

Interview with Daniel Perry Evolution of Aging

KYLE JENSEN: Welcome to SAGE Crossroads, the premier online forum in issues of human aging. These podcasts feature lively discussion with the experts on the ethical, political, economic, scientific, and societal implications of aging related science. Thank you for listening.

I'm speaking now with Mr. Daniel Perry. Mr. Perry is the executive director of the non-profit organization the Alliance for Aging Research.

Mr. Perry, what are the prominent theories of aging?

DANIEL PERRY: Well just recently, after Labor Day this year, the National Institute of Aging hosted a three day retreat and summit conference among experts in the biology of aging that was held just outside of Washington, DC, and it's relevant to your question because looking at what had been considered the so called old theories of aging were held up against what we consider important to study and to test to unlock the secrets of aging today, the bottom line was that the old theories are the new theories. There is still interest in things such as cell metabolism and how that can lead to the production of oxygen free radicals and the damage that is done to the energy producing parts of the cell, the mitochondria, or to the DNA itself. All of these things are believed to contribute to aging. Also among the so called old theories, telomere shorting and the degree to which the cell's ability to divide X number of times gets compromised over time. Also, the deregulation of proteins and inflammatory responses that go into gear with aging. All of these are considered old theories of aging, but they are just as relevant today. What is new as I discerned it listening to these experts are a whole host of new strategies, new paradigms, new ways to test those theories, and increasingly to integrate them into a systems biology. Going from looking at individual cells in a dish to increasingly looking at how these things interact in whole organisms, whole intact organisms for study, all the way from invertebrates to primates, that seems to me to be the big shift.

KYLE JENSEN: Now if any of these theories were to be in true in one way or another, how would they impact aging research in this country?

DANIEL PERRY: Well, it's important to develop theories of aging and to test them. That is the essence of the scientific method. You start with a hypothesis, you test it, you go back to basics if the tests don't prove that the hypothesis is everything. It's extremely important that we understand the fundamental biology that underlies aging, especially in humans, but there is so much to learn from other life forms as well. It's important because we are experiencing longevity and survival in our population virtually unprecedented in our human history, and the consequences of that, while we all want to live longer; we also want to live healthier as well. Certainly an article of faith among those that gathered recently is our ability to extend the health span of human beings to stretch out the number of days in good health at middle life, if you will and to reduce the time to a minimum in one's life when we are compromised and reliant on artificial life

support. These are fundamental, essential questions that spill over to economic planning, social planning, and come down to the family level.

KYLE JENSEN: Lastly, the audience of Sage Crossroads is made up of scientists, policy makers, and curious consumers. If there was one last statement you would like to make to them about the evolution of aging, what would it be?

DANIEL PERRY: Well, I think the National Institutes on Aging, which is part of the National Institutes of Health, and in particular, the head of their biology of aging program Dr. Felipe Sierra, deserve a huge amount of credit for trying to bring together the leading experts from around the country to really begin to build a sense of consensus and to really begin to build a plan for what we need to study next and how it can lead to healthier aging across the population. I can't imagine anything that's more important to the United States, to Europe, to most of the developed world in the 21st century than to understand aging as a means to delay physiological and functional decline and to enhance the quality of life as long as possible for more people.

KYLE JENSEN: Thank you. On behalf of SAGE Crossroads, I'm Kyle Jensen.