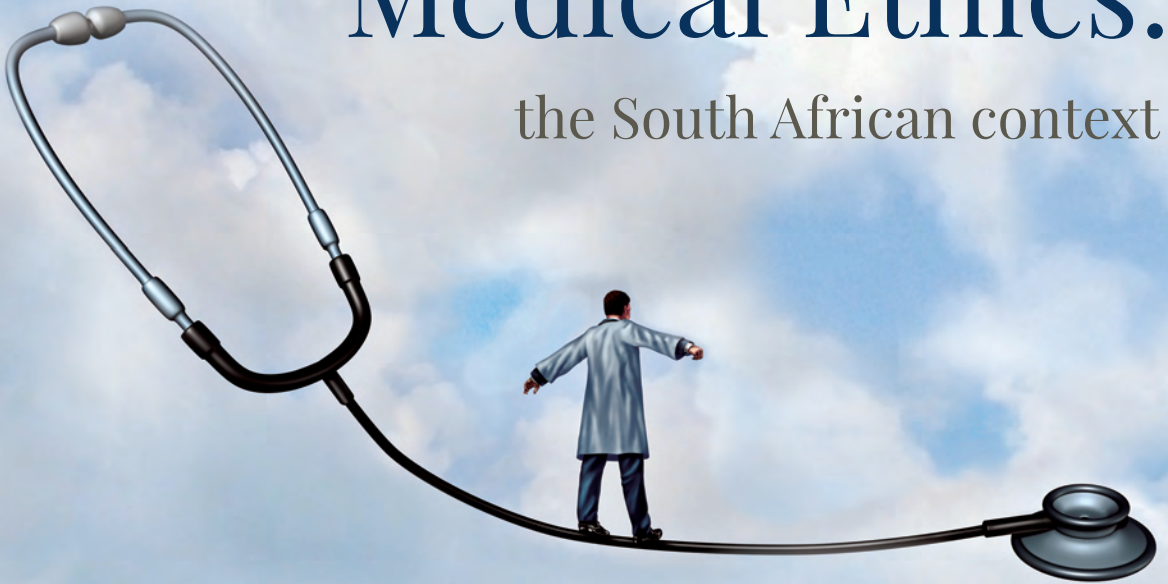


Challenges in Medical Ethics:

the South African context



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10

Significantly Increased Longevity

Does it make sense?

Anton van Niekerk

Keywords: Aubrey de Grey; boredom; death; disease; ethics of responsibility; life expectancy; longevity; Yoval Noah Harari

10.1 INTRODUCTION

More and more are nowadays written about ageing, old age, and longevity than previously. Ageing is a serious topic, particularly for those who are lucky (or unlucky!) to grow old themselves. For the latter, ageing and longevity is no mere intellectual interest, but an existential interest – one is concerned with ageing because ageing is the portal to death (that awaits us all).

It does help a little to take recourse to a sense of humour when we reflect on old age and longevity. Julie Andrews, star of the 1965 film *The Sound of Music*, has recently drawn attention to a quite funny adaptation of one of the hit songs in the film, “My favourite things”. It goes as follows:

*Botox and nose drops and needles for knitting,
Walkers and handrails and new dental fittings.
Bundles of magazines tied up in strings,
These are a few of my favourite things.*

*Cadillacs and cataracts, hearing aids and glasses,
Polydent and Fixodent and false teeth in glasses.
Pacemakers, golf carts and porches with swings,
These are a few of my favourite things.*

*When the pipes leak, when the bones creak,
When the knees go bad,
I simply remember my favourite things,
And then I don't feel so bad.*¹

10.2 INCREASED LONGEVITY AS THE FUNDAMENTAL AGENDA OF THE 21ST CENTURY

The Israeli historian, Yuval Noah Harari, in a relatively recent book, titled *Homo Deus* (2016), allots the book the striking sub-title: “A brief history of tomorrow”. What is particularly notable in Harari’s work is his claim that longevity – indeed, possibly even immortality – is set to become the central agenda of the 21st century.² We have all been brought up with the conviction that the only complete unavoids in life are death and taxes. The enormity of the upheaval that the Fourth Industrial Revolution is to bring to our way of life is, according to Harari (as well as gerontologists such as Aubrey de Grey), no less than a definitive end to the fear of death.

