Director. Today I am delighted to be welcoming a truly global digital audience to this event, which is one of the highlights of our annual programming. Panmure House is the final remaining home of Adam Smith, the father of modern economics. It was in this 17th-century Edinburgh townhouse that Smith completed the final editions of his two most significant works: *The Theory of Moral Sentiments* and *The Wealth of Nations*. Smith lived at the House between 1778 and 1790, and across this 12-year period he was a central figure in a group of celebrated Scottish Enlightenment thinkers who used to convene to share their ideas. Here, in Smith's dining room, they would meet to debate and define the most pressing issues of their time. Today, Panmure House serves this crucial purpose once again, but for a 21st-century society. Rescued and restored by Edinburgh Business School and Heriot-Watt University, Adam Smith's former home is now a centre for new Enlightenment thinking. Our programmes serve to bring people together for two key purposes: Firstly, to celebrate the work of Adam Smith and its ongoing relevance to society. And secondly, to engage in debate and research about the great social and economic questions of our own time. This of course provides us with a range of key areas, from our Hutton Series on Climate Change, to our Smith Schools Series, all the way through to the annual Panmure House Prize for research into long-term investment and innovation. Please do visit our website - panmurehouse.org - for full details of all our programmes and the ways in which you can get involved.

Today's programme, the Adam Smith Lecture Series, brings the world's greatest economic thinkers, practitioners and Nobel Laureates back to the birthplace of modern economics, the house in which Smith completed the final edition of *The Wealth of Nations*. Smith wrote at a time of enormous social and economic change, at the very dawn of the first industrial revolution. Today, as we move into the fourth industrial revolution, the world and its markets are increasingly complex, meaning that enlightened thinking, reasoned debate, and visionary leadership are needed now every bit as much as they were in Smith's time. The Adam Smith Lectures are designed to meet this need, and we are tremendously privileged today to welcome Nobel Laureate Professor Sir Angus Deaton to continue in that great tradition of Smith and his contemporaries. Before I introduce Sir Angus properly, a few words of housekeeping. Today's session will run for 90 minutes. You can submit questions throughout by using the Q&A function at the bottom of your screens. When doing so, please state your name, along with your occupation and organisation. Sir Angus will speak for 40 minutes, after which he will be joined by Professor Heather McGregor, Dean of Edinburgh Business School here, at Heriot-Watt University. Professor McGregor will chair the second half of the session, posing your questions to Sir Angus. We invite you to engage with us, during today's lecture and afterwards, across social media where we are @AdamSmithHouse, using the hashtags, #AdamSmithLecture and #AdamSmithHouse.

And now, it is my great pleasure to introduce Professor Sir Angus Deaton. Sir Angus is Senior Scholar and Professor Emeritus at Princeton University and Presidential Professor of Economics at the University of Southern California. He is the author of *The Great Escape: health, wealth, and the origins of inequality* and, with Anne Case, *Deaths of*

despair and the future of capitalism. His interests span domestic and international issues and include health, happiness, development, poverty, inequality, and how to best collect and interpret evidence for policy. He is a member of the National Academy of Sciences and the American Philosophical Society, a Fellow of the British Academy, and an Honorary Fellow of the Royal Society of Edinburgh. He is a past President of the American Economic Association. His BA, MA, and PhD are from Cambridge University, and he holds several honorary doctorates from universities in Europe and the U.S. In 2015, he received the Sverige's Riksbank Prize in Economic Sciences in Memory of Alfred Nobel for his analysis of consumption, poverty, and welfare. He was born here in Edinburgh, Scotland, and was made a Knight Bachelor in the Queen's Birthday Honours List in 2016. We are honoured to have him not only as Patron of the Panmure House Prize, but as our Adam Smith Lecturer today. Sir Angus joins us now from a virtual rendering of Adam Smith's Reading Room. Many thanks to our colleagues at Princeton University who have helped us create the illusion that he is here in Panmure House. Sir Angus is speaking to us today on Technology, Inequality, and Social Esteem .

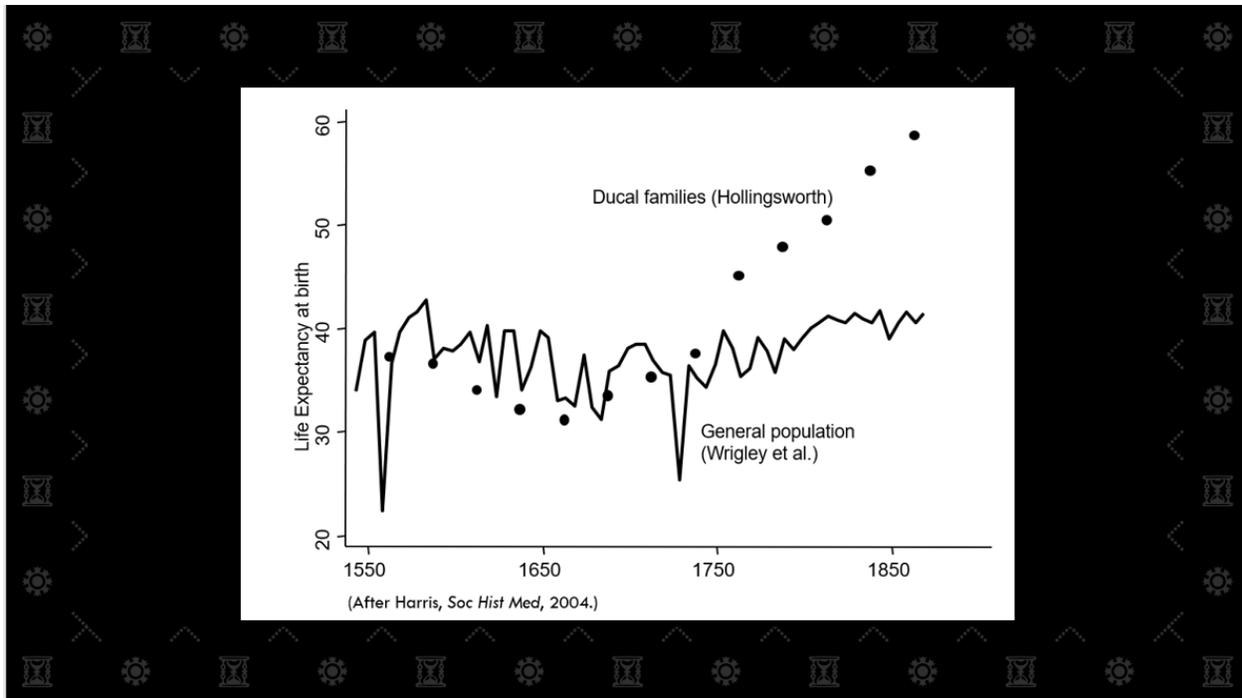
SIR ANGUS: I'm so pleased to be giving this Adam Smith Lecture today. I would say that I'd be pleased to be here, but I wish I really were here or at least there instead of doing this in the studio in Princeton. I hope we can make it up sometime not too far from now.

I wanted to start with a little personal history, try not to do too much of this, but I was born in Edinburgh in 1945 and I left the city in 1964. Heriot-Watt was a very familiar name to me. I heard about it on a daily basis, many complaints actually, as you'll see. My father was invalided out of the army in 1942 and he got a job in Edinburgh and was determined to do better than he'd done so far. And he went to the Heriot-Watt night school after work, and there he qualified as a civil engineer and having started out with really not even a high school diploma as we would call it here. The complaints I heard were of course that the work was really difficult and my father who had not studied for many years found it very hard to get through the degrees. But to get through the degree he did I think he had to take several exams multiple times. But in contrast to Heriot-Watt, I never heard about, or even knew of the existence of Adam Smith. Of course, my father who was an Englishman, didn't know anything about Adam Smith, but in school in Scotland, we heard a lot about Scotland's distinguished contributions to the world, but Adam Smith's name never came up. When I was inducted into the Royal Society of Edinburgh some years ago, we got a very nice tour of the building, with some of its history, and Adam Smith was mentioned, but only mentioned, and not as a scholar, as someone to, one of the greatest members of the society but as someone who helped the society get its royal charter, a facilitator, not really a scholar. And it's strange because Edinburgh has always been proud of its medics, its physicists, its scientists, and its other scholars, not to mention its writers, but Adam Smith, at least until recently, was little known. David Hume did somewhat better, but only somewhat better, I don't think he was mentioned at all, at the Royal Society in Edinburgh. At that time Panmure House as you know was a ruin, and Smith's grave, although it was there, and there were little white stones which led up to it, it was certainly not a well-known landmark, even though it was right on the tourist route in the centre of Edinburgh. So, I think we have an enormous amount to celebrate in the restoration of Panmure House, but also of the restoration of Adam Smith to something like his proper role in Edinburgh, in Scottish

and Edinburgh History, and especially intellectual History.

What I'm going to talk about today is somewhat less positive. I believe we're at a very dangerous moment in History. As we now all know, and are aware of we're emerging from the worst pandemic in a century, into a world that was vastly unequal even before disaster struck. And a world in which the pandemic has widened gaps and created new gaps. This was a world when even before the pandemic came, many people were and remain doubtful of capitalism. Many are actually rejecting it, some go even further and reject democracy. And those people are not just on the left, but also on the right, and for them, as I will talk about in this lecture, democratic capitalism really has not been working for a long time for them. And I will explain that and show you some data. Yet, this is something that we really all should be desperately worried about? Because democratic capitalism, putting those two things together, as many of us have experienced in our lives has unlimited potential for progress, and for human flourishing, in both health and prosperity. Human flourishing is not just health and not just prosperity and not just the two, but it's nevertheless those are the two important aspects of human flourishing that I'm going to be talking about today. So, looking back, Adam Smith wrote at the very beginning of the Industrial Revolution. He was a key figure in the enlightenment, the application of reason to human improvement and the development of useful knowledge. Over the subsequent 250 years, enlightenment ideas have led to unparalleled progress in human flourishing, and I would argue that that's perhaps the most important single force that's, that in the state, the really positive state that we're in today compared with 250 years ago.

Certainly, in material prosperity and also in health and longevity. But at the time in the mid-18th century it wasn't so obvious that the enlightenment, or indeed the ideas that it produced, were going to accomplish these amazing things in either health or material well-being. Let me start with a slide about health, and I'm going to talk about the early 19th century. A time of great technical progress where the industrial revolution was just getting underway. And this is the period that we now see as the beginning of our modern prosperity. Here's a picture out of my book "The Great Escape", which I drew inspired by a paper by Harris in the "Social History of Medicine", which is referenced there. This shows from Wrigley and his colleagues life expectancy at birth in England from before 1550 through to after 1850.



