The rising importance of a longevity agenda
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One of the most extraordinary achievements of the last 100 years has been the sustained increase in life expectancy that has occurred across the world. In the UK, life expectancy at birth in 1920 was 57 and is now estimated to be 80\(^1\) – an increase of more than 2 years every decade. In India the rate of increase has been even more dramatic – from 25 to 69, or nearly 4.5 years every decade.

This sustained increase was one of the factors which prompted me to write The 100 Year Life – Living and Working in an Age of Longevity. The focus of that book was on the importance of restructuring the life course in response to this increase in the length of life and the consequential need to move away from a three stage life of education, work and retirement. The aim was to change the narrative away from just a focus on end of life and an ageing society and recognise that longevity is about a longer life which in turn has consequences for all of life.

The 100 Year Life was published in 2016 which coincided with a change in life expectancy trends in some countries. In the US, life expectancy has even started to decline and in the UK the rate of increase has slowed. As a consequence, I am often asked ‘Do we still need to be concerned about the prospect of a 100 year life?’. However a closer look at these recent trends reveals that the prospect of a 100 year life remains very real and that the importance of a longevity agenda has actually increased not diminished.

That’s due to three reasons – the gains already achieved in life expectancy irrespective of what future trends may bring; the likely length of life projecting forward even the current slower trends and finally the continual rise that is occurring in best practice life expectancy that is outstripping the UK.

\(^{1}\) These are period estimates of life expectancy. As described later that’s an important distinction and one that is likely to underestimate the lifespan of those born today.
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Even if there are no further improvements in UK life expectancy (which is not what the government is predicting) a new born boy today has life expectancy of 79 and a baby girl 83. That's thirteen more years than their grandparents had when they were born. Since a UK pension was first introduced in 1908, life expectancy has increased by 28 years! Whether you think life expectancy is 80, 100 or somewhere in between the message of The 100 Year Life still holds - a three stage life of learn, earn and retire can’t be stretched out to deal with this length of life.

As a result, we need to think differently about our education, our careers and refashion retirement. That process is already underway as a result of much individual experimentation but governments and corporates still have a long way to go. How we work and live, what policies governments provide and what products and markets serve us as consumers will be transformed in the decades ahead as we make the adjustment to these longer lives. These adjustments form the longevity agenda and are required because of the gains already achieved let alone what might happen in the future.
A major challenge in predicting the average lifespan of a new born today is knowing what will happen in the future to mortality rates. If we assume future mortality rates remain unchanged from those that prevail today then we have what are called period measures of life expectancy. The UK life expectancy at birth of 80 mentioned above is for instance a period measure. These get their name as they are based on the assumption that a child born today lives their life entirely subject to the mortality rates of the current period. In other words, they assume that when a child born in 2020 reaches the age of 60 in 2080, they will have the same mortality rate as a 60 year old does today in 2020. Because over time mortality rates tend to fall, these period estimates tend to underestimate future lifespans.

By contrast, cohort measures of life expectancy are based on projecting forward mortality trends. This is where the recent slowdown in UK life expectancy gains comes in. Extrapolating the current slower rate of decline in mortality leads to a lowering of cohort measures of life expectancy compared to past estimates.

It is important to recognise that isn’t the same as saying that children born today will have shorter lifespans than past generations. Given the continued expected decline in mortality rates children born today should still on average live longer than their parents. Instead what has been downgraded is the expected increase in their lifespan compared to past generations. For instance, based on 2016 mortality trends the cohort estimate of UK female life expectancy was 92.2. Because of the recent slowdown this has now been revised downwards to 90.2. That’s still however more than their mother who, assuming she is 30, had a life expectancy at birth of nearly 87.

It is also important to realise that 90.2 is an average. A lot of people will live longer than that and so have a rising chance of reaching 100. Based on latest trends the UK statistical agency believes that 1 in 5 baby girls born today can expect to live to 100. Admittedly that’s a lot fewer than the 1 in 3 based on 2016 data but it still means that 20% of girls born today should live to a 100. In other words, even given these recent trends the forecast is for the majority of babies born today to live into their 90s and have a plausible chance of reaching 100.