Let me quote Harari (2016:31) in this respect:

Hence, even if we don’t achieve immortality in our lifetime, the war against death is still likely to be the flagship project of the coming century. When you take into account our belief in the sanctity of human life, add the dynamics of the scientific establishment, and top it all with the needs of the capitalist economy, a relentless war against death seems to be inevitable. Our ideological commitment to human life will never allow us simply to accept human death. As long as people die of something, we will strive to overcome it.

Harari (2016:32-33) continues on the next page:

If all that is not enough, the fear of death ingrained in most humans will give the war against death an irresistible momentum. As long as people assumed that death is inevitable, they trained themselves from an early age to suppress the desire to live for ever, or harnessed it in favour of substitute goals. People want to live forever, so they compose an ‘immortal’ symphony, they strive for ‘glory’ in some war or even sacrifice their lives so that their souls will ‘enjoy everlasting bliss in paradise’. A large part of our artistic creativity, our political commitment and our religious piety is

1 To instantly recognise this (albeit adapted) song, of course, reveals the age of the reader/listener. I was 12 when the record-setting film was released, and I probably saw the film at least three times!

2 See also Harari (2018).

fuelled by the fear of death ... Once people think (with or without good reason) that they have a serious chance of escaping death, the desire for life will refuse to go on pulling the rickety wagon of art, ideology and religion, and will sweep forward like an avalanche.

It is, of course, one thing to strive for immortality or significantly increased longevity. It is something else to master the means of conquering the wide variety of ways that might succeed with such an enterprise.

10.3 GROWING OLD WITHOUT BECOMING AGED: ENTER AUBREY DE GREY

One of the intellectuals who unwaveringly believes that death does not have the final word, is Aubrey de Grey from Cambridge. While Harari is still quite modest in his projections of expected longevity, De Grey has recently drawn much attention with the considerably bolder claims he makes in this regard. He identifies himself as a 'biogerontologist' and is currently chief science officer of the Strategies for Engineered Negligible Senescence (SENS) Foundation in Cambridge. He claims that "[ageing] is no more than a widespread, extremely destructive, yet avoidable cluster of diseases that could all be reversed or cured in view of extending our lifespan almost indefinitely" (De Grey, 2008:103). *We can grow old without becoming aged*. To quote De Grey (2008:67-68) himself:

Recent biotechnological progress indicates that many aspects of ageing may indeed be effectively treatable by regenerative medicine in the foreseeable future. We cannot yet know whether all aspects will be curable, but extensive scrutiny has failed to identify any definite exceptions. Therefore, at this point there is a significant chance that such therapies would postpone age-related decline by several years, if not more, which constitutes a clear case for allocating significant resources to the attempt to develop those therapies.

Just about every disease or degeneration of the human body associated with the process of ageing can, according to De Grey, be 'reverse-engineered'. The big challenge is to arrest the process of ageing, not at the equivalent of the bodily prowess of a 90-year-old, but rather at that of a 40-year-old. De Grey is confident that the first person to reach the age of 1 000 has already been born, and he has high hopes that it will indeed be himself.

This chapter deals with the question as to the fleeting nature of youth as well as whether death can be postponed indefinitely, as is increasingly argued by scientists and intellectuals under the impression of our species' ability to take our own evolution to hand.

These questions are also the outcome of the fact that human beings are capable of attaining control over their own evolution, rather than to simply continue our traditional submittance to changes in the process of evolution that occur beyond our knowledge or control. This issue is important because it contains the potential to transform our complete understanding of the meaning of our lives. If we do, in principle, have to fear death, or if we can bargain on 'eternal youth', all our normal life priorities are indeed submitted to a definitive transformation. As we currently live in the face of our mortality, life does indeed receive its seriousness and urgency from the reality of death.

It is of value to, in this respect, refer to the work of the Russian philosopher, Nicolas Berdyaev. He writes (1948:250):

Heidegger is right in saying that the herd-mentality (das Man) is insensitive to the anguish of death. It feels merely a low fear of death as of that which makes life meaningless. But there is another half of the truth, concealed from the ordinary point of view. Death not merely makes life senseless and corruptible: it is also a sign coming.

10.4 OLD AGE AND THE FEAR OF DEATH

When people are asked for their reasons for fearing old age, the answer is normally quite straightforward and self-evident. None of us wishes (except maybe for very personal reasons) to become ugly, obese, overly skinny, constrained, stiff or immobile, forgetful, or (heaven forbid) incontinent. I once heard someone (on in years) say: "Life might start at 60, but my experience is that everything else then also starts to either wear out, implode or to spread sideways!"

