

## Redefining Aging: Physiological Evolution

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One of the prime credentials of our time on earth is our first ability to know what a whole human life can look like. We are the first ever to be able to answer the Oracle's challenge "hold this precept most sacred, 'know thyself'."

We have done a shabby job responding to this commandment, because we had no handle on what the third segment of life was all about. We have immense encyclopedias full of what youth and midlife represent. The last segment was terra incognita. You can't know a ball game if you leave after the third quarter. You can't grasp a mystery thriller after the fifth chapter.

One of the large merit badges we can claim with confidence is that we now have a firm handle on what aging is, its extent and content. It is startling to identify that mankind's entire history has had no insight into when the birth certificate expires. Madame Calment helps give us the answer. Ken Manton et al and others help.

We now know the timeline of life, but more importantly, we know its shaping context, quantity and quality cohere. Importantly, the science of aging, previously obscure, is being rapidly revealed. It is an incredibly rich domain in which numerous disciplines participate.

My current take using present information, is that biologically defined aging is "wear and tear minus repair." The wear and tear component is actually the physics of life- the entropy of the physical system. We wear out as do all things in the universe. But thankfully, we possess powerful counter entropic capacity, evolutionarily guided by millions of years of trial and error. "Descent with modification" was Darwin's gift to us. The modification element is repair.