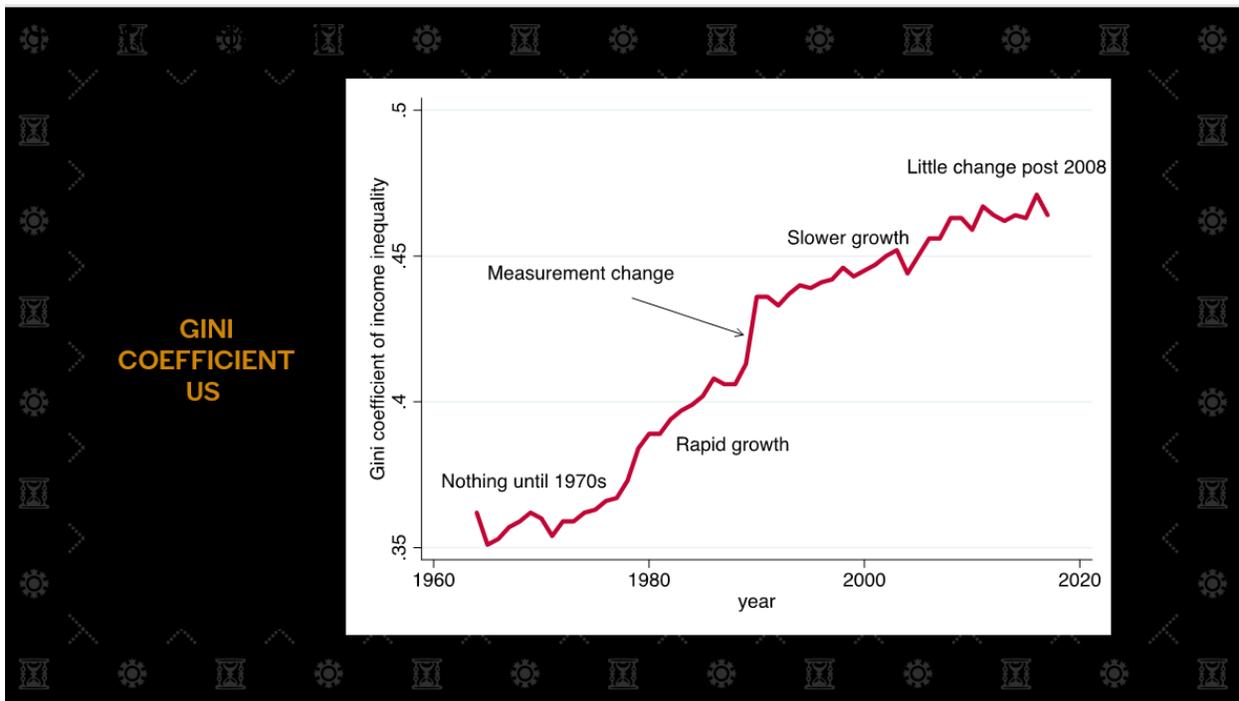
And just for a moment look at the solid line and what you can see here is two things: one is there's enormous variability. It goes up and down like crazy and that's of course because of plagues and things that came along and killed large numbers of people, caused life expectancy to go down temporally. Many more pandemics in those days, than there are even today. But there's also very little trend so, it's true you could see a trend in this I guess if you split it up in the right places, and you see it was going down for a while and it's going up, but basically there's not that much difference over that 300 year period in the life expectancy of the general population. So if this is an indicator of progress, and many people would argue that life expectancy is a very good indicator of progress, then there really wasn't much progress for the common people over this 300 year period. The dots come from Hollingsworth's calculation of the life expectancy for ducal families, the very rich people who had estates and all the rest of it, and were about as far from the common people as you can get. And there's a real break here which is up until around the time when Adam Smith was writing *The Wealth of Nations*. The dots are pretty close, have the same general trend as the solid line. But after 1750, they begin to break away, and you get this acceleration in their life expectancy up to something like 60 by 1850, leaving the ordinary population behind. So, what does this tell us, it tells us for one thing that it's not always been true that the rich and better connected and the aristocracy lived longer than the general population. It also tells us that something began to happen around 1750, and a lot of that was inoculation for smallpox, that Jenner had invented and which started at the top, coming first to these wealthy families. The king gave it to his, one of his children, it spread through the aristocracy, and there are a bunch of other things which I could talk about but I don't want to talk about today. And they did very little for the common people at first but then they began to improve after that. And this general application of good ideas spreading through the population begins to pick up the beginning of the rise in modern life expectancy after 1850. So that bottom curve if we were to draw it through to today, shows a remarkable increase.

What about material prosperity? Well, until 1850 from 1800, wages too were stagnant and even though the industrial revolution was going on like crazy, innovation and technological change, all the steam, and all the coal, and everything else, workers benefited very little, and contemporary writers indeed in the first half of the 19th century thought that this wage stagnation was here to stay. That you might get this technical improvement, you might get these firms that were blossoming like never before, all of these factories' people making a lot of money, the capital is making a lot of money, but the wages were not going anywhere. The wage share fell and in fact what really was happening here or what many historians would argue is that the handloom weavers, who were the manufacturers of cloth at home in villages, up until the industrial revolution, basically their wages fell and fell and fell until by about 1850 or afterwards, there really weren't any of them left. At the same time the hereditary landowners, not the capitalists, the hereditary landowners, were rich and controlled parliament. The corn laws preserved aristocratic incomes and privilege by keeping the price of food high. In modern terms we call that rent-seeking by rich landowners, who wrote the laws in their own interest. One of my favourite phrases from Adam Smith, he called these laws maybe said to be written in blood, like the Laws of Draco. For those of you don't know Draco, Draco was the Greek law giver who had a penal code in which even the minor offences were punished by death. And it's the source of the word draconian. And Adam Smith writing about rent seeking, about people getting laws passed in their own interests said those were the laws of Draco, said to be written in blood. There are many parallels today, that I will come to later in this lecture. At the same time, mortality rates were rising as people moved into dangerous cities. Nutrition was getting worse, some historians like to write about the stockpot being replaced by the teapot, and the wholesome calories and nutrition from the stockpot, were replaced by sweet tea and sugar. Their almost complete sanitation at the beginning in the early 19th century, or clean water, I think there's one account that Manchester had one public toilet, in the early 19th century. The other thing that happened was church going and social capital declined as the structure of country life was destroyed. The churches were in the countryside. Manchester didn't have many more churches than it did toilets and so, there was a lack of attention to spiritual as well as to sanitary needs of ordinary people. Yet this pessimism which was widely held ultimately proved incorrect.

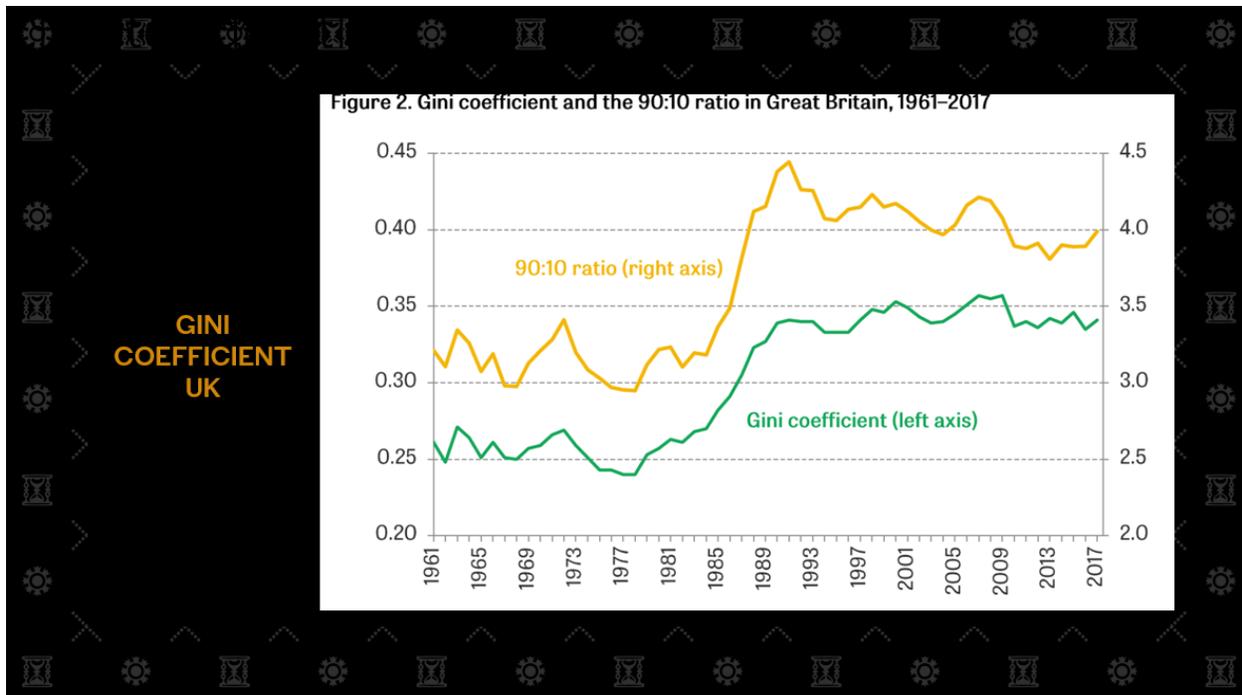
Wages started rising after about 1850. My friend Bob Allen, the economic historian says wages started rising on the day that Marx published *Das Kapital*. Of course he doesn't attribute that to Marx, but it was just basically we got to the point where there were no more handloom weavers left and their wages had gone down to the point where there was nothing more to happen, no more fall to come. But it's not just wages. Politics and participation improved too, and by the end of the century the Corn Laws were gone, and landed aristocrats were in deep trouble, especially when cheap corn swept in from the prairie in the new world. The franchise was extended through a series of reform acts, so that 1 in 10 men in 1800 got to vote. By 1900 it was 1 in 2, though women had to wait until after the First World War in 1918. There was no revolution in this period, but it was sometimes close, there was no war, but these institutions slowly changed to favour the disfavoured so, I'm not telling you all this because I'm a historian, which I'm not, but I want to draw parallel with some of the things that are happening today and this is a

hopeful parallel, that at the time when things looked really bad around 1850, it was the time when things were about to get a lot better.

