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## Here's More Bad News About Death

February 9, 2012, 2:37 pm By Tom Bartlett



The older you get, the more likely you are to die. You probably knew that. What you may not know is that the mathematics of mortality were calculated in 1825 by a self-taught British actuary named Benjamin Gompertz, who found that your odds of dying double every eight years. This grim fact now carries his name (the Gompertz Law) and is used by researchers who study aging and by insurance companies when they're figuring out if you're a good bet.

In 1939 a study led by Major Greenwood, a well-known statistician and epidemiologist, noted a small but intriguing exception to the Gompertz Law. When we get very old—say, past 85—our odds of dying stop increasing at the same exponential rate. It's not that the odds go down; it's still better, death-wise, to be 21 than 91. But once you reach a later stage of life, the rate plateaus, an effect known as mortality deceleration, which makes it sound as if we've been speeding toward oblivion our entire lives and then, toward the end, we ease our foot off the gas pedal.

Mortality deceleration is a concept you'll find mentioned throughout the research literature, in textbooks, on Wikipedia. Along with the actuarial evidence, there is support in the animal kingdom as well: Mortality deceleration has been observed in yeast, nematodes, and fruit flies. Multiple theories exist to explain mortality deceleration in people. A biological mechanism might be at work, or maybe the most senior senior citizens aren't taking as many risks as the less aged. Centenarians don't do a lot of kiteboarding.

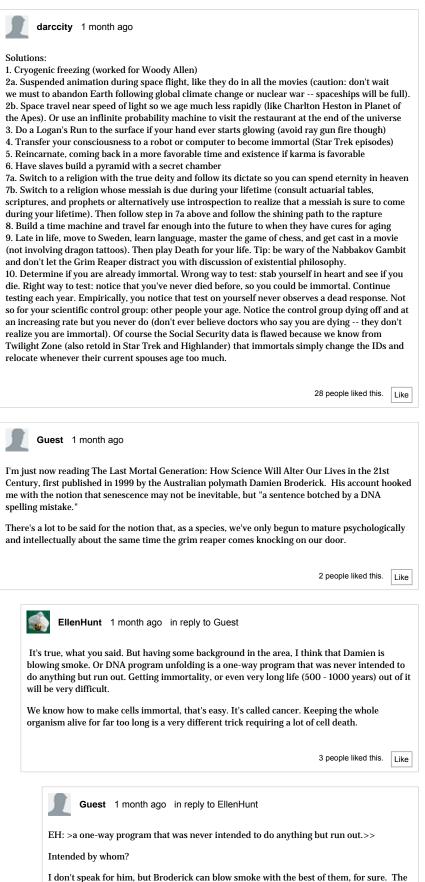
A new paper, though, finds that mortality deceleration for human beings is a myth. The husband-and-wife team of Leonid Gavrilov and <u>Natalia Gavrilova</u>, at the University of Chicago's Center on Aging, have re-crunched the numbers, examined the assumptions, and found that it's not the case. The mistake was likely to have been caused by mixing sets of disparate data (combining, say, groups of people with different mortality rates) along with the tendency to exaggerate the ages of really old people. They relied on only documented ages of deceased people, using the Social Security Administration's Death Master File, a resource that lists longevity information for nearly everyone who has passed away since 1980, and is housed, I imagine, in an enormous crypt flanked by gargoyles.

Once they filtered out the less-reliable statistics, mortality deceleration went away or became negligible. In short, the Gompertz Law still applies. Death isn't tarrying. Instead it's coming ever more rapidly.

