

JANUARY 2014

AGEING

**MARSALI LEEMING
& ROB LYONS**



MOTION:

**“ATTEMPTS TO EXTEND
RADICALLY THE
HUMAN LIFESPAN
SHOULD BE WELCOMED
NOT FEARED”**

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KEY TERMS

Alzheimer's disease

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INTRODUCTION

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If you had been born just 150 years ago, your life expectancy would have been 40 years. It has doubled in the developed world since then to around 80, and continues to rise. The main causes of this change are improvements in public sanitation, nutrition and healthcare. While it is to be welcomed, the progressive extension in life expectancy raises a number of practical and moral issues. For example, there is the cost of care and treatment: half of the medical expenses incurred on behalf of the average person are spent in his or her senior years [Ref: [NCBI](#)]. Then there is the rising cost of pensions: will pension funds, both public and private, remain solvent if they must pay out to each pensioner for longer? [Ref: [BBC News](#)]. On the ethical side, there are a range of questions such as the desirability of living for living's sake, on 'making room' for the younger generations, and on death giving meaning to life. Humans have always been interested in immortality, and in extending life – or, more usually, extending youth. Scientists are looking at ways to increase dramatically the rate at which lifespans have already been rising, thereby amplifying the issues that longer lives already present. Already, apparent progress has been made in mice [Ref: [New Scientist](#)]. As a society, we need to think about how desirable this is. Who pays for the research and associated healthcare? Is extending lifespan a valid focus for healthcare systems that are already struggling to cope with demand, with competing claims for the time and resources of doctors, beds and researchers? Should we grow old gracefully, or put our individual and collective efforts into delaying death? If life and health are good things, then shouldn't the aim to have more of both trump other concerns? These are not merely economic questions, but moral and existential ones, too.



Frankengran?

As well as simply extending our lifespans, there is the question of how much we can extend so called 'healthy life expectancy' - the period we can expect to live free of illness. In the UK, this currently stands at about 64 years for men and about 67 years for women [Ref: [Guardian](#)]. In other words, we need to consider questions about the quantity and the quality of life. We want, if we want it at all, to be younger for longer, not old for longer. As recent concern about rising levels of dementia illustrates, could we end up with nightmare scenarios of almost indestructible bodies with all the parts replaced, but the minds within them gone? Even if you could replace all the parts over time, could the mind cope? The debate, therefore, is not just about the steady rise in life expectancy and the issues surrounding that, but more specifically about whether or not to welcome scientific attempts to extend radically natural lifespan. Ethical, moral and religious concerns are crucial in this debate. Many people consider that it is death that gives meaning to life, that one has an allotted time, that we should respect the natural cycle and not be greedy for life, time and resources. Some argue that older people be prepared to 'make room' for younger generations – a 'duty to die' [Ref: [BBC](#)]. Others disagree and think that the quality, purpose or value of their lives is not for others to decide – if the technology is available to get more years out of life, then they want the freedom and funding to pursue it. Is the attempt to extend radically our lifespans simply just the next, logical step beyond a 'diet and exercise' approach to living longer?

Scientific Approaches

We age because our bodies have limited capacities to renew

themselves. [Ref: [Sage](#)]. Research into how to escape this reality and radically extend life seems to take three broad forms: 'compressed morbidity' (pushing the stage of serious ill-health and frailty right to the end of life); 'decelerated ageing' (slowing the ageing process); and 'arrested ageing'. This last is the most radical and aims to 'cure' ageing and to achieve radical life extension. The tools include the use of genetic manipulation, stem cells and biomechanical devices. Some of the claims and predictions made by scientists and futurologists in this regard are thought to be impossible hype – with some arguing that we may have already reached maximum life expectancy [Ref: [The Rational Optimist](#)], but they still offer a challenge to our acceptance of ageing.

Who pays?

Science will find what's possible, and people who want it and can afford it will buy the drugs/procedures/transplants deemed effective. And in a free world, supporters would argue, why not? They consider it wonderful, not alarming. The point of this debate is not to discuss what is possible scientifically, but how as a society we should greet such developments - what we should fund, what we should prioritise. It's an existential and ethical question, as well as an economic one. Will future generations thank us for saddling them with open-ended welfare and care bills? And will the technology only be available to the rich, leading to another source of inequality? Life, the saying goes, is certainly more appealing than the alternatives. But before applauding and signing up to the super-sized portion of life promised by some scientists, there is much to consider.

ESSENTIAL READING

When I'm 164: The Societal Implications of Radically Prolonged Lives

David Ewing Duncan *Atlantic* 4 September 2012

Popular arguments for and against longevity

George Dvorsky *Accelerating Future* March 2008

FOR

Why We Should Look Forward to Living to 120 and Beyond

Alex Zhavoronkov *nextavenue* 3 October 2013

Google's Calico: the War on Aging Has Truly Begun

Aubrey de Grey *TIME* 18 September 2013

Radical Life Extension Is Already Here, But We're Doing it Wrong

Ross Anderson *Atlantic* May 2012

Living to 100 and Beyond

Sonia Arrison *Wall Street Journal* 27 August 2011

AGAINST

On Dying After Your Time

Daniel Callahan *New York Times* 30 November 2013

Do You Want to Be Immortal? Really?