The life expectancy was going to start picking up, wages were going to pick up and political rights with them. So, why is inequality a problem today? I mean, many people would argue that it's not for instance, but I'm going to argue that it is but perhaps not in the way that people think. Now when economists talk about inequality, they usually think of income and of wealth and how it's distributed across people and they wheel out their best friend, the Gini coefficient, which is a measure of inequality. It's one when one person is everything and zero when everybody is the same, so zero is perfect equality, and one is if you like perfect, if that's the right word, inequality. So what's been happening to Gini's up to the pandemic?



Let me start with the U.S. and here's from the mid 60s up until about 2018 I think I got here. And basically nothing much happened in the 1970s. There was a very rapid growth in inequality from the late 70s through to about 1990, there's a very rapid growth which as I've pointed out there is actually a measurement change, it's not actually something that's really happening. But the way the data were measured changed and I put that there because it's important, and measuring inequality is not a trivial thing, and it's very easy to make mistakes, by ignoring the way things are measured. In the 90s, and through to the 2000s, there were slower growth but there's been very little change post 2008. So, it's not clear looking at this why it's only now that people are really getting upset about inequality. And I believe they are and they're right, but I'll come to that.



Here's a graph from Britain that comes from the IFS, I'm sorry about it saying figure 2 on there. The top line is the 90 to 10 ratio, the Gini coefficient is in green, and you can see that after the departure of Margaret Thatcher, there was really very little further increase in inequality by these measures. I think this can be challenged if you look at the very top, there's been more of an increase, but Britain looks a lot like what's happened and well not a lot like but there's been no major recent increase in inequality that would cause people to be outraged about the rich.

WEALTH IS MORE UNEQUAL THAN INCOME

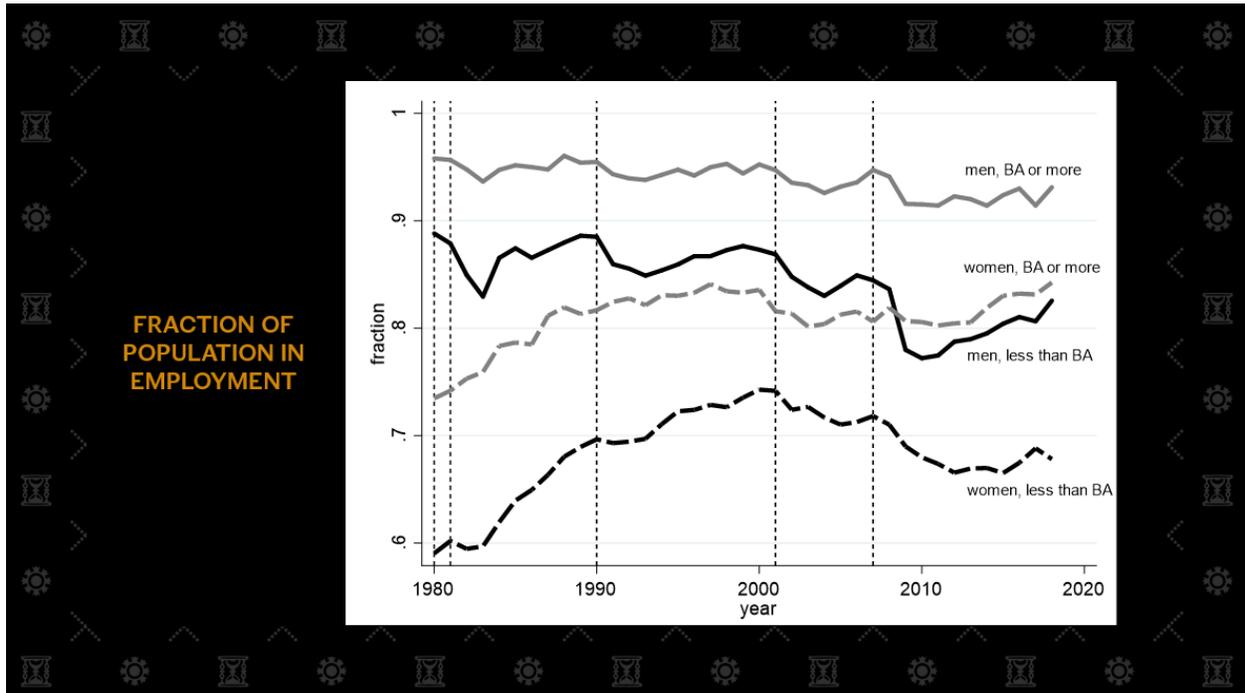
- The richest Americans, before COVID-19:
 - Bezos (\$114bn), Gates (\$106bn), Buffett (\$81bn), Zuckerberg (\$70bn), Ellison (\$65bn), Page (\$56bn), Brin (\$56bn), Bloomberg (\$53bn), Ballmer (\$52bn), Walton (\$52bn)
 - More Waltons, Koch, MacKenzie Scott (Bezos), Adelson
 - Britain is a bit different: Not HMQ
 - Duke of Westminster is no 10.
 - Creators, retail and chemicals, but wealth from breakup of Soviet Union, inheritance
- US billionaires are **makers**, people whose innovations have changed our lives: Google, Facebook, Microsoft, Amazon, Walmart, Cisco

So, wealth is much more unequal than income, because differences in income persist and accumulate over time and it is useful in this context to think about the richest Americans and people in Europe too. The richest Americans before COVID-19, there's Jeff Bezos, that's 114 billion dollars in wealth, Bill Gates, Warren Buffett, Mark Zuckerberg, Ellison, Larry Page, Sergey Brin, Bloomberg, Ballmer, and Walton. Then Walton is Walmart, if you look below that there are more Walton's than I used to say the Koch brothers, there's only one left, Koch. Then Mackenzie Scott used to be Mackenzie Bezos and then the late Adelson. All of these are not much further below these very large numbers. When I first looked at this I thought Britain would be very different if only because I thought, well, there's the Queen, you know, she's going to be the richest person in Britain. That's not true at all, and obviously there are valuation problems about Holyrood House, Balmoral all the rest of it. But if you take this list the Duke of Westminster is number 10. Many of these people created stuff in retail and chemicals, but the wealth from the breakup of the Soviet Union has been important. There are various people who inherited their wealth there, they are Russian oligarchs who live in Britain and so on. So, one distinction that I think is really important, that I want to push a bit, is that American billionaires are largely makers, in the sense that the innovations that they were associated with, have changed our lives. I mean Google, Facebook, Microsoft, Amazon, Walmart, Cisco and so on. And if you look at that list of people these are not people who inherited wealth or store wealth, they made stuff, so I like to use the word makers for those people, in contrast with takers, not a distinction that's original with me. Is any of this a problem? Well, yes, but not quite why. For some people it is one quote that goes around is that every billionaire is a policy failure. I would argue that's not a problem, especially not in the U.S. where these extreme levels of wealth come with large social contributions, if you like, the private incentives and social incentives seem reasonably well aligned. Creative destruction - which is what Schumpeter - the term Schumpeter invented, and that innovation makes us all better off not just the people who get rich and we want incentives for that to continue. Of course it's more of a problem with inheritance or criminal oligarchs, takers not makers.

You might say, well that's just a few billionaires, what about everybody else? Well, at least in America, there are a very large number of middle class prosperous people, with substantial and growing wealth. In America, the switch from defined benefit contribution, defined benefit pensions, to defined contribution pensions, as excess has not exacerbated this, has enabled this. These are invested in the market, and the market has done very well for those people especially during the pandemic. I want you to note though that in 2016, which is the latest number I could come up with, about three-quarters of all of American household wealth is owned by college graduates. And that's a big distinction, that's the inequality that I really want to focus on which is, in the U.S. at least, which is college graduates and non-graduates. If there's a problem, it's not among those with wealth, but those without wealth. So let me spend a bit of time in the U.S., and then I'm going to come back to Britain. So, this division in America, it takes four years to go to get a university degree, college degree, and that distinction between people who have a four-year college degree and those who do not, has become a hugely important and growing division. Only a third of the population in the US has a four-year degree. And that's very important to keep in mind. This is not just a tiny tale of people who are not privileged this way, it's the majority of the population who do not have a

four-year degree.

So here's a picture from my recent book with Anne Case, *Deaths of despair and the future of capitalism*, and this looks at the important aspect of the labour market, what you really want in a functioning democratic capitalist society, is people engaged with the labour market.



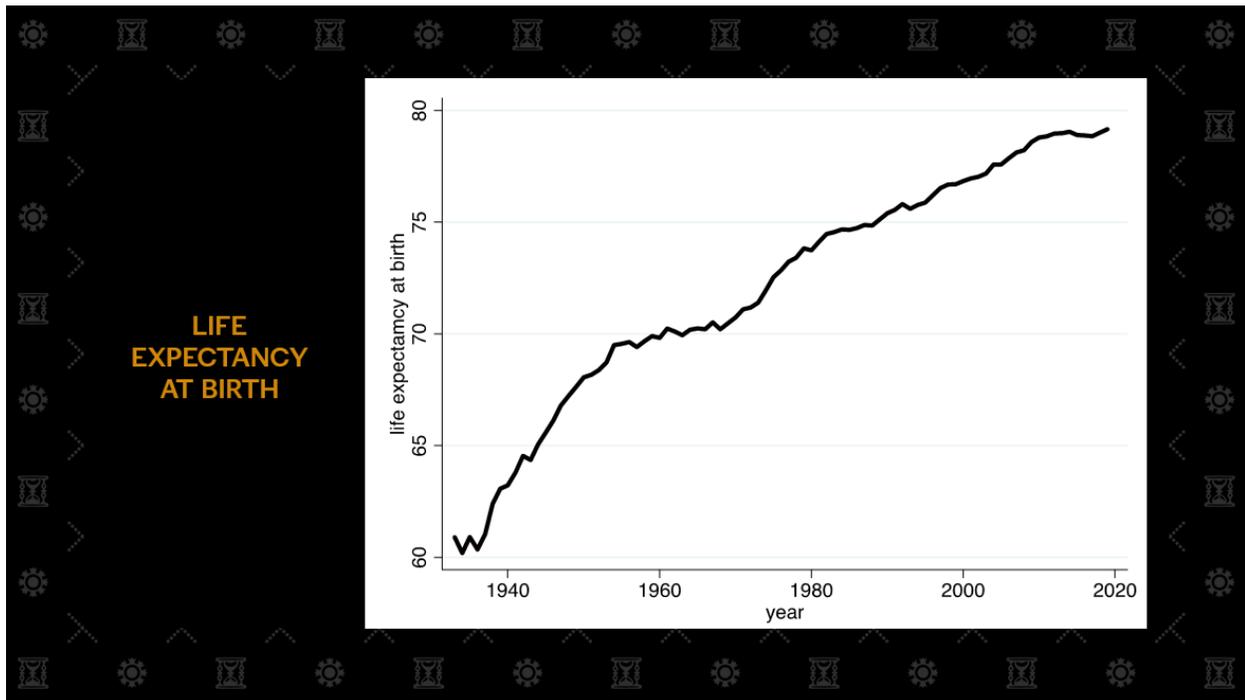
And we've separated out here people with a BA, people without a BA, and men and women whose behaviour here is somewhat different. Let's deal with the women first, because there, as we know in the US, as in many other countries women have been less likely to be joining the labour force. The women are the broken lines here, and you can see that for women with less than a BA, this process peaked in about 2000. And for women with a BA, it peaked a little earlier than that, probably in the mid 90's.