All the latter 'old age traits' are symptoms of a disease of one kind or another (heart disease, cancer, diabetes, stroke, arthritis, etc.). We fundamentally fear old age since old age is one of the most notable risk factors for (serious) disease. Many of the mentioned diseases cause death in a majority of cases (i.e., if death is not brought on by something else).

If that is the case, i.e., if old age is the most significant risk-factor for all these diseases, would it not be better to 'attack' old age itself and avoid death, rather than to attack (by treatments, medications, etc.) all these other 'causes of death' in the sense of bodily disease? Put differently: Is our fear of death not better overcome by interventions that slow down, halt, or repair those parts of the body that are hurt or dysfunctional? In this regard, again be reminded of the claim of Aubrey de Grey that biogerontology is making rapid progress towards 'reverse engineering' every body part that loses function or use.

We are seemingly not built or ‘designed’ to live forever. I will later deal with general longevity information. What is striking, nevertheless, is that while life expectancy is at the moment growing all over the world (i.e., more people are growing older than before, but also – significantly fewer infants are dying), this does not seem to have a notable effect on longevity. Many more people exceed the ages of 70, 80, and 90 than was the case a century or two earlier. But living individuals seem to have a kind of ceiling in terms of the age that they attain.

10.5 LIFE EXPECTANCY AND LONGEVITY

Let us illustrate this latter claim. Until recently, a French woman by the name of Jeanne Calment was the oldest human person recorded – 122 years and 164 days. She died on 4 August 1997 (*Wikipedia*, accessed 13 October 2022). Currently, the oldest person alive is Lucille Randon who also lives in France at the age of 118 years and 244 days. It is insightful that she was born in the year after the Wright brothers flew for the first time.

Kane Tanaka was a Japanese woman who lived for 119 years and 107 days. She died on 19 April 2022. It is told that, until she died, she had a crush on chocolates and soda drinks. She also loved board games and she thrived on building puzzles. The past did not interest her much – she was mainly focused on the future. The *Guinness Book of Records* recognised her as the oldest person while alive. She got married at the age of 19. Her family ran a noodle store since 1937, when her husband and son left to fight the Japanese war.

Demographers inform us that in 2040, Spain will overtake Japan as the world’s population with the greatest average longevity. Average life expectancy in Spain at that time will be 86.

According to the Japanese Ministry of Health, in 2021 there were 86 510 people alive at the age of 100 or more in Japan – 6 060 more than the previous year. Yet, no one has up to now ever lived longer than the 122 years that Jeanne Calment lived. We might therefore wonder how regularly people in future will exceed the ages of 130 or 140, let alone 150. While it certainly is possible that that kind of age will be reached without dramatic technological innovations, it has not been achieved and there are no clear-cut signs that it is due to happen.

In general, there is no consensus among scientists on how long people are likely to live under ideal (e.g., pandemic-free) circumstances. A 2016 study found the upper limit to be more or less an age of 115, but another Italian study preferred to not impose a limit (Olshansky & Carnes, 2019). While it is a fact that a growing number of people surpass the age of 80, that in itself is not so remarkable. Steven

Pinker rightfully points out that there also were centenarians at the beginning of the 20th century (Pinker, 2011). Again: while life expectancy is rising all over the world, individual centenarians are not increasing significantly.

10.6 WHAT CAUSES DEATH?

Scientists today better understand the cellular and molecular processes that cause old age. A recent *JAMA*³ study (2017) classified the most prevalent causes into four groups:

- Chronic inflammation;
- Cell disfunction;
- Changes in stem cells that prevent these cells from regenerating tissue; and
- Cellular ageing, the accumulation of cells that accompany disease.

Young people apparently have relatively few of these ageing cells. However, they start accumulating in the body after the age of 60 has been reached. The more these cells accumulate, it is striking that their growing number correlate with the disabilities of old age.

Would it be possible to replace these ageing cells with new, young cells? This is the topic of much research currently taking place. One study has shown that the old cells of mice have reacted quite favourably to two drugs: the one is Dasatinib (normally used as a cancer drug) and the other is Quercetin (Hickson, Prata, Bobart & Evans, 2019), normally a plant flavonoid. Flavonoids are a group of plant metabolites thought to provide health benefits through cell signalling pathways and antioxidant effects. These molecules are found in a variety of fruits and vegetables. Flavonoids are polyphenolic molecules containing 15 carbon atoms and are soluble in water.

