Editorial

S. Harper

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5 commentaries on 21st Century Giants—70 years on from Beveridge

Seventy years ago in 1942, William Beveridge identified 5 giants of the mid 20th Century—want, disease, ignorance, squalor and idleness. As we approach 2012, the JPA has commissioned 5 thought pieces which will address the new giants of the 21st Century and how the future demographic change of this century will impact upon their development over the coming decades. All have at their centre inequality—inequality within countries, inequality between regions, and inequalities between generations. The pieces will consider inequality and health, inequality and poverty, and intergenerational justice. The first thought piece turns to issues around longevity and disability.

Giants of the 21st Century: Longevity and Disability

Sarah Harper

The Dutchman, Geert Boomgard, is recognised as the world's first supercentenarian, dying at 110 years. A long but not extra-ordinary lengthy life in the light of recent longevity records of well over 115, and even over 120. However, Geert was a soldier in the Napoleonic Army, born in the 1700s, and one of some 30 verified centenarians from the 18th century, and a handful from the 17th century before. The life of Geert

The JPA is grateful to Geoff Muligan for introducing us to the idea of revisiting the Giants

Under the *International Classification of Functioning, Disability and Health* (ICF) disability is the umbrella term for impairments, activity limitations and participation restrictions, referring to the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors).

S. Harper (✉)

Oxford Institute of Population Ageing, University of Oxford, 66 Barbury Road, Oxford OX2 6DJ, UK
e-mail: sarah.harper@ageing.ox.ac.uk

highlights two phenomenon. Firstly there has for centuries been long lived individuals, secondly these have been the exception.

It was the 20th Century which saw a continuous increase in the number of people reaching their hundredth birthday, more than doubling each decade in the second half of the century. It is the 21st Century which heralds 100 years as being the normal expected human life span. In the UK for example, the number reaching a century is predicted to rise from 11,000 in 2011 to near half a million by the middle of the century and approach one million by the 22nd century.

It is already predicted that the life expectancy of Europe's 2007 birth cohort is now 103, and that 50% of all baby girls now born in the region will reach their century (Vaupel 2011). If this is the case then 100 will have become the new 3 score years and 10. These predictions are largely attributed to continuous improvements in survival at advanced ages (Olshansky et al. 2002). What of radical longevity? The advances in bio-technology, stem cell research, new genetics, nano-technology which open up the promise of life expectancies of 120, 140 180..... While some argue that there is a limit to reasonably expected mortality improvements from efforts around disease prevention and cure, (Howse 2005) others point out that life extension is the unintended—but inevitable—by product of controlling and conquering chronic disease.¹

Such dramatic increases in normal human longevity raise two important questions. Firstly, what is the impact of such radical life extension on individuals and society? Scenarios discussed, for example, by the US President's Commission on Bioethics in 2003. Secondly, what is the potential quality of life—and in particular health status—of these extended lives? For such longevity may herald significant increases in the percentage, number and experience of lives affected by disability.

As the recent WHO report on Global Disability (WHO 2011) points out, more than a billion people are estimated to live with some form of disability, or about 15% of the world's population, of whom nearly 200 million experience considerable difficulties in functioning. Of these, the *World Health Survey* (World Health Survey 2002) estimates that 110 million people (2.2%) have very significant difficulties in functioning, while the *Global Burden of Disease* (Murray and Lopez 1996) estimates that 190 million (3.8%) have severe disability.

In the years ahead, disability will be an even greater concern because its prevalence is on the rise. This is due to ageing populations and the higher risk of disability in older people as well as the global increase in chronic health conditions such as diabetes, cardiovascular disease, cancer and mental health disorders (WHO 2011: xi).

Indeed the increase in chronic disease, observed in all parts of the world, will have a profound effect on both the nature and prevalence of disability. While currently low and middle income countries suffer from a range of widespread disabling conditions, extant across the life course, arising from poverty, disease, malnutrition, and civil strife, these populations too are increasingly being affected by the disabling effects of chronic disease, which now account for 66.5% of all years lived with disability (WHO 2008).²

¹ Fairchild, P. Institute of Stem Cell Research, Oxford, Personal communication

² *The global burden of disease: 2004 update*. Geneva, World Health Organization, 2008.

Key to these assertions is the debate around the compression of morbidity. This hypothesises that as we postpone the onset of chronic conditions, so we will compress the morbidity associated with these (Robine et al. 2003). While hotly debated for three decades, the recent increase in disability data collection, and the introduction of disability into models of health, has significantly clarified the relationships between disease and mortality. In particular the recent comprehensive international review of disability-free life expectancy (DFLE) which attempted to harmonise the definitions of disability, has enabled an increased understanding of the relationship.³ There is now some agreement that morbidity compression is occurring, and that current increases in life expectancy may lead to an increase in disability prevalence, but a fall in the severity (Manton 1982; Manton et al. 2008). The UK, for example, has seen an increase in life expectancy, Healthy Life Expectancy and Disabled Life Expectancy over the past 30 years. While male life expectancy at 65 rose by 4 years between 1981 and 2006, the period of disability rose from 5.4 years to 7 during this time, however the rise in the proportion of disabled life which this led to was negligible rising from 41.5% to 41.7%. For women life expectancy at 65 rose by 2 years, the period of disability rose from 8.4 years to 9.3, an actual proportionate fall from 49.4% to 48.9%.

As we look forward to the 21st Century however, it does become increasingly unlikely that the compression of morbidity will continue given the very long lives now predicted. Indeed, it seems highly probable that the science which is driving life expectancy will also drive disabled life expectancy, as we are able to control and contain disabling conditions. It is also highly probable that we shall in the future see more individuals reliant on medical and scientific interventions for longer periods of their lives. It may also be that the experience of disability and frailty in this future world of science and technology will be recognised as an increasingly positive one and thus for the individual not be a particularly burdensome end of life state.

The 21st century will thus likely see a significant increase in disability, and at the same time a shift from it being a life course experience to one associated with old age. Just as we have seen death in the 20th century being pushed back so that it no longer is the common experience across the life course but associated with old age, so the 21st century is likely to see disability pushed back to older and older ages. This is also in response to the likely conquering of famine, poverty, and civil strife in the South as the century progresses. The combination of these two trends—increasing life expectancy everywhere, and the possibility of radical increases in the future, combined with the eradication of disease, famine and strife in the South—herald a future where disability is not only pushed further back into the later life, but also becomes an increasing part of most people's lived experience. Science and medical advances will reduce the number and percentage of those born with a disability or who experience disability in younger life, but increase the number and percentage experiencing it in later lives. Current projections along these lines predict that we will have 25% or even 30% of the world's population living with some form

³ REVES, the International Network of Health Expectancy and the Disability Process; Robine et al. (2003).

of disability. At that stage disability will become the common experience of human life.

One of the key writers around issues of independent living and disability, Dr. Raffaello Belli from the National Council for Research in Florence, has stressed that we should consider those who are born with a disability and those who take on disability later in lives as two distinct and separate groups of individuals with very different experiences. The scientific advances of the 21st century will impact upon both early and late life to see a likely decrease in lifelong disability, but potentially a significant increase in late life disability. Views that we need to accept frailty at the end of life as part of the human condition (Harper 1997) will need to change, as it is now likely that science and medicine will increasingly reduce frailty, but increase the experience of living and dying with a disability.

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