Thus, society and individuals need to prepare for a lifespan much greater than is supported by our current practices and policies. As this discussion shows part of the longevity agenda should be governments focusing on cohort measures of life expectancy and not period measures. If the public is to prepare for longer lives greater attention needs to be placed on these cohort measures.

\[2\] In fact median life expectancy e.g. the life expectancy of the ‘typical’ or average UK citizen will be even higher than this 90.2 because the distribution of life expectancy is left skewed e.g. the average life expectancy is dragged down by those who die relatively young.
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These dramatic increases in life expectancy have shown us that ageing is malleable to a degree previously thought impossible. How we age and how long we live for can be influenced by a range of behaviours, policies and of course the environment within which we live. Declining life expectancy is just another manifestation of that malleability but in the opposite direction— a form of technological regress. That’s what makes the recent declines in US life expectancy so shocking.

The fact that increases in life expectancy are slowing in some countries raises questions about the future malleability of age. What if we have reached a limit to how far we can increase life expectancy? As emphasised by Jay Olshansky\(^3\), because of already very low mortality rates amongst the young and the middle aged, further improvements in life expectancy will have to come from reductions in the mortality rates of the old. However, reducing the mortality rate of an 80 year old provides fewer additional years of life compared to saving the life of a newborn.

That implies that if life expectancy gains are to continue at their historic rate it will require an acceleration in the rate at which mortality declines at older ages.

However, if there is a limit to human life expectancy then mortality rates at older ages will prove immutable and life expectancy gains will grind to a halt. Could the current slowdown in UK life expectancy growth be due to reaching such a limit?

To evaluate this claim it is useful to consider Oeppen and Vaupel’s concept of ‘best practice life expectancy’\(^4\). This is defined by the country at a point in time with the highest life expectancy at birth. As Oeppen and Vaupel show, between 1870 and 2010 best practice life expectancy increased at a remarkably steady 2-3 years every decade (see Figure 1). That means, roughly, every generation has been living around 6-9 years longer than their parents.

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\(^3\) S. Jay Olshansky and Bruce Carnes “The Quest for Immortality”, (2001) WW Norton

\(^4\) Oeppen and Vaupel “Broken Limits to Life Expectancy” Science (2002)

https://science.sciencemag.org/content/296/5570/1029
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Figure 2 shows Oppen and Vaupel’s data extended through to 2017 (with best practice now defined by female life expectancy of 87.79 in Hong Kong⁵) and visually suggests the trend is continuing. However, the more detailed analysis of Figure 3 shows that at 1.6 years per decade the recent rise is less than the historical average, although not the lowest on record. It is too early to tell whether this represents a permanent shift in the trend growth of best practice - consistent with Olshansky’s fears.

⁵ Source: Human Mortality Database
However, the fact that best practice life expectancy continues to increase at 1.6 years is informative for the UK debate. As Figure 4 shows the shortfall between various countries life expectancy and best practice has been increasing in many cases. The UK, US and Germany are all below best practice life expectancy and in recent years the gap has got even larger. US life expectancy is now more than 6 years less than that in Hong Kong. This continual growth in best practice life expectancy shows that the possibility of a 100 year life continues to increase for each generation. It also raises stark questions as to why the same gains are not being achieved in other countries. Whilst it may be inevitable that eventually life expectancy gains stall the current trends in the UK and US are not inevitable given this growing divergence from best practice.
In 2007-9, when the global financial crisis produced sharp falls in GDP, policymakers committed to doing ‘whatever it would take’ to restore GDP growth. Similarly, the subsequent slowdown in trend productivity growth has produced much concern and numerous policy suggestions about how to escape from secular stagnation. By contrast, the deterioration in life expectancy trends in many countries has not produced a similar policy commitment or plethora of proposals.