Let's look at men though, men have always had higher labour force participation this is the fraction of the population that's actually in work, and the people who are not in work of course are, some of them are unemployed, but some of them are not looking for work, or they're retired, or they're in school, this is the adult population now. So, what you can see here, so you take the top line, there's been some decline from about 95% to maybe 93% for men with a BA. But the scary one is the one for men with less than a BA where we've lost almost 10 percentage points from the upper 90's down to before the pandemic. Women without a BA, after 2000, after the peak, look a lot like men without a BA. So, the phenomenon we got here, which is a very bad indicator, is that a declining proportion of men and women without a four-year college degree are actually attached to the labour force at all.

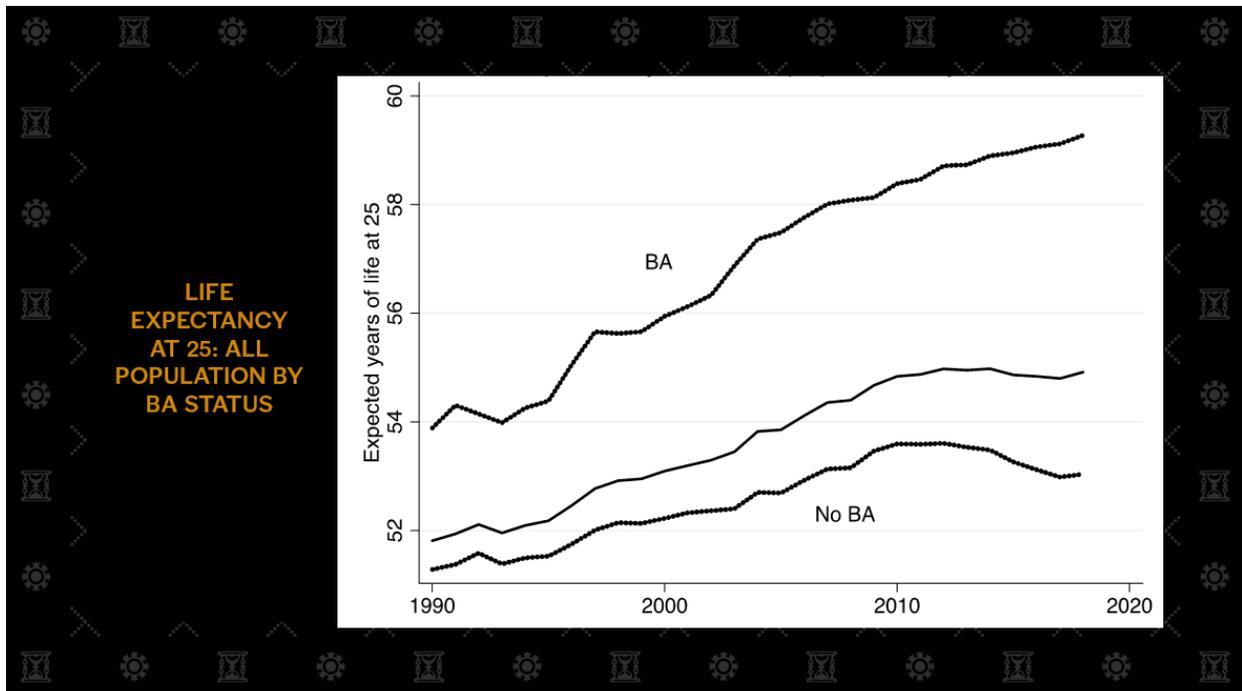


Now let me show you wages, which is what you get by being in the labour force, and these again median real wages for men without a BA, and this is even more horrific which is that you look at the picture on the left, and you can see that median wages, 23 Dollars an hour in 2019 Dollars, down to something like 19 dollars an hour just before the pandemic. Of course this is not a steady decline in boom times, like around 2000, and then you get this slow decline and then it picks up again and of course there was great trumpeting before the pandemic of how well the Trump administration was doing with jobs and wages, have been indeed increasing up until 2019, though there's no period in that supposed great period where wages were as high as they were at any day during the 1980s. Here's the employment population ratio which we've already seen and you see again, and once more, it has this sawtooth effect that it comes up in the booms which are the red lines that you might be able to see and then declines afterwards. The main point of course, is that when each new peak is lower than the previous peak, so the employment population ratio is trending down, even if it has this strong cyclical behaviour and with it are wages, keep that picture in mind. So, why is participation going down? Now, the arguments on the right, Charles Murray is one of the people who's written about this, argue that these people are essentially idlers, who increasingly do not want to work, so that there's been a loss of virtue, people used to be industrious, they were very interested in just working for its own sake. And now people really don't want to work and they're sponging off benefits, and all the rest of it. But if that were true, wages ought to be going up given the shortage of willing workers so, if a large strength of the population deciding on more work anymore, and there's still jobs there then wages will rise to try and bring them back, and that's the opposite of what happened, it's like economics 101, is it supply, is it demand, in this case what it's telling us is that it's the demand that's a problem for these jobs, that the jobs are going away and there's been a big decline in the availability especially good jobs for less educated people because of automation and globalisation, and particularly automation which is probably more

important than globalisation. This is consistent with trend wages falling which is what we see, and technology as in 18th century Britain is creating these difficulties is taking away good jobs that people had, and replacing them with worse jobs or bad jobs or no jobs at all. In this context, unemployment is not a good thing to look at because it misses so many people who've given up trying to find a job, among those people there's now real distress, what Anne Case and I call despair among less educated Americans.



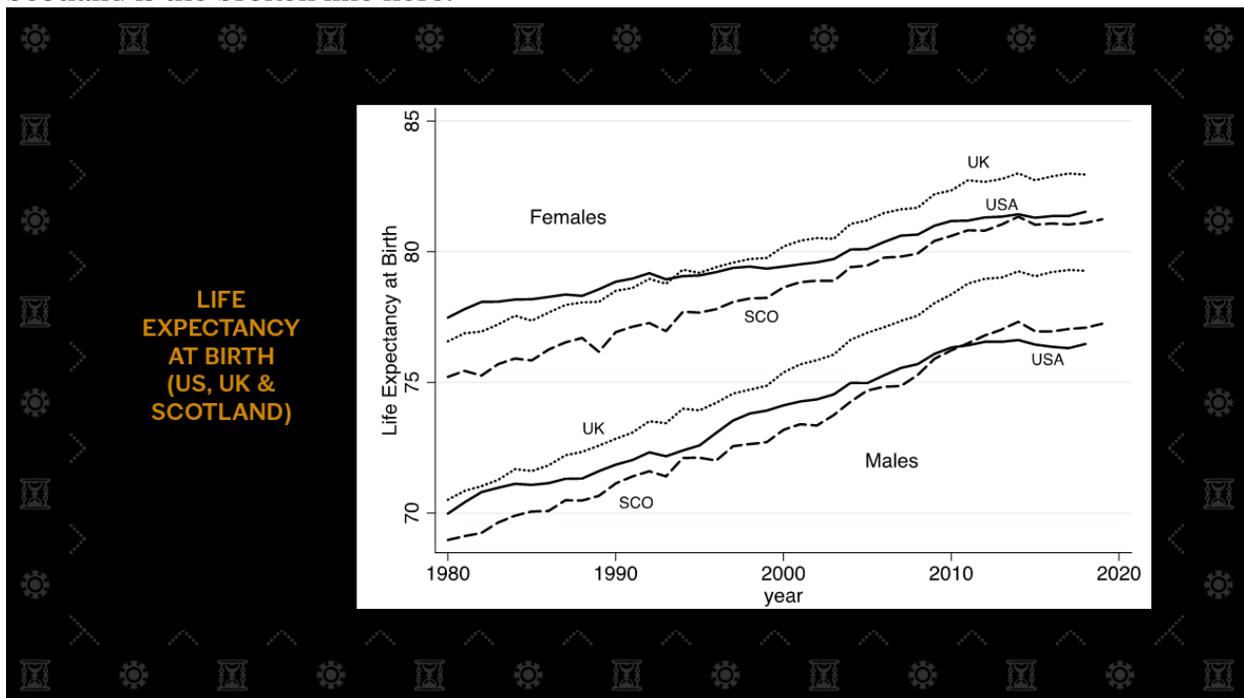
Let me turn to the health consequences of this here's a picture of life expectancy of birth from 33, when we started collecting full data and I want you to focus here at the very top of this picture, where you can see in the last few years here, we've got a situation in which life expectancy actually fell for three years a little turn up after that, and this as I said earlier is a good indication that something has gone wrong.



