

The Tithonus error

The Death of Death. May 2019. Number 122.

Human lifespan could soon pass 100 years thanks to medical tech, says BofA (Bank of America). Title of an article from the [American television channel CNBC](#) of May 8, 2019. The second largest bank in the United States also estimates that this will open a financial market of at least \$600 billion by 2025.

Theme of the month: The myth of Tithonus.



In Greek mythology, [Tithonus](#) is a prince, a human being of great beauty. He is so beautiful that Eos, the goddess of the dawn, abducts him and conceives two sons with him. Eos is a goddess, with endless life, while Tithonus must age and die like a human.

Wishing to keep Tithonus forever, Eos asks Zeus for immortality for her lover. Zeus grants it to him, but deliberately omits or forgets (the versions differ) to grant him eternal youth. Tithonus will then live not an eternal superhuman life, but an endless aging and withering.

The idea that a much longer life is not a benefit, but a curse is often expressed by opponents of medical progress. This is one of the many variations of beliefs according to which visible progress must necessarily have as a "counterweight" disadvantages at least as significant as the advantages. In the Greek tradition, still very much present at the heart of Western thought, this illustrates the idea that obtaining that which is not part of the human condition, but of the gods' - [hubris](#) - is a sin of excess which can be punished with the most severe of sentences.

A longer life, but in poor health: myths and realities

In the natural world, generally speaking, the living beings that live the longest are not the most fragile and decrepit. Whether it is whales, redwoods or bird species such as albatrosses and parrots that can live much longer than most other living things, the healthy lifespan is long.

As far as human beings are concerned, it is certain that the last years of life are generally lived in a poorer state of health than the rest of life. But with the progress in longevity, is this situation getting worse?

Firstly, the longer life is, the later the last years of life in poor health occur and the less they represent a significant part of the total lifespan. The last 3 years of a 90-year life are about 3% of the lifespan. The last 3 years of a 60-year life are about 5% of the lifespan.

Secondly, many of the debilitating diseases and conditions of the past have become rare or almost non-existent today. In the US, France, Belgium and Canada, we hardly see any old people with rheumatism, forced to walk with a cane or bent almost 90 degrees. Men and women no longer die slowly from tuberculosis dragging themselves from one sanatorium to another. The typhoid fever from which we died or which made us idiots [as 19th century French president Patrice de Mac Mahon would have said](#), hardly ever strikes anymore. In general, infectious diseases hardly ever cause disabilities anymore and diseases affecting the cardiovascular or respiratory system as well as well-treated cancers allow a life under better conditions than before.

However, there is one area where increases in life expectancy in poor health are significant, namely neurodegenerative diseases, particularly Alzheimer's disease. Research and healthcare today only help to slow the disease down a little. As the social and healthcare environment improves, affected women and men are living longer, but not healthier lives than before.

Some reasons for the beliefs in an aging process in necessarily poorer and poorer health

The concept of [Quality-adjusted life-year](#) is a fairly subjective one. We are much more demanding today than in the past when it comes to health. In addition, we often tend to imagine "good old days" that never existed. On the other hand we often imagine that technological advances are more harmful than they are (consider how much our ancestors were afraid of electricity or of the first locomotives). All this is positive because we are more attentive to good health than before, but it leads to overestimating the time of life in poor health today compared to the past.

More generally, as today we have no choice, as we cannot interrupt the mechanism that leads to death from aging, it is less difficult psychologically to think that not dying would be worse, that we would suffer "a thousand deaths" from it. We are like [the fox in Aesop's fable](#) who tries to grab beautiful grapes and, when he can't, says to himself "these grapes must be sour".

Until now, for humans (and also for laboratory animals such as mice), it has been impossible to separate, except very temporarily, advanced age and body wear and tear. Stopping aging remains impossible and therefore almost unimaginable. When we manage to imagine it, we only partially succeed; we envisage death from aging as defeated, but not the mechanism of senescence itself.

Finally, there is confusion between the concept of biological aging and the concept of [entropy](#). Many people will say that degradation and aging are inevitable because any dynamic system, living or otherwise, necessarily ends up "degrading". It is true that everything must stop, be exhausted one day, given the concept of entropy, but this relates to timescales that are totally different from the timescale of life. Living species such as redwoods or corals that do not have aging mechanisms do not "run out" through entropy. Nor do they "run out"

like a watch reaching the end of its wound spring or battery.

Indeed, living beings are not "closed" systems. They absorb external substances and this can be done for millennia. Contemporary living beings are not affected by entropy, which will only have consequences in geological timeframes. For millions and even billions of years to come, a de facto unlimited source of energy will counter entropy on our planet. This is the energy of the sun.

An *amortal* life would almost certainly be a life in good health

The concept of amortality is by definition the removal of the aging mechanisms that cause death.

It is theoretically conceivable that, thanks to medical progress, one day we will be able to stop the aging process and prevent deaths, but only for people weakened by age.

It is theoretically conceivable, but in practice very improbable.

If one day we succeed in stopping the mechanisms of aging, the next or concomitant objective of researchers and medical bodies will obviously be to improve the physical and mental situation of the people concerned, to allow rejuvenation. When, in the medical field, we succeed in overcoming a disease (AIDS, cancer...) we also seek complete convalescence and we succeed more and more often, even if today it is still for a limited time.

Such developments are desirable for reasons of quality of life for older people and equal rights between young and old, but also in economic terms. A population that is growing and in poor health would be much more difficult for society to manage than an aging population whose health is improving.

The good news of the month, a personal story: How I will live to be over 57 years old thanks to the medical advances of recent decades

May 8, 2019 would probably have been the last day of the existence of the author of these lines (the main author of this letter) without the efficiency of the emergency systems and the Belgian health system and without the technological advances of recent decades.

I had the "good fortune" to have a heart attack in Brussels, where I live. The ambulance I called came in a few minutes and took me to a [nearby public hospital](#) where surgeons saved my life with a quintuple coronary bypass operation lasting more than five hours. And less than twenty days later, thanks to the equally brilliant post-operative care and the luck I have to have a good

state of "remaining" health, I can have normal social activities, walk for miles... and write this letter.

I confess that in the ambulance that was taking me to my survival, I didn't ask myself if it was moral to benefit from medical progress when a person living far from a big city, in Africa or elsewhere, would most likely have died (or even anyone who simply couldn't reach the emergency services). Longevitists are sometimes accused of being selfish. In that sense, I was selfish. For the future, which continues for me after May 8, as in the past, one of my concerns remains, however, that longevity should concern all those who want it, as quickly as possible.

In the ambulance and in the hospital, I told myself again and again to what an extent today was the best time in human history to live a healthier life. I have also seen how remarkable healthcare, especially emergency care, is. I also told myself that today, even more than yesterday, it is urgent to continue research, to invest more money in the fight against aging so that more and more people can escape a "natural" death. It is so much more useful than spending time and energy on administrative issues, prestige, literally or metaphorically cosmetic issues or in conflicts over microscopic comparisons (knowing that I am certainly not immune to these "energy wastages", even after my adventure to the edges of life!).

I hope that in the near future, what has been possible for me will become possible for everyone, regardless of age and of where people live. I am convinced that if issues of health, longevity and more broadly everything that makes humans more resilient, became the glaring priority of this beginning of the 21st century, then progress could be dazzling.

For more information:

See: heales.org, sens.org, longevityalliance.org and longecity.org

Photo : Eos (Dawn) pursuing Tithonus