



"Fountain of Youth". Never Ending Story

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*"Turn him to any cause of policy,
The Gordian Knot of it he will unloose,
Familiar as his garter"*

Shakespeare, Henry V, Act 1 Scene 1. 45–47

I remember the words of my geriatric's teacher; whenever we had a case where we could not establish the diagnosis. He'd always say: "Tear up medical history and start from beginning."

Today I wonder whether we should tear up our knowledge in the field of ageing and start from the beginning.

Obviously, we need to change the way we look at longevity and old age in general. As long as humans have been around, we attempted to find a "cure" for old age, some kind of fountain of youth, and although we have made certain steps forward, our most meaningful accomplishments did not come from treating symptoms but rather from preventing the disease [1].

The long-lived have, in other words, evaded the effects of the biological clock of nature. The ratio between the cost and the benefit is present here, too, because the preservation of the functionality of the elderly organism would require more energy than programmed as its optimum [2,3]. The real question is, therefore, not why do we grow old, but why do we live so long [4]. Old age is more a problem of civilization than of biology.

The efforts of generations of gerontologists were not futile after all. The ageing rate has not changed for centuries, but the quality of living significantly has. On the other hand, research of old-age changes contribute to our knowledge about many diseases, especially malignant ones.

For decades of my "geriatric life" that was my personal approach to the problem of longevity.

The recent article in "NATURE" from Vijg and coauthors has renovated my believing [5].

Authors finish the article with the following suggestion: "To further extend human lifespan beyond the limits set by these longevity-assurance systems would require interventions beyond improving health span, some of which are currently under investigation. Although there is no scientific reason why such efforts could not be successful, the possibility is essentially constrained by the myriad of genetic variants that collectively determine species-specific lifespan".

Life has existed on this planet long before we, the human race, have become aware of it.

The main law of nature is maintaining species survival. So there are good reasons to think that we ought to focus on the preservation of the species not the individual.

According to human experience, it is quite possible that there is a species or a variety of species that already have this treat. In other words, species, or varieties of species who do not have to starve themselves, or postpone reproduction or seek parts of river with less predators. Take, for example, two close species: apes and humans. Humans live twice as long as the apes, regardless of similarities in their genetic code. On the other hand, humans have twice as good capacity to repair their DNA lesions.

We are certain that we do not need to start by saying that "aging is not an illness." However, we are not so certain that we do not need to add, "Aging is a problem for the human kind only." Overall, the cure for ageing or reaching immortality is simply not realistic.

The critics might argue that by prolonging life we interfere with the course of nature in an unacceptable manner. To some extent, this is a reasonable concern [6].

In the automobile world, the humans are fast care for the short race (dragsters) rather than slow care for long distance (classic Volkswagen), but we are confident that we are the second one. (Jay Olshansky mentioned at presentation).

Even scientists found the temptation hard to resist. More or less; but the majority of scientists are looking for a unique principle in a complex and interdependent system – or simply: "one cure for the old age".

The ageing is inevitable life process. The births, existences and deaths are the normal cyclical acts of the nature. Only in human species the lifespan has been prolonged through the evolution. This is the result of improved mental capacities and transformed survival instinct to strife for life prolongation. Achieving longevity understands the struggle against aging. The magic, medicine and religion have their places in this quest.

On the other hand, there is no such thing as one and unique cure for any one disease. Primarily and basically, the ageing is not a disease, so the basic principle is wrong. Take, for example, cancer or cardio-vascular diseases. Should we look for one-size-fits-all cure? There are numerous different medicines for different diseases within the frame of cardio-vascular and malignant diseases.

It appears that the only thing unchanged is a man's desire to find the Fountain of Youth [7].

If you just look at a brief analysis, (whether it's in Gerontology possible?), we will see that much of what we accept as the rules in ageing and ways of it's postpone in favor of said that nature is interested in maintaining the species, not individuals.

It seems to me, in addition to many theories of ageing, we should be focusing on: "how we age," because on question "why we age" we don't have influence. My personal preference is to make the greatest

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chance of success, when you have to decide how to postpone ageing, to choice stabilization of genetic material as method (at the very beginning of life), because long-lived individuals who have evaded the law and nature of evolution, paradoxically, have become privileged. They have higher percent of stable DNA material.

Phenotype effect on ageing and knowledge about disease prevention and healthy living are permanent and accepted.

Finally, I am reminded of an often-stated claim that "If you have a lot of different drugs for one disease that mean that none of this drug is really efficient."

In the past decades I was a witness, sometime also included in trials of many different anti-ageing (is there such things?) drugs. Honestly, I can't say that any of these drugs have survived as accepted treatment more than a couple of years. They are still in the market, but lot of them as therapy for some other health problem.

But are you sure that some people still do not use bat wings as a therapy against ageing?

If we look at ageing as disorder that we can cure, that will be something as to find the key of immortality. Immortality is in the field of ethics, literature, generally art and religion. Ageing is chapter in the book: "Law of the nature". And as every law we can make him much better.

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