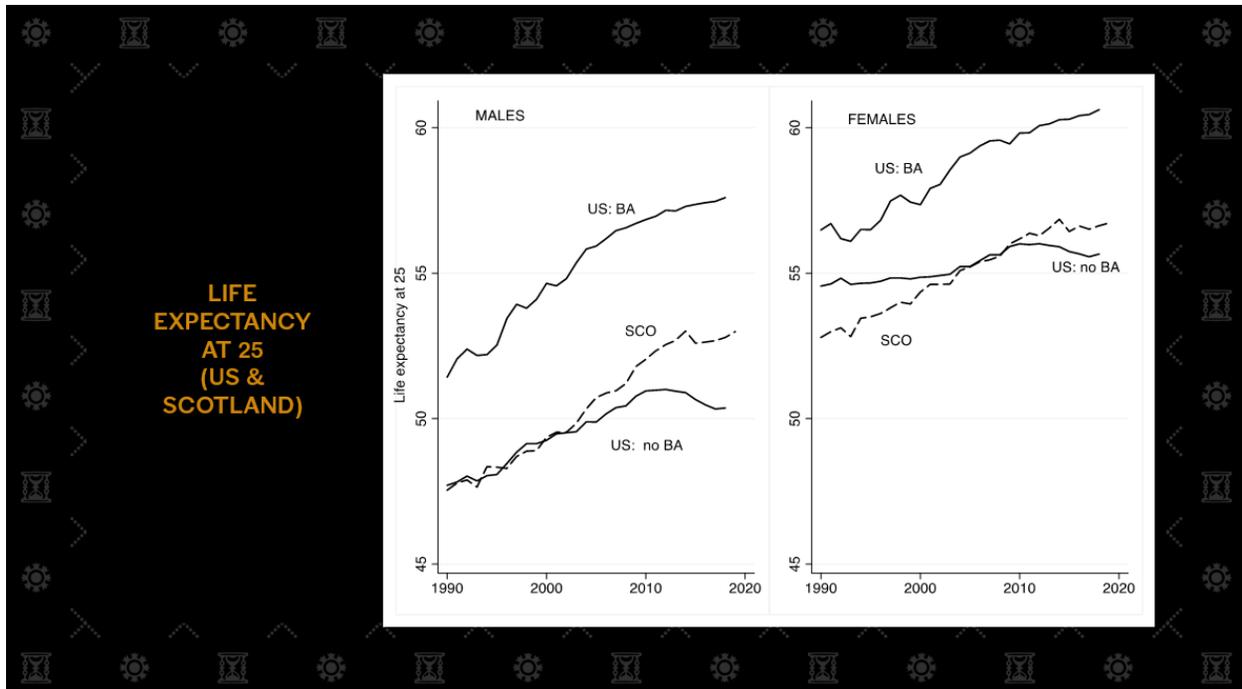
Well, that's not so impressive, but when you look at this, this is life expectancy at 25, how many more years you can expect to live at 25, and this splits it up by people who have this magic four-year BA and people who don't have a BA, and everybody together is in the middle here, and you can see the, for in the middle graph the stalling of life expectancy is a little turnout but what you can see here which is just horrendous is this is all happening to people who do not have the BA degree, whose life expectancy at 25 has been falling since 2010, while the BA goes on rising perhaps not at the same rate but they're still getting longer lives. Notice this has to be calculated at 25, because at birth you've no idea when or whether people are going to get a BA or not, so at 25 most people have settled their, got their education they're going to get. So, it's those without the BA who are experiencing falling life expectancy in shorter waves, in shorter lives, they've been the targets of pharma company generated addiction and death through immensely profitable and immensely destructive opioids who've seen falling wages for half a century, who have a job market that no longer works for them, it doesn't deliver good jobs, while it is delivering good jobs for college-educated people, and multiple other social and personal dysfunctions, just let me mention a few here, rising level of pain, falling marriage rates, people have temporary cohabitation, often have kids, they don't get the benefits of family in middle age, they don't know or live with their kids, a lot of childbearing outside of marriage, and a lot of increasing detachment from religion, which is enormously important in the United States. So, as pain rose, painkillers, strong heavy-duty painkillers, started being widely used first legally, they were prescribed, and then likely when the doctors pulled back, people switching to illegal heroin into fentanyl. Fentanyl is this stuff that's about 100 times more powerful than heroin, and we got an epidemic of addiction and deaths, and the thing about this that's not always widely known it's almost entirely confined to those without a college degree. On top of this, many writers have written about status anxiety, especially among the white working class, there's been the loss of blue collar aristocrats, and the BA has become a prerequisite for

respectable work and social esteem. There's a widespread but disbelief that politics can help with this because a majority, I think about two-thirds of people without a BA, believe the system is rigged. They don't believe in democracy it's not working for them and that's indeed true, for the reasons that you've actually seen, the democratic party in the US, that used to represent working-class people, sort of like the labour party in Britain, has now become a new coalition of the educated and the minorities, leaving the white working class behind. I wanted just to say a few words about opioids, they've been used throughout history, opium, laudanum, morphine, heroine, and of course opium was exported by Britain to China from India, and when India tried to stop the drug dealers, largely Jardine and Matheson, Lin Zexu destroyed large amounts of opium in Canton, which precipitated the opium war. Jardine and Matheson lobbied the British government to repay them for their losses of heroin, and to punish the Chinese, they sent in the gunboats, which began a century of humiliation for China. Many of you who know anything about China will know that that century of humiliation is still prominent in Chinese minds. This is a lesson for today, in that it's incredibly hard to keep out drug dealers if they have money or political leverage, or if they have guns, and that is what happened in the 1840's in China. Jardine Matheson is today one of the 200 largest firms in the world. Jardine Matheson were both Scots. Jardine was a doctor from Edinburgh, and Matheson eventually became governor of the Bank of England, and bought the Isle of Lewis. In an uncanny modern parallel, the Queen gave honorary knighthoods to the Sackler brothers, who owned the pharma company Purdue Pharmaceutical, that led the U.S. drug epidemic. So, the question is whether any of this is relevant to Britain?

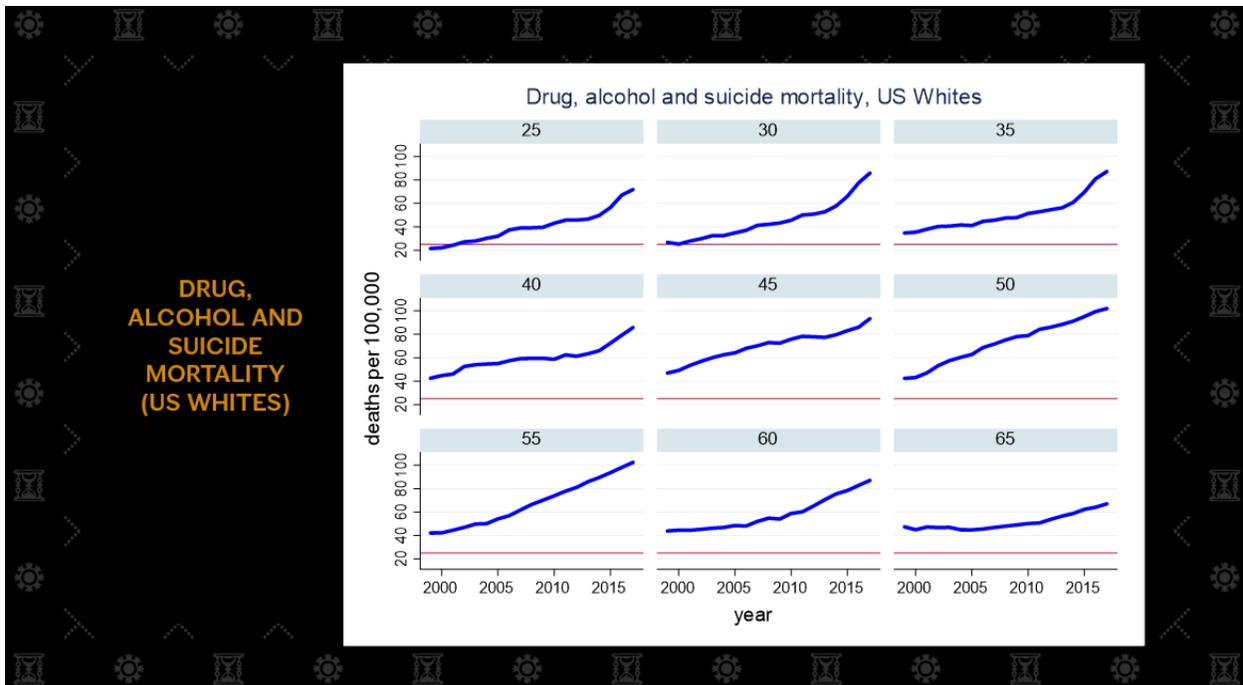
Is it a uniquely American horror or does it pose a risk everywhere? The answer I think is some of both. So here's some pictures, women the top three lines and bottom three lines, and this is life expectancy of birth, the U.K. is the dotted line, U.S.A. is the solid line, and Scotland is the broken line here.



And you can see the U.S.A. is not the only place that's been doing badly over the last few years, and since the 2010's, the UK has not seen much progress in life expectancy, nor has Scotland. It's probably more entertaining to look at this, which has men on the left-hand side, and women on the right-hand side.



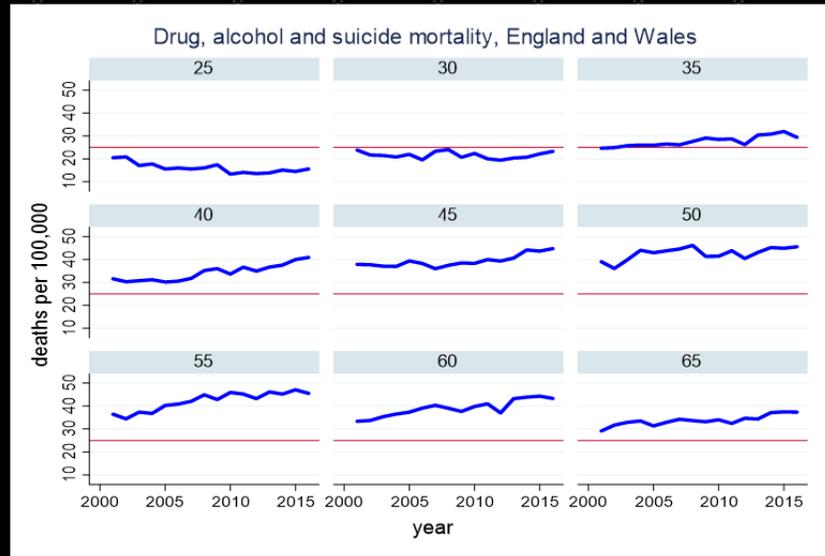
The dotted lines are the U.S. with the BA, and the U.S. without a BA, which you've already seen, but it's split here, between men and women, and here's Scotland which has always done worse than England has, in terms of life expectancy. And you can see that the U.S. people without a BA used to be very similar among men to Scottish men, but Scotland has now overtaken America, less educated Americans, even though it's not doing very well itself. And of course the deaths of despair which is what Anne and I have been writing about we call these, these are deaths from drugs, from alcohol, and suicide and these are for U.S. whites, these pictures show you age ranges 25 to 29, 30 to 34, so on up to 65.



And you can see, especially among the young and in middle age, these deaths have been rising, the vertical axis shows deaths per hundred thousand, the red lines just are flat lines, just to contrast, make you see that these things are rising. So this is the deaths of despair among U.S. whites.

