

JUST A NUMBER?

MY PERSONAL SECRET

It was a warm, sunny day in May 2015. That was the day I *reached* the age of sixty. Or should I say that was the day I *attained* the age of sixty? Or is it better to say that I *turned* sixty years old that day? Or just simply admit that I was now sixty, entering my sixty-first year? What am I, and who am I? Let me reflect on that for a moment ...

Well, surely I did not feel 60 anymore *that* day than I felt the day before. Actually, let me share my personal secret with you. **For the last twenty years I have never felt older than 45.** When I was a teenager, I sometimes behaved the other way round, as if I were 45 – a mature, wise, experienced, trustworthy man. At that age I wanted to be treated, respected and accepted as if I were much older.

My father also used to say, right up until his death in 1996, that he felt much younger than what his birth certificate from 1909 showed. Another close friend, who was 78 and had cancer, told me something similar just a few days before his death. On good days he felt no older than 50, but on bad days he felt as if he were already dead.

Apparently, the manner in which we experience our age is dependent on the health of our body and mind. In any case, what do these age-related numbers mean? Is age just

a linear sequence of numbers that begins at zero when we are born and ends when we die?

Age, no doubt, touches all areas of our thoughts and actions, and much more. Indeed, the word 'age' encompasses the period from the dawn of time, with the Big Bang 14 billion years ago, up until today. Everything has an age. Age has an enormous significance for us human beings. How we consider and handle the question of age is based, not least, on our personal psychological interpretations. In this presentation, however, I must stay focused on my own research field.

I am a gerontologist, and I study age and ageing. The word 'gerontology' comes from the Greek words *geron*, meaning 'old person', and *logia*, meaning 'the study of'. More precisely, I am a biogerontologist, so I do research on the biological mechanisms of ageing, and how and why our bodies become old.

We are born, we grow, we develop, mature, reproduce, become old, and eventually we die. This is the story of all living systems in one way or another. All biological systems – cells, tissues, organs, organisms – die, sooner or later. Therefore, first and foremost, I would think about age as a biological concept that marks our birth and death.

As a scientist I want to find out whether there is any specific stage in life when we begin to age. That is why, if not constantly then at least daily, I ponder several questions. What is it that makes us old? Does our age determine how long we will live? Could we live forever? Do we wish to live

forever? Should we live forever? These questions surely give pause and call upon reflection.

THE RIGHT AGE TO DIE

About twenty years ago, Hannibal, the eldest son of my brother, died quite suddenly. He was 17. My father, 80 at that time, was very sad and was grieving, just like the rest of the family. From the depths of his sorrow he said: “The death of this young man is not right. If I had died, that would have been the right age, but not him ...”

The right age to die? Is there a ‘right’ age to die?

This made me wonder, and made me think, and ponder some more. The question of whether there is a right age to die also opened up new perspectives in my research. I started to think about the very word ‘lifespan’. What does it really mean? Up to what age could we live? Up to what age should we live? Up to what age would I like to live? And why?

When I look at the life around me – potted plants in my window, fluttering butterflies in the garden, my loyal cocker spaniel Kutta – it is easy to see that lifespan is limited. **Sooner or later everyone, and everything, will die.**

That’s how it has been since life started on our planet about 3.8 billion years ago. Give or take. We don’t know exactly when or how. We have no first-hand account or witness to that, since no individual has been living continuously from that time. Hundreds of thousands of different species and life forms, for example dinosaurs, have lived and disappeared.

Our own species, *Homo sapiens*, is less than half a million years old, but no individual human being has survived for that long. Far from it. At best, some of us can hope to survive some ten or twelve decades.

Perhaps one day our species will also die out. We don't know how long the lifespan of our species is. Or, at a more personal level, how much time I have as Suresh Rattan. I cannot predict either of these things, and I am a biogerontologist. A bit embarrassing, isn't it?

MADAME CALMENT'S RECORD

122 years, 5 months and 14 days. I don't know whether I will live to this age. But what I do know is that this is the documented record for the maximum human lifespan, so far.

The holder of this spectacular record is Madame Jeanne Louise Calment. She lived from 21 February 1875 to 4 August 1997, in the city of Arles in France. Although other claims have been made of much longer lifespans, for example 150 or 175 years, my gerontologist colleagues have always rejected such claims as unproven, and most probably fake.

Of course, 122 years is no age at all compared with what Methuselah supposedly achieved. According to the Old Testament, Methuselah lived to the ripe old age of 969. Still, the Bible is not the only religious text in which a description of people living to hundreds or even thousands of years can be found. Almost all cultures have myths that tell similar tales of extremely long lives. Nevertheless, most

scientists regard such claims as just that: myths, fanciful tales, the stuff of imagination.

The maximum lifespan of a species usually refers to data from the zoological records on how long any one individual of that species has survived so far. It also tells us that even though only one individual has reached that age so far, it is possible, in principle, for all other members of that species to also reach or potentially exceed that limit.

We do not know when the human maximum lifespan record, held by Madame Calment, will be broken. **We cannot predict exactly how long any person will live.** Even after a terrible car accident or a terminal cancer diagnosis, there is no sure way to tell at what age or at what point in time the individual's death will occur. Nobody could predict that 4 August 1997 would be the last day of Madame Calment's life. Did she herself think that was the right time for her to die?

The maximum lifespan for humans is not a permanent, fixed limit. Sooner or later, Madame Calment's record will be broken. I know it will. After all, I am a biogerontologist!

Somehow we find it easier to bear the death of a person like Madame Calment, who died at an advanced age. On the other hand, it is extremely traumatic and difficult to face the death of a small child or a young person. That is how it was for my father when he mourned the death of his grandson of 17. That was definitely not the right time for Hannibal to die.

We also have other ways of measuring lifespan. The average lifespan of a population, for instance. Governments depend on this type of lifespan measurement to make vari-

ous social-policy decisions, such as setting the age of retirement. Statisticians and demographers also make calculations and qualified guesses about this so-called future life expectancy. Such projections influence the government's socio-political planning to optimise the use of available resources. However, such estimates about future average lifespan do not rule out the possibility that an individual may die much earlier, or much later, than the theoretical average.

There is a very interesting and true story about taking life expectancy at face value. A story with dire consequences. In 1955, Madame Calment had already lived ten years longer than the expected lifespan of French women at that time. Perhaps that is why, around that time, her attorney offered to buy her house through the French *viager* system.

The *viager* system of buying and selling property follows a set of simple but somewhat peculiar rules. Basically, the seller agrees to sell the property at about 30% of its current market value. The seller then receives an agreed sum of money every month as an annuity or pension (the *rente viagère*) for rest of their life, along with retaining the right of usage (*droit d'usage*) over the property.

The attorney, who was considering Madame Calment's already advanced age of 80 and the reliability of the statistical predictions, thought he had made a wonderful bargain. As it turned out, the property deal turned into a 42-year-long financial nightmare. Both the attorney and his son ended up dying before Madame Calment did, and paying far more than the actual price of the house.