10.7 IS OLD AGE A DISEASE?

This brings us to question of whether old age itself ought to be looked upon as some kind of disease. The opposing participants in this debate are Aubrey de Grey, to whom I have referred earlier, and Nir Barzilai, founding director of the Institute for Aging Research, the Nathan Schock Centre of Excellence in the Basic Biology of Aging, and the Paul F Glen Center for the Biology of Human

3 *JAMA* is the acronym for *Journal of the American Association of Medicine*, widely regarded as one of the best accredited medical journals in the world.

Aging Research at Albert Einstein College of Medicine of Yeshiva University in New York City, USA.

Barzilai is adamant that old age is not a disease. His main claim is that his research in this respect is only related to an assembly of age-related diseases that will, eventually, affect mortality.

Aubrey de Grey takes the opposite view. For him, ageing is indeed a disease. I quote again: "Age is no more than a wide-spread, extremely destructive, yet avoidable cluster of diseases that could all be reversed or cured in view of extending our lifespan almost indefinitely" (2008:103).

De Grey is a protagonist of so-called 'regenerative medicine' that facilitates the 'reverse-engineering' of worn-out body parts. All of the techniques or means to accomplish the latter are not yet available, but there is, according to De Grey, no reason why they cannot or should not be developed in the future. His biggest problem as of yet was to find the resources for this kind of research. Quite impressive laboratories where this kind of research is and can be done already have been erected at the universities of Cambridge, Harvard, and California (Berkeley).

One of the biggest challenges in this kind of work is to 'arrest' the process of ageing, not at the ages of 80 or 90 (that are normally associated with old age), but at the ages of 35 to 45, when people are normally 'at their physical and emotional best'. De Grey detests (the thought of) death. He is unpersuaded by the argument that death can indeed be a huge relief in our efforts to be safeguarded against monsters like Hitler, Stalin, or Mugabe and the extreme damage that they have brought upon (Western) civilisation.

In that respect, I surmise that De Grey will also be unpersuaded by Roald Dahl's gripping short story titled, "Genesis and catastrophe: A true story", from his short story volume *Tales of the Unexpected*. This is the (true!) story of the birth of Hitler, whose mother is inconsolable because of his unlikelihood of survival – he will be the third child she has to bury. Her husband is no consolation either. He is even more convinced that the weakly-developed little creature will eventually not survive. But, as we now know, the little creature did in the end survive. How much better and more hospitable might the world not have been if the young Adolf (named after his father Alois) did in fact not survive? Death can indeed often time be a salvation if we think of the havoc that moral monsters can cause. Yet even such a counterargument does not persuade De Grey – death is the all-time enemy that we ideally ought to avoid at all costs.

10.8 NOT LONGER BUT MORE HEALTHY LIVES

De Grey and Barzilai are, of course, not the only participants in these debates. A more conservative, yet internationally recognised researcher such as Prof. S. Jay Olshansky of the University of Illinois claims that there is an upper limit for our normal ageing process, viz. 85. Olshansky and his colleagues Carnes (2019:9,21) write in this regard: “Parts of the body, including the brain, are not designed for long-term use. We are seeing the consequences of pushing the limits of survival: the rise of Alzheimer’s disease, dementias, joint and hip problems, loss of muscle mass.”

We tend to think of these disease phenomena as instances of the failure of both body and mind to survive indefinitely. But Olshansky argues that these phenomena are not indicative of too much/early failure of the body, but rather of too much success in our efforts to make people live longer. We are making entities survive that have indeed long passed their shelf life. What we ought to try and accomplish in the expectation of death, is not a *longer* life, but indeed a *healthier* life. Olshansky and Carnes (2019:8,21) write in this respect:

If the goal of aging science and modern medicine shifts from its historical emphasis on trying to make us live longer, to a new goal of extending the period of healthy life, we no longer have to fight the uphill battle against life table entropy.

10.9 IS A LONG LIFE DESIRABLE?

Do we really want to live indefinitely? On the basis of personal experience, I cannot say that I have ever come across someone with a clear and articulated desire to live longer than 90 or 100 years.⁴ A recent survey among USA citizens showed that 38% of Americans wish to use life-prolonging drugs, against 56% who do not (the remaining 6% are non-committal). Of those polled, only 4% are of the opinion that the average age for humans ought to be 120. Interestingly enough, religious people are not more opposed to life-prolonging actions than non-religious people.