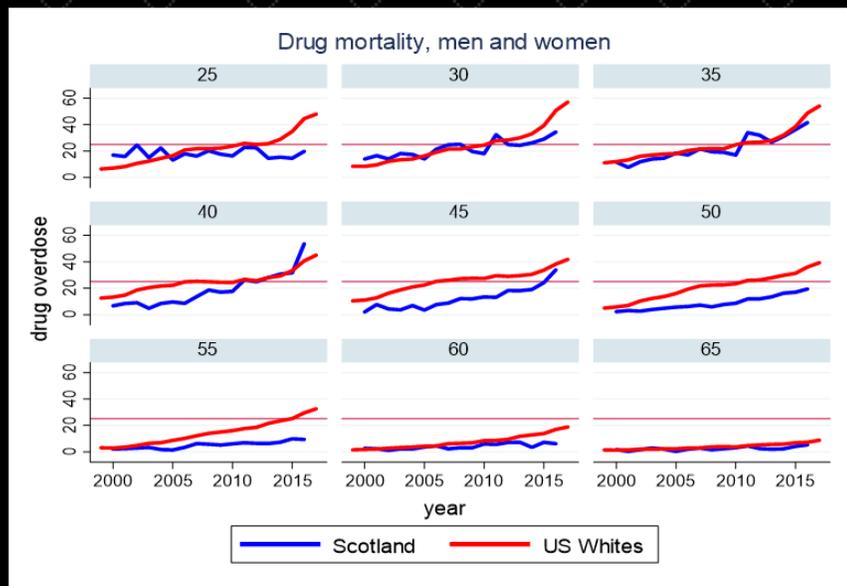
If you switch to England and Wales, is this happening in England and Wales? Well, for a long time, it's not so much among the young people, but you can see 40, 45, 50, 55, 60, and less among the elderly, it's becoming a real problem in England and Wales too.

**DRUG, ALCOHOL
AND SUICIDE
MORTALITY
(ENGLAND &
WALES)**



So, what about Scotland?

**DRUG
MORTALITY,
MEN AND
WOMEN
(SCOTLAND)**



Well, this will be no surprise, the red lines here are U.S. whites that you've already seen, the blue line is Scotland, and this is just drug mortality here and you can see that Scotland is a little better than the U.S. though there are some places where the blue lines are above the red lines one or two places, but Scotland unfortunately is almost the only country in the world right now that has a drug problem that's of similar size in terms of annual

deaths per hundred thousand, to what's going on in the U.S. So, in that sense it's not can it spread, but a similar phenomenon already has spread in Scotland, and is spreading rapidly in England. So here are some of the parallels and differences that, for one thing median wages in Britain, have not improved much since the great recession and that has, this prolonged stagnation of wages is not something that you can find in History, going back until the period I talked about in the 19th century. Of course the great recession was 2008 or so, so that's 12, 13 years, whereas in the U.S. the decline is 50 years long, but the failure of the labour market to serve less educated people is happening in Britain too and there's lots of literature as I'm sure you all know, on zero hours contracts, on gig work, on outsourcing, and precarity. One of the things that I would like to know, and that Anna and I have been working on with some folks at IFS, is to see how mortality is structured by education in Britain. Unfortunately, we don't know the answer to that. In the US, when someone dies there's quite a lot of information recorded on the death certificate, including the highest level of education attained, and race, and ethnicity. In Britain that is not recorded on the death certificates and so, we don't know. And we're hoping that ONS will merge the census into the death certificates, and we hope that will be soon and we'll learn a lot about this. But we suspect that a lot of this rising death toll in Britain is among people with less education, but there's contrary findings on that so far without big data, and we don't know. Some American pathologies, the opioid pharma companies, and the high costs of health care eating up the economy, are uniquely American, you don't have that in Scotland or England, but the challenges of maintaining communities in the face of changes in technology, is a problem in many countries, including Britain.

I want to end by saying a few words about meritocracy, and its discontents, I will connect this back to what you've just seen in a minute. Come back to my father, he started out life as a coal miner, he left school at 14, he was born in England in the Yorkshire coalfields, in the pandemic year of 1918, and Heriot-Watt as I've told you, allowed him to achieve better through learning and passing exams. He grabbed the meritocratic ladder and clawed his way up. Scottish schools, both public and private, gave me an opportunity to fulfil his dreams, as well as an absolutely world-class education, even today in my 70's, I think back on some of the fantastic things I learned, that I might not have learned, and that was true both of the state school I attended and the private school. So, in those days, as those of us who'd grown up pretty poor it seemed like a really good idea to let talent flourish, and of course it did because we had talent, but beyond that it seemed good for society to have people who knew what they were doing, doing the jobs that they knew how to do, not only to build bridges like my dad, or to fly airplanes or to become doctors and surgeons but even to run the country. In a now very famous book that was forgotten for many years, Michael Young, who invented the term meritocracy in 1958 saw troubles ahead. When I was a young don at Cambridge, I was very keen to promote the meritocracy and so were my colleagues, and we designed exams which we thought were perfectly meritocratic exams. And we didn't know who the people were taking their exams, their names were blinded to us, and we thought we'd set really good questions which tested people's ability to think. And then we discovered that the top 20 people, or I think 18 out of the top 20, all came from the same school, and that school had manipulated us by appointing one of us to teach their kids and knew exactly what sort of questions we would ask. And almost any gateway can be manipulated by the rich. Tony Judt, the historian who was at Cambridge at the same time I was, argued that perhaps

there could only be one generation of meritocrats who would then secure the world for their own children. Chinese historians say this cycle has gone around many times. Indeed it was the Chinese who invented meritocratic examinations, they turned into an aristocracy, they went back to meritocracy, and it's gone round and round, maybe that's what we're in. Michael Young argued that the meritocracy would form two groups, which he called the populists appropriate enough, and the hypocrisy which is a term I love. The hypocrisy stole the children of the populace through education, leaving towns cities and workers without their natural talent and natural leaders, and absorb them into the hypocrisy. So, successful meritocrats looked down on the unsuccessful. Michael Sandel's recent book is about this. Those of us who passed the exams tend to look at the people who didn't pass the exams and say well they had the same choice we did but they blew it. The unsuccessful who don't pass the exam sometimes suspect that the meritocrats might be right not a taller than, not a tall and comfortable feeling but they also believe in large numbers that the system is rigged against them, that they never had a chance. And this is a phrase that really comes from Michael Sandel that it has now become that a four-year college degree is a condition for respectable work and social esteem. Esteem is a word that's used hundreds of times by Adam Smith, especially in *The theory of moral sentiments*, and it's just incredibly important to people, and what we've done is we've devised a meritocratic system which is favouring a few and there are lots of good things to do with meritocracy, but disfavouring a large majority who are deprived of culture, work and esteem, and they take revenge when they can: Brexit, Donald Trump being the obvious examples. And this I, think is where we are now and this is the root of the epidemic of death and decline in the United States, which is spreading elsewhere and is a danger everywhere. I'm not going to tell you how to fix it because I don't know, but I think how to fix this is the greatest challenge ahead. So thank you very much indeed for listening and it's been a pleasure talking to you.

CAROLINE: Thank you Sir Angus. Sir Angus will now be joined by Professor Heather McGregor, who will pose your questions in response to what we have just heard. You can continue to submit questions as the discussion develops using the Q&A function at the bottom of your screens. Please remember when doing so to state your name, along with your occupation and organisation.

Professor Heather McGregor is the Executive Dean of Edinburgh Business School, at Heriot-Watt University. Between 1999 and 2016, she was otherwise known as Mrs Moneypenny in her long-running column for the Financial Times. She is now a regular columnist in the Sunday Times. She is a non-executive director on multiple boards, and received the Institute of Directors Scotland Chair's Award in 2020. An earlier career in investment banking preceded 17 years as an entrepreneur. In 2008, she established the Taylor Bennett Foundation, which supports the careers of minority ethnic graduates. In 2010 she became a founding member of the 30% Club, a global campaign led by Chairs and CEOs taking action to increase gender diversity at board and senior management levels. Heather is an alumna of the London Business School and the University of Hong Kong, and has an honorary degree from the University of East London. She was made Commander of the Order of the British Empire in 2015. Heather, over to you.

HEATHER: Thank you very much indeed Caroline, and I wanted to first of all say that of

all of the honours I've been privileged to receive in my life none of them are as great as being able to speak today to Sir Angus Deaton and to hear such a powerful personal testimony of his early life in Scotland, and the transformational opportunities of education. Sir Angus, as I am chairing the Q&A, I get to ask the first question. I do want to ask you about this issue of meritocracy, because it is very important to us at Heriot-Watt. We pride ourselves on opportunities for people who maybe otherwise wouldn't have had them. And right now actually, we're very busy in our bicentennial year, raising a four million pound fund to help people to go to university who wouldn't otherwise be able to go. Can I just ask you, you mentioned and I quote, that the educated are leaving the white working class behind. Now, is there a way of not leaving them behind and why are they leaving them behind and not doing something about it?

SIR ANGUS: Thank you very much Heather, it's a real pleasure to be here live as well as watching this rather eerie experience of myself talking three weeks ago. And it's a real privilege to give this lecture. So, let me say a few words about meritocracy, which I was perhaps harder on. I mean you know, those of us who are meritocrats really do believe, you know, it did things for us. And we think it did wonderful things for the world too, because there's a tremendous loss from not letting talent flourish. If you don't use the people who have the skills to do the things you need done, they're done much less well. And so preserving that opportunity as you talked about at Heriot-Watt, I think is an important thing, and it's not as if that job is done, there's still lots of kids, perhaps more girls than boys who still have not had the opportunity to develop their talents to the full. And that, I think, you know even if there's a downside to meritocracy, that's not a reason for giving up on that by any manner of means. We do however have to be careful to stop the successful meritocrats turning into an aristocracy. A hereditary aristocracy in which they keep places for themselves. And that's a task that will require enormous vigilance and sometimes would make you uncomfortable. The local issue I do worry about a lot, because I think part of what's happening in Britain and certainly what's happening here, is that places where the talent didn't have the opportunity to escape, stayed where they were and built social capital, for example. And they serve those areas, and when they're sucked out to go to university, you know what happens, you get these talented kids who didn't have the opportunity, you bring them to Heriot-Watt, they do very well and then they stay in Edinburgh, or they go to London or, and they don't go back to the communities in which they were. So one of the things we got to find some way of doing, is having more opportunities, we need... you're a country where there's a lot of concentration in one city, and we need more places where there's really thriving lives, so that more people can do that. We also have to find ways, and I think this is maybe less so there than here. You don't want to make having a college degree the only way to do social respect and esteem. There's got to be value in doing other things and those have to be respected. And I think that's something that social attitudes can help change, and by writing about it and by worrying about it and by not totally valorising a university education at the expense of everything else.