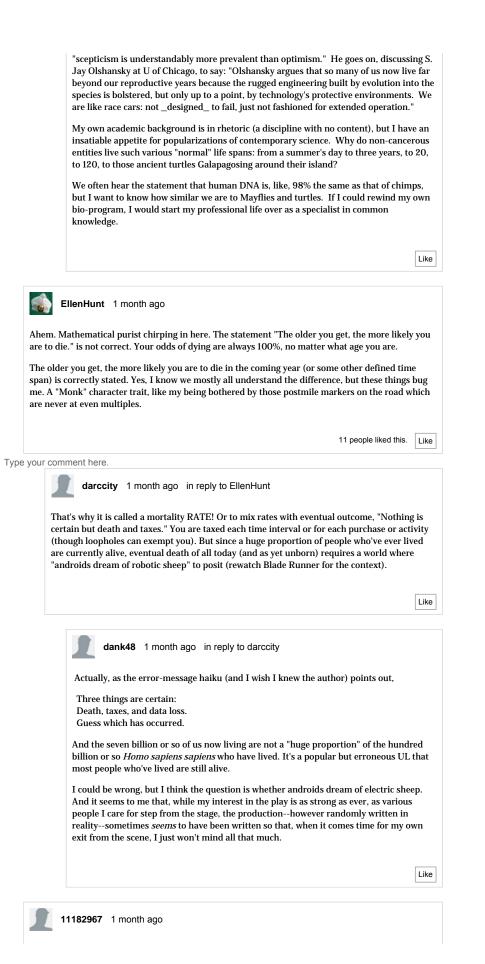
Unless you're a nematode.

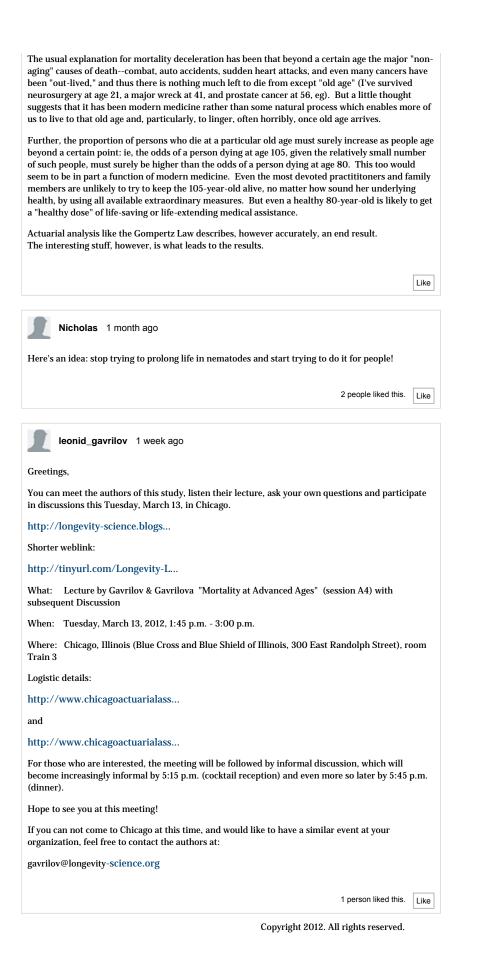
(The paper, "Mortality Measurement at Advanced Ages: A Study of the Social Security Administration Death Master File," was published in the *North American Actuarial Journal* and can be found here. Here's the author's blog with an interesting Q&A about the study. Here's a great post on the Gompertz Law. The image of the grim reaper comes from this Web site, which will teach you how to draw it if you're looking to waste time before your certain demise.) This entry was posted in life sciences, social and behavioral sciences. Bookmark the permalink.

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profdrsoandso 1 month ago	
Death, where is thy sting?	
Owwww oh, right. There it is.	
9 people liked this. Like	
victorI 1 month ago	
"Unless you're a nematode"	
or Turritopsis nutricula. (see CHE May 2, 2010 article by Nina Ayoub)	
Like	
<b>11272784</b> 1 month ago	
The Nematodeswasn't that a psychedelic band around 1969?	
6 people liked this. Like	
Valentino Martinez 1 month ago	
When you get past 60 years of age, as I have, the drama of the coming end seems to find its way to the heart of the matterthat that remote thought that the end of me is really quite near.	
Not only is it a sobering thought it is a motivating thought that what always mattered to me matters even more now.	
even more now.	
16 people liked this. Like	
Socratease2 1 month ago	
That idea of "death deacceleration" may have been an unchallenged mathematical/statistical finding for a while but seems that a 5 year old could have told you that sounds wrong. It takes really smart people to act that confused.	
2 people liked this. Like	



I don't speak for him, but Broderick can blow smoke with the best of them, for sure. The first sentence of his now 13-year-old text is a quote (epigraph) by Roger Gosden: "No one but a crank would say that a cure for aging is just around the corner." And elsewhere:





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