George M. Young *Huffington Post* 1 August 2012

Immortality may beckon, but who wants to live forever?

Bryony Gordon *Telegraph* 23 September 2009

Three Arguments Against Extending the Human lifespan

Journal of Medical Ethics October 2007

IN DEPTH

Why do our bodies grow old?

Sage 2012

Would doubling the human lifespan be a net positive or negative for us?

Gregory B Stock vs Daniel Callahan *Annals of the New York Academy of Sciences* January 2005

ORGANISATIONS

Alliance for Aging Research

British Society of Gerontology

Fight Aging

Immortality Institute

Institute for Ageing and Health (IAH)

International Longevity Centre UK

Medical Research Council

National Institute on Aging

Strategies for Engineered Negligible Senescence (SENS)

The Oxford Institute of Population Ageing

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BACKGROUNDERS

How Japan stood up to old age

David Pilling *FT Magazine* 17 January 2014

Undoing aging: Aubrey de Grey

TEDxTalks December 2013

Prof Tom Kirkwood on Ageing

The Astellas Innovation Debate 6 November 2013

Why are there so few people over 115 years of age? (One)

Matt Ridley *The Rational Optimist Blog* 22 September 2013

Fear of Immortality

Will Saletan *Slate* 6 August 2013

Where are the missing 90-year-olds?

Ruth Alexander *BBC* 2 July 2013

Life expectancy is increasing, but so are social divides

Christine Broughan *Guardian* 9 July 2012

We DON'T want to live forever: a growing movement believe we shouldn't obsess over life expectancy

Rob Waugh *Daily Mail* 22 May 2012

Cost of care and geriatric medicine

British Geriatrics Society 24 October 2010

Migration v ageing population - a tricky trade-off

BBC News 19 November 2009

Older people are more than 'food for worms'

Brendan O'Neill *spiked* 23 July 2009

The ageing revolution

BBC News

The ethics of life-extension

Edmonton Aging Symposium March 2007

Lingering Longer: Who Will Care?

Leon R. Kass *Washington Post* 29 September 2005

The science of ageing and anti-ageing

Halldór Stefánsson *EMBO Reports* July 2005

Who wants to live forever?

Jayne C Lucke and Wayne Hall *EMBO Reports* February 2005

'We will be able to live to 1,000'

Aubrey de Grey *BBC News* December 2004

'Don't fall for the cult of immortality'

S Jay Olshansky *BBC News* December 2004

See how the UK's population is changing

BBC News November 2004

The Lifetime Distribution of Health Care Costs

Berhanu Alemayehu and Kenneth E Warner *Health Services Research* June 2004

The end of age

Reith Lectures *BBC Radio 4* 2001

Investigating development, ageing and chronic disease

Wellcome Trust

Is there a duty to die?

BBC

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IN THE NEWS

Ageing reversed as scientists discover how to turn clock back in mammals

Telegraph 20 December 2013

Turning back time: ageing reversed in mice

New Scientist 19 December 2013

Could humans live to 500 years old?

Daily Mail 13 December 2013

NHS faces 'bankruptcy' over ageing population

Telegraph 17 October 2013

Live to 120? Most say 'no thanks', poll finds

NBC 6 August 2013

Britain needs millions more immigrants to reduce strain of ageing population

Telegraph 17 July 2013

Ageing population will have huge impact on social services, Lords told

Guardian 24 February 2013

Respect your elders: why the ageing population is good news

Channel 4 News 9 January 2013

UK healthy life expectancy rises to nearly 64 for men

Guardian 29 September 2012

Dementia cases worldwide to triple by 2050

NBC 11 April 2012

Harvard scientists reverse the ageing process in mice – now for humans

Guardian 28 November 2010

Ageing populations and fewer workers strain pensions

BBC News 14 September 2010

Brussels warns on long-term costs of ageing

Financial Times 15 October 2009

Half of babies 'will live to 100'

BBC News 2 October 2009

Map charts UK's ageing population

BBC News 1 October 2009

Ageing population heralds rise of the 'supercentenarian'

Daily Telegraph 30 September 2009

UK retirement age could rise to 70

The Times 8 August 2009

Population of older people set to surpass number of children, report finds

Guardian 20 July 2009

Britain's ageing population 'as big a threat as climate change'

Daily Telegraph 29 May 2008

Cameron sees 'ageing UK' benefits

BBC News October 2006

Politicians urged to face up to demographic timebomb

Guardian October 2006

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NOTES

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