

## **CASE 12: The New War on Aging**

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Even as global life expectancy continues to climb, many on the forefront of biomedical technology research are still not satisfied with the current numbers. One company, Calico (short for California Life Company), aims to take a new focus on health care for the aging by tackling death and the aging process head-on. The company, owned and founded by Google, is in its fledgling stages and hasn't indicated what its specific research strategies or products will be, but Google CEO, Larry Page, has made it clear that he is not looking to continue in the vein of traditional approaches to health care for the aging. Rather than focus on diseases and other contributors to lower quality of life in old age, Calico wants to focus on extending the human life span and enabling a more active life for humans until their time comes.

Google engineering director and futurist, Ray Kurzweil believes that his work on computer technology is a step toward realizing a nanotechnology revolution. Kurzweil is vocal about his own efforts to prolong his life long enough to benefit from life-extending biotechnologies that he believes we will see in the next ten to twenty years.

“You and I are walking around with outdated software running in our bodies, which evolved in a very different era,” Kurzweil said. “We each have a fat insulin receptor gene that says, ‘Hold on to every calorie.’ That was a very good idea 10,000 years ago, when you worked all day to get a few calories; there were no refrigerators, so you stored them in your fat cells. I would like to tell my fat insulin receptor gene, ‘You don’t need to do that anymore.’”

Kurzweil is not just dreaming up possibilities. A lab mice experiment at the Joslin Diabetes Center, was actually able to switch off the fat insulin receptor gene in mice. These mice would eat yet stay slim. They weren't susceptible to diabetes or heart disease and lived 20% longer. Kurzweil has predicted that by the 2020's humans will be able to eat as much junk food as they like because nanotechnology will supplement their nutritional needs and control fat storage.

Ethicist Daniel Callahan is not so optimistic about Calico's mission. In a NY Times op-ed piece, he wonders if Calico has sufficiently considered the implications of these kinds of technological and medical advances.

“The fundamental difficulty here is that we cannot proceed in the usual way with this medical research, taking small steps, seeing the results and then, if they are positive, moving further,” Callahan said. “It will take decades for the changes in length of life to play out to allow assessment of their benefits and harms. By then it may be too late to reverse the damage. One likelihood, even in just a few years, is that older people who stay longer in the work force, as many are now forced to do, will close out opportunities for younger workers coming in.”

### Questions:

1. If Calico succeeds in developing products that radically extend the lives of human beings, are there any legitimate moral or social concerns that suggest we shouldn't be seeking longer life spans? If there are no such concerns, what are the advantages of extending the human life span?

2. If medical companies, like Calico, seek not merely to alleviate the effects of illness and aging but to supplement and enhance the genomic structure of human beings, does this somehow go beyond the realm of medicine and commit us to transhumanism? Does a commitment to transhumanism cause any moral problems for traditional medical practice?

3. Roughly 80% of medical expenditures in the US are the result of caring for 10% of the population, largely the elderly. Should this economic reality raise any ethical concerns for future developments at Calico?

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