Another pivotal question remains: do we really want to live that long? In this respect, De Grey really seems to be an exception. I find the idea of living a couple

4 My own mother is a notable exception in this regard. She became quite old (95), and her final decade was marred by consistently decreasing quality of life. Yet neither I nor my siblings ever heard her express the desire to die. For a more complete discussion, see Van Niekerk (2017:39-43).

of hundred or even a thousand years quite unattractive. In a book published in the early 1970s, the English philosopher-ethicist Brian Williams correctly pointed out that the thing to fear most from an indefinitely prolonged life is sustained boredom (Williams, 1973). Suppose a 'normal' human life stretches out to 1 000 years ahead in time. It is safe to surmise that a career in the lives that we normally lead lasts for 40 or 50 years – let's make it 80 years in order to accommodate the exceptions among us. Someone who was a doctor in the first 80 years of living can hardly be conceived to proceed with his/her 'second stint' as a doctor with another 80 years awaiting. Careers could indeed be changed – but how often? Twice? Four times? Six? Imagine a person, having lived 600 years, and 'looking forward' to another 400! Apart from the medico-scientific-technological challenge of bringing this off, it seems to me like nothing but a sure formula for the utmost form of boredom. What is also unclear is the nature and quality of the interaction and communication that a 'mere spring chicken of 68' (my current age) might have with a person who lives into his/her three or seven hundreds.

I cannot imagine that such a life might amount to anything other than boredom and loneliness. Imagine the living memories of someone who has been around for a couple of hundred years! (For further aspects of this argument, see Nicolas Agar (2010:112-113).)

10.10 SOME FURTHER ISSUES

The argument above does not exhaust the array of ethical questions that are provoked by the prospect of unlimited longevity. The first of these questions asks who is to benefit most by research of this nature. Will it be credible that the party with the most interest in this research will indeed be future Aubrey de Greys whose only interest in life is to prolong it? It is indeed quite conceivable that a lot of money is probably to be made on this research, or that this whole enterprise amounts to an overt lucrative initiative emanating from Big Pharma.

A second question relates to the question of distributive justice in terms of who will benefit. Will there be justice in the distribution of the benefits emanating from this work?

Even if the justice of the production of the end-results could be demonstrated, the question of possible over-population remains. We are at the moment in the vicinity of 8 billion people inhabiting this planet. Are we seriously going to throw the best that science, technology, and big capital can offer to an enterprise such as (in principle) unlimited longevity and dramatic increases in life expectancy?

Therefore, while there are quite serious questions to raise about the scientific, economic, and technological viability of a project such as this, we ought, thirdly, to make sure that our attitudes with respect to either the embracing or the rejection of this practice are morally justifiable. We have noted concerns that question the desirability of these practices. We should, however, not reject a desire for longevity and life expectancy purely on the basis of the argument that such a desire amounts to a morally unjustifiable desire to biomedically enhance ourselves and/or our children.

If the argument amounts to no more than that medico-technological means are used to prolong longevity, it is fundamentally unclear as to why there is any sustainable moral objection to that. We have, as a species, enhanced ourselves for thousands of years. Furthermore, we are facilitating our life quality with a range of technological devices, ranging from wheelchairs to radios to television sets to renal dialysis machines – in each case to enhance the way we live, at both a young and old age. The reader who regards drastic life prolonging measures as an instance of doubtful human enhancement is invited to do a simple thought experiment: Imagine someone who died 400 years ago and gets ‘resurrected’ in our current-day world. The world in which we live would, for that person, hardly be recognisable. The world’s appearance would by and large be the outcome of sustained ‘enhancement’ over four centuries.⁵

The objection to human enhancement cannot either be that we are departing from the canons of ‘human nature’. It is a risky and sometimes inconsistent idea that ‘human nature’ should constitute a norm to which we should all adhere. If we are serious about such an idea, we ought to realise that if we decide for the normativity of ‘human nature’, that cannot only mean that we work with an idealised format of human nature. If ‘human nature’ becomes normative for all of us, we must be happy to take that idea on board – ‘warts and all’, as we say. ‘Human nature’ is not only represented by Mandela and Ghandi and Shakespeare. It is unfortunately sometimes also represented by Hitler and Stalin and Jack the Ripper. Embracing ‘human nature’ as that we ought to pursue in the process of enhancement is sure to land us with a character set that is not always desirable. It is not for nothing that the crime and mystery novelist Agatha Christie so often ascribes the reason for the crime being investigated in a certain book to the fact that the criminal is bound to act according to the dictates of ‘human nature’. In her living room in St Mary’s Meade, Christie’s Miss Marple is regularly able to solve some crime on the basis of her knowledge of ‘human nature’.

