



Is Living Longer Worth It?

By Ronald Bailey, Reason Magazine

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CHICAGO -- In advance of the World Transhumanist Society's annual confab, Transvision 2007, the Institute for Ethics and Emerging Technologies (IEET) held a pre-conference meeting in a non-descript ballroom at the Fairmont Hotel. The room was packed with 50 or so people interested in the issue of securing the "longevity dividend." Not everyone in the audience would call themselves "transhumanists" but all were interested in figuring out how to sell longer lives to the public. This was not a crowd of wild-eyed utopians. The audience was diverse -- about one third women and two-thirds men, and ranged from doctors, professors, and economists to people who had lived in alternative communities and even a few high school students. One might think that longer, healthier lives should be an easy sell, but, in fact, there are people who believe that dramatically extending human lives would be a bad idea.

I attended the IEET conference as a speaker, to give a talk on the political economy of the longevity dividend. What is the longevity dividend? It's a way of rebranding the quest for extending human lives in a politically palatable way. The idea behind the longevity dividend was expressed in an article in *The Scientist* which argued that research should be directly targeted at slowing the aging process by seven years. As University of Illinois-Chicago demographer Jay Olshansky put it at the conference: It is a new paradigm for health promotion and disease prevention in the 21st century. Olshansky, one of the co-authors of the article in *The Scientist* unveiling the campaign to push for the longevity dividend, argues that slowing the aging process by seven years would mean that age-related diseases-cancer, cardiovascular disease, Alzheimer's-would be cut in half at every age. "If we succeed in delaying aging, the bonuses will be an extension of healthy life and a drastic reduction in health care costs," said Olshansky.

Olshansky argues that the old paradigm of directly targeting diseases is about to run out of steam. Even if all cancer, all heart disease and all diabetes were eliminated, it would add only 3 more years to average life expectancy in the United States. So if researchers want to achieve big gains in lifespan and healthspan they have to go after the aging process itself. For adults the doubling time for risk of death is seven years. If you slow aging by seven years, you cut the risk of death at any age in half, and cut the risk everything else that goes wrong with the body in half too. The idea is not to make people older longer, but to make them younger longer. Not being libertarians, Olshansky and other advocates for the longevity dividend want to reprogram \$3 billion in federal biomedical research to target aging itself.

At the conference, David Meltzer, a medical economist from the University of Chicago, warned that the longevity dividend could have downsides too. For example, one should consider what follow on costs may flow any particular intervention. For example, someone is saved from a heart attack, he or she may now

live long enough to get cancer which could cost more to treat. In addition, Meltzer noted that most analyses of the benefits of medical interventions measure only future medical costs. But that fails to account for total costs by including future consumption -- food, clothing, housing -- in the calculations as well.

Meltzer also argued that quality of life must be included in the calculations of net benefits and costs stemming from medical interventions. For example, Meltzer showed various interventions that were cost-effective, e.g., influenza vaccinations, and treating 40-55 year-old men for high cholesterol provided more benefits than costs. However, treating a 75 year-old with late-stage colon cancer does not -- their quality of life is terrible and the very costly treatment will likely add only few months of extra life. Meltzer was not amused by my comment that when you take into account all of the money spent on health care, that the cheapest patient is a dead patient. In the end, after all of his cautions, Meltzer acknowledged that most current health interventions that increase life expectancy are worthwhile in terms of medical cost effectiveness.

My own talk looked at research done by two University of Chicago economists, Kevin Murphy and Robert Topel, who tried to put a dollar figure on the value of health and longevity. I began by pointing out that the quest for longer healthier lives has some formidable opponents, including Johns Hopkins University professor and author of *Our Posthuman Future*, Francis Fukuyama, bioethicist Daniel Callahan, and former chairman of President Bush's Council on Bioethics, Leon Kass. Opposition to slowing the approach of the grim reaper also got a hearing the mainstream with *The Atlantic Monthly's* 2005 article decrying, "The Coming Death Shortage." Of course, they are wrong.

Next, I noted that Yale economist William Nordhaus calculates that increases in longevity in the West account for 40 percent of the growth in gross national product. Why? Not only do people work longer, but they work smarter -- living long allows for the accumulation of human capital. I then discussed Murphy and Topel's work on the value of health and longevity which shows that during the 20th century, life expectancy at birth for a representative American increased by roughly 30 years. In 1900, nearly 18 percent of males born in the United States died before their first birthday -- today, it isn't until age 62 that cumulative mortality reaches 18 percent. To make a long story short, Murphy and Topel conclude that in the United States, "Between 1970 and 2000 increased longevity yielded a 'gross' social value of \$95 trillion, while the capitalized value of medical expenditures grew by \$34 billion, leaving a net gain of \$61 trillion." In other words, for every dollar spent on health care since 1970, Americans gained two dollars in benefits.

Transhumanist George Dvorsky, one of the honchos responsible for the Betterhumans portal, did a quick run through of the objections to attempting to boost healthy human life expectancy, including the appeal to nature (death is natural therefore good); undesirable psychological consequences (long-lived people would be bored); and undesirable social consequences (nursing home world). If you want at thorough debunking of these and other objections to life extension, may I suggest that you read my book *Liberation Biology*?

Finally, theoretical biogerontologist Aubrey de Grey, critiqued the idea of the longevity dividend from the point of view of someone who is pushing for a more

comprehensive research attack on aging itself. De Grey's new book, *Ending Aging: The Rejuvenation Breakthroughs that Could Reverse Human Aging in Our Lifetime* is out in September. De Grey said, "I am pessimistic about the longevity dividend, but I strongly support it." Why pessimistic? First, he is not pessimistic about the prospects of increasing life expectancy. But De Grey is pessimistic about the idea that the way the campaigners for the longevity dividend want to pursue it will result in reduced medical costs. Why? Because he pointed out that American life expectancy has already increased by about seven years since 1960 and medical costs have obviously not gone down. Inherent in the idea of the longevity dividend is the notion of compressed mortality, that is, the period of decrepitude at the end of life will be shortened. De Grey argues that this not biologically plausible. Medical interventions can reduce the risk of death and disability at various ages, but eventually, frailty will come -- it will just come later. As Murphy and Topel note, American men are about 6 years "younger" in 2000 than they were in 1970-a 55 year old in 2000 is equivalent to a 49 year old from 1970. Frailty may be unavoidable, but pushing it off for as long as possible is still a great idea.

Instead of pursuing the longevity dividend research agenda, De Grey wants to focus on research that would lead to what he calls Longevity Escape Velocity (LEV). The idea behind LEV is that rejuvenation interventions would repair the damage that aging produces in a person enabling them to live another 30 years. Then further research would develop better interventions that would repair the damage that occurs during that 30 year period and so forth. This series of anti-aging interventions would push death off indefinitely. De Grey claims, "The first 1000-year old is probably less than 20 years younger than the first 150-year old." De Grey believes that most people are irrational about aging. He thinks they were irrational about it in the past for good psychological reasons. "Making your peace with aging was a way to make the most of your miserably short lives and not be preoccupied with death," said De Grey. While he supports the idea of using the longevity dividend to attract the attention of policymakers and potential funders, De Grey, argues that ultimately, "mealy-mouthed messaging will not work on the public."

Ronald Bailey is Reason Magazine's science correspondent. His new book, Liberation Biology: A Moral and Scientific Defense of the Biotech Revolution will be published in early 2005.

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