HEATHER:

Thank you very much. You mentioned there social capital which is actually what I teach, funny enough, and the importance of relationship building. You also mentioned a long list of things in your talk that you covered sort of in one fowl swoop about all the things that

are not going well, and then the right direction, including you know, marriage rates family, jobs, but also you mentioned detachment from organised religion which I'm not only interested in that but we have a question from the audience: is there any link between detachment from religion and, you know, you mentioned these weren't going well but is there actually a link between that and progression?

SIR ANGUS: I think there is and it's not just necessarily progression. I mean you don't join a church in order to get ahead, you join the church to associate with your fellow parishioners and to live a better life. And to the extent that that's being destroyed, which in the US where it's always been more important than it's been, you know, a place like Princeton, which is one of the richest communities in America, an enormous amount of social capital takes place in churches, in this time, in lots of different ways and in fact the central church, here in Scotland, was started by John Witherspoon who came from Dumfries Priests and you know taught Adam Smith and taught the teachings of Adam Smith and so on in Princeton. So, I don't know, and one of the things that's sad is, within the sort of social scientist with its leftist bent there's been much too little work on religion. I think that's picking up more recently but it's a sort of taboo subject somehow. And I have done some work, and I know some of that literature and there's really good evidence that people who go to church regularly, for whom religion is an important part of their life do better in many other ways. Their life does go better. But the story that Anne and I tell in our book is where these labour markets are not working for people anymore. So, you know when the jobs go the communities go, you know, the union halls go, the churches go, everything's sort of you know, because the labour market is providing this sort of fuel for the social life and I think economists have tended to neglect that more than they should have done, and you know in the end it's the destruction of those social pillars that's leading to deaths of despair not just losing a job, I mean lots of people lose jobs and they find other jobs and so on, but you know, if the labour market is not there feeding money and meaning into people's lives, than really bad things, including the decay of religion, and most young men in America, and most young men without a degree are institutions detached. They don't belong to churches but they don't belong to anything else either, and they make out their own weird religions and my colleague Kathy Eden has written very well about this. So, we're in a situation that's really not working for these people at all. But I have come to believe for sure, that for whatever reason people who belong to churches, for whom religion is really important, their lives go better on average. That could be just a social capital effect that the churches are places where you meet people. My friend Bob Putnam claims there's something there beyond that, it's not just having friends, the church itself, for the kind of friends it produces are different.

HEATHER: Thank you. The next question I have here is from Dame Frances Cairncross, who was previously our chair of court actually at Heriot-Watt and she is asking why you think it is that Scotland, which is a country where we do have a number of people with, in fact as you know we have a disproportionate number of universities actually, per head of population than anywhere else in the UK but we also have this very high level of drug deaths.

SIR ANGUS: So, you know, we have very educated population but we still have a, you know, a pretty horrific drug death record. I don't know but the drug, that's my guess, and

we don't know this for sure, are among less educated people so, you know so that would suggest that having the highest rate of education among many countries is not really going to save you from that, and that's the sort of thing that Sandel and Michael Young have written about which is, you know if you have a successful class that's getting educated, leaving people behind that can be particularly difficult for the people who are not part of that. And I think that's what's happened here and it's because you know, many of us grew up thinking you know: education is a panacea for all this, I grew up in Scotland where you taught me to believe that from day one. And so if everybody were educated, all these problems go away. I no longer believe that's true, I think people should get educated in different ways, and there must be multiple routes to self-esteem, social respect and to meaningful work. And I do think some of the continental countries maybe Germany, maybe Holland to some extent are rather better at doing that. There are multiple pathways to successful careers not all of which are academic careers.

HEATHER: Quite a number of people in the questions are asking about things that are changing, you know globally, that we have trends towards globalisation, we have trends towards decentralisation, and these are things that you know are affecting everybody in the whole world. Do you think that, will decentralised systems serve the poor better than centralised systems? So, the question is thinking about things like you know smart technology, and distributed ledgers. The things that we obviously know about blockchain and so on. Is all of that going to help, do you think to level up the playing field?

SIR ANGUS: Let me, I will answer that question, but I want to do a slightly different route. First of all, the anonymised work on "Deaths of despair", these people are not particularly poor. So, this is a poverty issue so much as an issue of esteem and respect. And so the question is, that these people are being left behind and not necessarily the poorest people. There's a lot of poor people being left behind too. Now, two things about the technology. As you said, or as the questioner said, this technology is happening everywhere, you know. So, Anne and I spent a lot of time when we found these deaths, which we sort of fell over, you know, we couldn't believe we were seeing it. We thought: we must have made a mistake. And now we started you know, casting history, writing the book, trying to get the story, but you know, if you talk about globalisation, and you talk about automation, it's everywhere right so, you know, there are robots in Germany as well as Scotland, and in the United States and you know, China is competing in all of those countries. So, those stories can't be the answer to why things are bad in Scotland with drugs, and why we have this much wider profile in the United States. And you know, that's unpleasant in one way but it's also hopeful, because what it says is there's something in the policy mix, or something in the way that countries are doing things, which can protect you against having this, right? So, one of the things we identify in the book is this cursed health care system we have in the United States, which is eating us alive, but that's obviously not what's happening in Britain even though health is expensive and is the problem elsewhere. But, I'm sorry, I've sort of lost my thread. It's not, oh I know what I wanted to say. So, let's come back to the beginning of the question which is about automation and all these new technologies and these wonderful things which have all these wonderful possibilities. Well, right now those things are critical because they're making jobs go away. And my friend Darren Acemoglu, who's been writing very eloquently about this, is arguing that that's a policy problem. We're actually subsidising

firms to replace people with robots. So, you know even if you believe in free markets, and labour markets do everything in this, which to some extent I'm always drawn to, we're actually making it worse, by a conscious policy which is destroying jobs for less educated people. So, let's stop subsidising robots and let's help create jobs in which robots actually assist less educated people, or work alongside less educated people to give them better and more meaningful jobs. So, that may be a tall order, but I don't think it's impossible finding them.

HEATHER: Thank you. We've had a couple of questions, who are asking about your views on whether this is what has driven if you like political agendas. The fact that we've seen a rise in extremism that we've seen over the last decade, that we've seen, you know very extreme versions of political parties emerging, not just in the United States, but in many different parts of the world. Has this, do you think, being this big influence on this trend to the, you know to polarise the two parts of the world?

SIR ANGUS: Yeah, I think absolutely the, I saw one of the questions earlier, and you know, one of the things that is true is that if you look at where people voted for Donald Trump, it's very highly correlated. We don't have a 4-years university degree and so those people who used to be represented by unions and by the Labour party in the UK and the Democrats here, are no longer represented by anyone. And they've drifted to the Republican Party, which is basically in the hands of big business and so, it's not representing those people in the way that unions represent people. And indeed, there's been a few amount of anti-union legislation. Most judges in America, in the Republican administration replaced by ex-corporate lawyers so that the legal system becomes very much more pro-corporation. One of the statistics I like to quote is, I drew a graph which drew a picture across the 50 states, of life expectancy, against the share of republican votes right, and it's an almost perfect negative correlation. So, it's like West Virginia almost entirely republicans, republican states like Hawaii, which is the other end of the life expecting spectrum and almost entirely democratic. That correlation used to be the other way around. It used to be that you go back to Jerry Ford's election in 1976, that was a situation in which the healthier states all voted republican, and now it's the specifics that all vote republicans. These people have really been left behind, and it's like the destruction of the red wall in Britain. I mean, that was the constituencies in which my dad grew up, and the idea that anyone would ever vote conservative you know, and think of, was just outrageous, and so there really is a sense that you know, they've been abandoned by the people who used to represent them.

HEATHER: The other questions we had here as well, and I've got so many questions, I'm not sure we're going to get to all of them, but the one question here, from Williamson is: if we look at lots of long-term success stories of the people that you listed, that are now and in the equivalent of the rich list in America and many of them were helped by their parents onto the first stage of the business ladder and, do you think there's a role then for, for instance, seed capital to help people move into self-employment you know, is there that kind of hand up in some way missing from what we're delivering to young people today?

SIR ANGUS: Well, again I think that's an interesting idea. I haven't thought about it very

hard. But one of the things that's certainly true here is that for most of the deprived people, their educational opportunities are appalling. I mean there are high schools in other cities in America that have never sent anyone to college so, you know, we got to do something about that. And I mean giving people seed money, and there's talks about that, about baby bonds or not baby bonds, but I forget what they're called. You give every baby a small sum of capital at birth, which could accumulate. So, I'm very much in favour of that. I mean, one of the things that's like that, that we haven't talked about, is we have this pandemic in which these people who I have listed have pretty much doubled their net worth and, also people like me, who have defined contribution pension plans, have made a huge amount in a way that didn't happen in Britain. I mean the S&P went up four-fold between 2011 and the eve of the pandemic. It then crashed a bit, but it's now 25% higher than it was at the beginning of pandemic which is not true in Britain either. And so there's been an enormous amount of wealth from the people who've been sheltered during the pandemic, from either its economic or its health consequences, and something like having a BA has protected you against COVID death, about as effectively as a vaccine.

HEATHER: We have a question from Adriana Soaita from the University of Glasgow who said she is a Romanian migrant, and she would like to hear your opinion on the policy of basic income of giving, which is actually an experiment that you know, we are doing in part of the UK actually soon. Is making sure that everybody has a minimum basic level of income.

SIR ANGUS: Right, I'm opposed to that and, if you read you know, with it in our book to some extent I mean, I think people need work. They want work and they want this sort of work that gives meaning to their lives. I mean, I think the Universal Basic Income might be better than working in an Amazon so-called fulfilment center, but I doubt it was better than working in a coal mine, even though coal mine was a very dangerous place because of all the social and employment and local capital that came with that. The other thing that I think is very hard, is it's very easy to think basically who has to pay for it, and there's a lot of people who are working some of them in jobs that they may not like very much and who are looking at young people, you know living in hippy paradises, smoking pot, and living off their universal basic income. So, I think there's a tremendous amount of resistance, maybe more here than there, to giving people money for not working. And you know, we've been through this once before, you know, Milton Friedman had pushed the idea of a negative income tax, which is basically like a Universal Basic Income. They ran a lot of real live Social Science experiments in the United States in the 60's and 70's to find out what would happen. And when it became clear that giving people money for not working caused them to work less, which is what came out of the experiment, Nixon and Congress dropped it like the hottest potato you can imagine. And I think, I don't think that's going to work. And there's an illusory you know people on the far right like Charles Murray, for instance favour it and people on the left favour it, and so you think: my goodness here's a policy that these people who are divided on everything actually agree on, maybe it's a good idea. But you know, the policy that right one, is one where Universal Basic Income replaces anything else and so you finish up with an enormous increase in poverty among disabled people for example who don't get the benefits they were getting before. On the left they want it in addition to the social safety that we have

already and so they don't want the same thing at all, and so you know there really is not any agreement there. So, I don't think this is feasible, and I think it's largely a distraction, and it's not a policy, but a lot of time thinking about.