This relative neglect is strange because whilst GDP is undoubtedly important it is hard to argue that life expectancy isn’t. Of course, if we have reached a limit to life expectancy then this relative neglect is understandable but given the continued divergence from best practice that cannot be the case for the UK and US.

Galvanising policy and public debate to take this issue seriously requires two steps – targeting and action. Governments need to start thinking of healthy life expectancy as a policy target, as the UK has recently done with its aim of achieving five more years of healthy life expectancy. Without a target, disappointing trends in life expectancy are merely a backdrop to policy discussion rather than a call for action.

There is a growing debate around the continued use of GDP as a key government target, with numerous alternatives proposed. Given that few variables are more important than (healthy) life expectancy this would seem a natural alternative. Further, healthy life expectancy depends directly on so many other oft suggested alternatives to GDP that it should be considered an overarching goal of government. For instance, a poor environment with poor air quality is bad for healthy life expectancy; happy lives also tend to be longer ones and, of course, GDP and the resources it provides correlates with longer healthy life expectancy too.
Making healthy life expectancy an overarching goal for policy also naturally builds in a focus on inequality. Because the average income of the rich is several thousand times higher than that of the poor, average income is larger than typical (median) income. When it comes to life expectancy the opposite is the case – typical/median life expectancy is larger than average life expectancy. Boosting average life expectancy can therefore be achieved by raising the lifespan of those with lowest life expectancy to what is ‘typical’ in the country. That doesn’t require path breaking developments in how long humans can live for. In fact, it doesn’t even require matching domestic let alone international best practice. Therefore the comparatively modest aim of raising life expectancy for those at the bottom to what is typical in the country will be a relatively simple way of achieving gains in average life expectancy.

Setting a target would also encourage a sharper focus on what is needed to promote healthy life expectancy. Whilst the role of the health system is obviously important here it would be a mistake to put too much weight on this sector. Hong Kong currently defines best practice life expectancy but underspends both the US and the UK in per capita health expenditure.

One explanation for this is that most countries have a medical rather than a health system. The focus in a medical system tends to be on illness and disease and with an ageing population that means a focus on frailty. This in turn leads to interventions when illness occurs rather than a preventative approach aimed at delaying such interventions.
A longevity agenda requires a major shift in emphasis towards preventative health. Health systems are already preparing for this through investments in big data and AI with the hope these will provide advance warning of future problems. Given the dominance of age as a cause in so many non-communicable diseases another required shift is away from targeting specific diseases and a greater emphasis on understanding ageing itself. Given an ageing society and the fact that years of both healthy and unhealthy life are increasing the gains from such a research program are potentially enormous.

A focus on preventative health reveals that many of the drivers of longevity sit outside of the health system. Education, employment, the environment, financial security, community, loneliness and purpose all play crucial roles in promoting healthy life expectancy. As the U.S phenomenon of the ‘deaths of despair’ illustrate, promoting healthy life expectancy is about a lot more than just the health system.

The consequence of this is that if healthy life expectancy gains are to be achieved it will require greater coordination across different government departments. In Japan the government set up a ‘Council for Design of a 100 Year Life’ and in a similar vein the UK is setting up a longevity council. If we are to achieve substantial gains in healthy life expectancy, governments need to state a target and then monitor both outcomes and policies to see if progress is being made and to identify measures to achieve success.

Together these elements define a longevity agenda and in the face of an ageing society this becomes ever more important. The better we age, the better we manage the shift towards an ageing society. Crucially this is about all generations and not just the very oldest – how we age doesn’t start when we become old but well before.

Further the company and country that successfully develops a longevity strategy will possess a major competitive advantage given that the whole world is ageing. That is why a longevity agenda has never been more important – in the face of an ageing society and growing divergences from best practice the need for the UK to focus on longevity has never been greater.

ANDREW J SCOTT

IS PROFESSOR OF ECONOMICS AT LONDON BUSINESS SCHOOL, CO-AUTHOR OF THE 100 YEAR LIFE: LIVING AND WORKING IN AN AGE OF LONGEVITY AND CO-FOUNDER OF THE LONGEVITY FORUM.