⁵ For a substantive debate about these issues, see Van Niekerk (2014) and (2016), and Penrose (2016).

What, then, remains to be said of Harari's prediction that the quest for significantly enhanced longevity, paired with significantly increased average life expectancy, will be the main technologically and scientifically mediated agenda of the 21st century?

I personally am not very attracted to this idea. For reasons that have been spelled out, I find the idea of radically enhanced longevity both boring and undesirable. I would much rather opt for the idea that human existence is best circumscribed, not as the indefinite survival of a small number of individuals who continue to live for little other reason than the fact that their current existence is the outcome of remarkable and unforeseen technological achievements. (A possible exception to this eventuality could be the situation of geniuses like Einstein and Darwin whose continued existence could significantly contribute to scientific, technological, and even political progress.)

However, both the literature on the matter as well as anecdotal evidence strongly suggest that a more prudent interpretation of a life that approaches old age is to regard it in terms of an organism which exists with and in terms of a history. Tirosch-Samuelson (2011:41) writes in this regard:

Since the human being is an organism, rather than a mechanical device, human beings undergo the cycle of life, maturation, aging and death, which exemplifies the rhythm of creation and the gift of life. An organism has a beginning, a life cycle (or a history) and, eventually, a process of termination.

In the next paragraph, I translate and quote a passage written in this regard by the South African-Dutch philosopher, Vincent Brümmer, shortly before his own death in 2021:

The lives of all people [excluding those that die young], with its limits of birth and death, pass through four phases. The phase between birth and roundabout 21 years is the phase in which a person grows up and attains maturity. The second phase stretches from attained maturity to retirement. This is the phase of one's life during which you work and start building a career and a family. This is the phase of life characterised by what Van Niekerk calls a 'life strategy': a network of shorter- and longer-term ideals or goals that bestow direction to what one does and what you strive for. This life strategy is not unchangeably fixed. It is regularly adapted in view of changed circumstances, obstacles on one's way and (often unforeseen) chances and opportunities that come your way unexpectedly. In this sense a person can, during this phase, be called 'modernist'. The third phase stretches from the time of retirement until you start requiring special care. People in this phase are often called 'yep's', the acronym for 'young elderly people'. Ideally people will be able to tighten loose ends during this

phase, i.e., to complete undertakings that one could not tackle or complete during one's working life. The fourth phase is when one becomes entirely dependent on other people – a phase that leads to one's death. In this phase one lives from day to day. You do no longer aspire to attain short- or long-term ideals. This is the phase that Van Niekerk calls 'postmodern' (Brümmer, in Jones, 2022:29)

This is, to my mind, a prudent and enlightening representation of how to generally make sense of the totality of the lives that most of us lead.

10.11 CONCLUSION

I want to conclude by emphasising two aspects of this general metaphor. The first is that this way of thinking about life as we know it (i.e., not life as significantly prolonged), represents an organismic image of human life – that image which I find particularly helpful. An organism is a life form with a history – a history that typically undergoes the phases identified by Brümmer above. The life that an organism leads does not appear or disappear instantly. It is the outcome of a process – what I would like to call, a history.

Let me quote Alasdair MacIntyre (1981:197) on his enlightening discussion of the nature and scope of the “narrative quest” that we all embody in the process of growing old.

Narrative is not the work of poets, dramatists and novelists reflecting upon events which had no narrative before one was imposed by the singer or the writer; narrative form is neither disguise nor decoration ... It is now becoming clear that we render the actions of others intelligible in this way because action in itself has a basically historical character. It is because we all live out narratives in our lives and because we understand our own lives in terms of the narratives that we live out that the form of the narrative is appropriate for understanding the actions of others. Stories are lived before they are told – except in the case of fiction.

This then brings us, in conclusion, back to the question in the heading of this book chapter: “Significantly increased longevity: Does it make sense”? Considering all the arguments that have been brought forward, and particularly bearing in mind what I argued about the organismic character of human beings and the narrative quest that accompanies all meaningful lives – but also reckoning with the boredom that will in all probability be part and parcel of indefinitely prolonged human lives, my answer to the question is in the negative.

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