HEATHER: So, you know you in saying that you've done that you said people basically need more is jobs, and you also in your talk talked about the fact that people base moved away from where they were educated, where they grew up if you like, and then never went back there because there were no jobs there. You know, I can't help but reflect on the fact that you went to a state school in Hawick and it must be something in the water, but there are lots of people relatively speaking to the population of Hawick who have really stood out academically and in the world. I mean you know it is quite astonishing that Duke of Buccleuch was mentioning to me the other day the list of people he could name who'd gone on from your school to do great things. But if any of you went back to work there, I don't think there's very many jobs for Nobel Prize winning economists in Hawick so, what do you what do you think? This is another question we've had is: you know what interventions might get people to go back, and do you and then in related to other questions about technology, do you think technology might be able to enable people to create jobs in places where there aren't currently jobs?

SIR ANGUS: That would be wonderful if we could do it. There were actually two Nobel Laureates in my class, including me, at Hawick high school. I actually know him, he's a chemist who got the prize a couple of years ago, but he used to stand on the platform of Hawick railway station, me going North, after school and him going South. He lived, he grew up in Newcastleton. And it was a very good school, a very highly streamed school with very dedicated teachers. And the thing that amazes me most about Hawick is that my father had conceived this idea which was completely beyond his sights of my going to Fettes which you know was not my idea and actually there was an entrance exam, a scholarship exam, which certainly most of which was not covered in the curriculum of the high school, but the teachers at Hawick High school took time out of their own time to train me up to pass this exam. And I mean, I've always thought that was an incredible monument to their dedication. You know, It's interesting though, you mentioned Hawick because Hawick of course was on the confluence of the River Teviot and Stirling rivers so there was water power to drive originally though that wasn't how they were being driven there, and it was a place with an enormous amount of social capital around rugby for instance, which we were all completely mad about but also the common writing and, you know, I never did it but I remember my cousins all getting horses and galloping around the marshes, and so on, but that's a very good example of the sort of thing we were talking about because when the industry goes away, then that stuff I'm sure it's still there, not with the intensity as it was and people tell me that there are parts of Hawick that are amongst the most deprived areas in Scotland right now. I don't think you can stop that, which is the industry's come and industries go, but what is horrible is if everybody who gets educated then finishes up in London in the financial sector or finishes up in Edinburgh and all places are destroyed, and maybe technology and new things will enable more people to go back to where they came from or to start new places with new industries so, you know and maybe it's because there's so much focus on finance which tends to bring everybody together. I don't know, but it would be and it's been very hard here too because you know, Amazon had this

competition for its second headquarters and then instead of putting in St. Louis or somewhere where it might have made a huge difference to a declining city it goes to Washington DC after being rebuffed by New York City. Boy, that's not going to help at all you know. Maybe some incentives for that maybe ways of making that work would, are certainly worth considering, but you know I, you know my mother grew up in Galashiels, and she had a lot of friends I've met there, and they were some of the wisest and most deeply read and interesting people I knew. I wonder if they'd be there anymore because they would have all gone to university and they would have been somewhere else.

HEATHER: What we are also being asked here is you know given your thoughts that you have just shared with us, and also what Adam Smith wrote in *The Theory of Moral Sentiments* he advises us as the question lies as if we've been continuously viewed by others, what advice would you have now to world leaders? You know, what is the one key thing that they should all be focusing on?

SIR ANGUS: Well, right now they should all be focusing on getting vaccines to poor countries, you know, because that is something we could do. In my book "The great escape", I wrote very negatively about foreign aid but when I was asked what I should do you do, which is never my strong suit, I said what we should do is we should do things that is aid for Africa, not aid in Africa. And you know, we're in a really ideal position to do that now which is we have these vaccines, you know large proportions of our populations were vaccinated, and we should be working very hard to make that come out everywhere else. So, I think that that's the key thing that we really need to do right now. We have a real opportunity to help people who are much worse off than ourselves without the harm that comes with larger foreign aid going into countries and undoing their politics and sort of messing them up. So, I think political leaders right now have their hands full with that. I think also for the United States, the real thing, and I have some sympathy with this among the kids, is they look at China and they say China is a horrible place, you know, it's sort of a dictatorship it's not free, but boy are they doing better than we are. And I think, thinking about China, and trying to delineate what they're doing right, what they're doing wrong and not turning our backs on China, but having a lot of contact with China you know exploring that, exploring the sympathetic things with Chinese people is something that we're going to have to do otherwise we're all doomed you know, because they have enormous technological advances you know, everything I think is being better than ours so, you know, coming to an understanding in the world with China is an incredibly important thing. That's little longer term than getting vaccines out there, but the vaccines is what they should be doing now.

HEATHER: We have a question here about the link between if you like social capital and wages, as in the questionnaire says this is. Michael Pelliccia, a colleague of mine asked: In the past a sense of "identity" or belonging to a group often used to replace what the wage couldn't, i.e. social capital, but nowadays it doesn't look like it is anymore the case for people who haven't got a degree and does this explain that despair, the people are not getting anything else other than money from their employer?

SIR ANGUS: Well, I would tend to put it, I'm sure that's right in the sense that many

people and some of them, I am privileged enough to know, have a very rich life, not based in their work, you know, it may be based in their church, or maybe based on something else. But you know, I'm enough of an economist to think that stuff depends on the economy, and the ability to do that and the you know successful social capital depends on people having enough to eat, and there being good jobs in the vicinity and the good jobs in the vicinity generates all sorts of other good stuff. So, I don't think you can say away with capitalism let's do with jobs and social capital will take its place. I, you know that's the vision of people sitting around playing video games and not having any work. I think that's a terrible idea, but social capital is incredibly important. But I think it tends to flourish around places that are flourishing in other ways even though it may survive for a long time. But your example of Hawick again is a good one you wonder just how long all these other good things will survive after there's no there is no humans there anymore are an essential part of that culture.

HEATHER: We have a question here about the makers. I like that description of the makers, you know the people who created wealth in America, attempt to be making something or contributing something well but they are trending to market dominance and the question is that, you know do some of these organisations are squeezing others out of the market and that is destroying jobs? I mean, particularly online courses has been at the forefront of the move away from bricks and mortar in the high street is some of that technology and some of those changes contributing to this big differentiation between people with and without degrees?

SIR ANGUS: Absolutely, and I think two things there, I didn't choose to talk about that today but normally, you know, I would have a slighter section talking about that. I mean these companies which were the great makers who changed our lives, who contributed an enormous issue up to us all, you know, should not be exempted from appropriate antitrust, scrutiny and I think that's beginning to happen. I think for the past 20 years or however long it is they've been given exemption from that essentially partly because of the political makeup of the people who are. The Europeans have been better at examining the negative consequences of that. But that's one of the huge topics now and as you see thinks like destroying the high street which is an important part of social capital. And all the other things that they do, which is buying up competitors all the rest of it so, I think we have to turn back to that and take antitrust seriously, and among economists and lawyers there's really serious new thinking going on about how to do that. I mean, it's not obvious that antitrust theory and law that was invented 100 years ago can be applied whole cloth to dealing with Apple and Amazon. Very smart people like my friend Jean Tirole who got the Nobel Prize for his work on antitrust, have been thinking very hard about what it takes to be done right now, but there's no doubt at all that, you know this is part of the Schumpeterian story you know, these people come along, they do creative destruction and then they turn into the bad guys. It's like the meritocracy you know, and so they choose to protect their gains. Google used to say: we will never lie because we don't believe in doing bad things and we don't need it, our technological superiority will bring us profits forever. They're now the largest lobbyist in Washington by mile. And so that's what happens and it's always what's happened historically. That the inventors become the people who choke off invention at the next stage, and I think it's a major task of public policy to stop these guys choking off the next round of invention.

HEATHER: So, just one last question about how we can how we can educate, because it strikes me, but the most important thing is to get as many people, you know, up skilled as possible. Looking at your book and your work and your talk today and as a university that delivers a lot of its education online, I wondered whether you would say something about how you think education could be democratised. This is a question we've had also in the chat, is there a way of using technology, I suppose to make education more available to other people? Do you think that that's maybe part of the solution?

SIR ANGUS: Yes, I do and I think some of it is happening here. I don't know how much is happening there but you can get sometimes really quite good degrees for very little money. And so, it's clear that my dad would have done it in front of a computer today and maybe Heriot-Watt would have been on the other end of the computer and that would be terrific because he would have been home instead of being away from his son so and I know some people have done very well, who got very cheap degrees that way. I'm not sure the system is as open to that as it should be. I mean, it's not hard to do right, because after all entrepreneurship can certainly start up those things. And, but you know, I wonder to what extent they can compete with a Cambridge degree or a Heriot-Watt degree, or whatever, and maybe that'll be the way of doing it. But I say that I don't think everybody needs to get a university degree and B: I don't think one of the things that's happened here is you know, I'm gonna put my confess up but you know those of us in Universities like Princeton or UNC Southern Carolina, Southern California are being grotesquely overpaid because we've been allowed to raise fees to the point where you know, the thing it's a story if you read Elizabeth Warren's autobiography the sort of first one you know, she worked as a waitress, she went to night school, she got degree, but I bet she got scholarships and she became a lawyer and then a Harvard Professor without spending almost a penny on education. None of that would be possible anyway and ironically she's the one that's advocating for forgiveness, of forgiving you know debts that people got in college, which of course would further enrich the universities now. So, I think there's been a real problem here. So, there's a lot of rent seeking going on in the sector and we have to somehow choke that off, and stop it from happening and keep the opportunities open so, yes. I will reflect on rent seeking in higher education and go and read Elizabeth Warren's autobiography.

HEATHER: Right, thank you very much, Angus. We've been enormously privileged to have you join us. Your personal connection with our university is a very fun one and very moving one, and also the transformational nature of education I think has really come across in everything that you have said today. I hope you've enjoyed being part of it. I know you have been at home in Princeton when you would have loved to have joined us here in Panmure house. We look forward in the future to you visiting here.