

2nd Internatational

Arakawa + Gins Conference

Toward Reversible Destiny

1) The way things are

consequence of biological evolution, the way human life has turned out through the natural selection of variants appearing spontaneously among our human populations, without planning—by chance

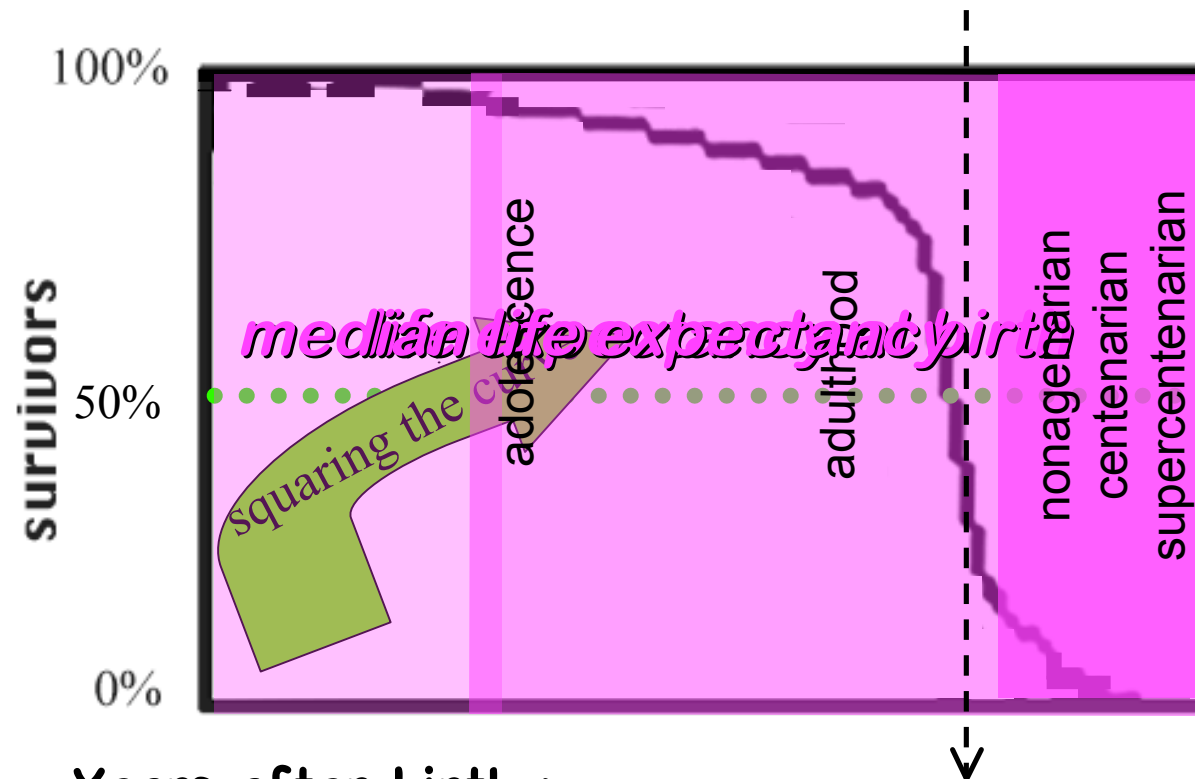
By Stanley Shostak

5/28/09

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I. Extending Life

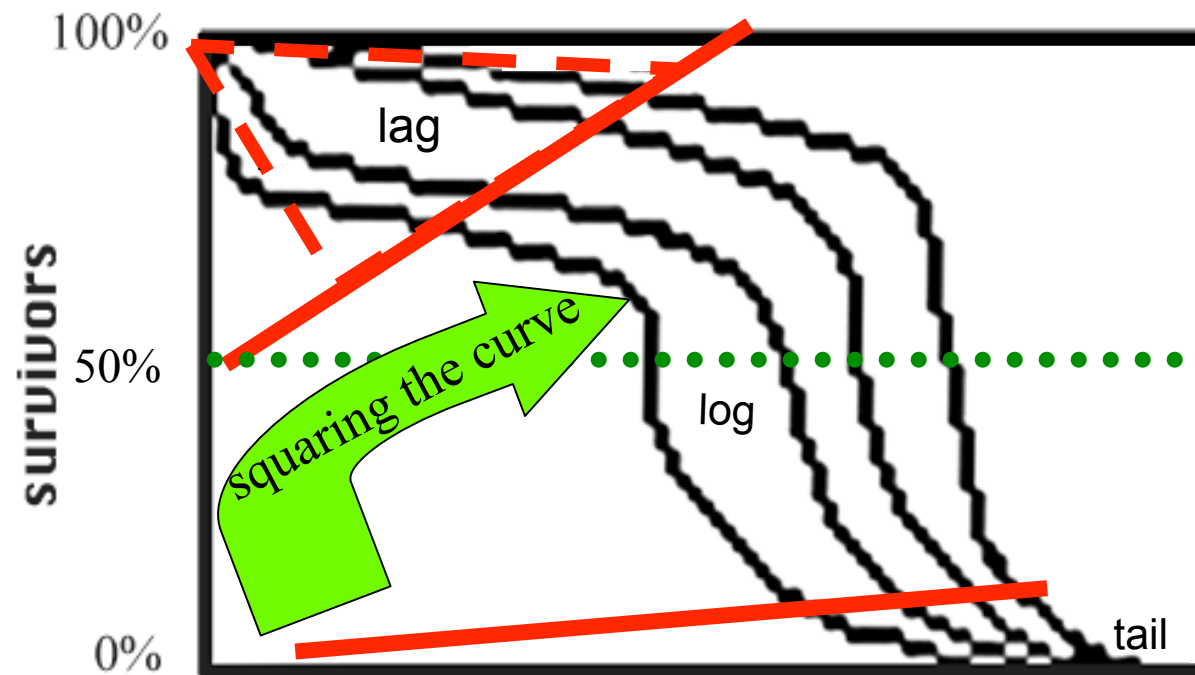
Life expectancy: survivors/years



Years after birth >
life expectancy at birth

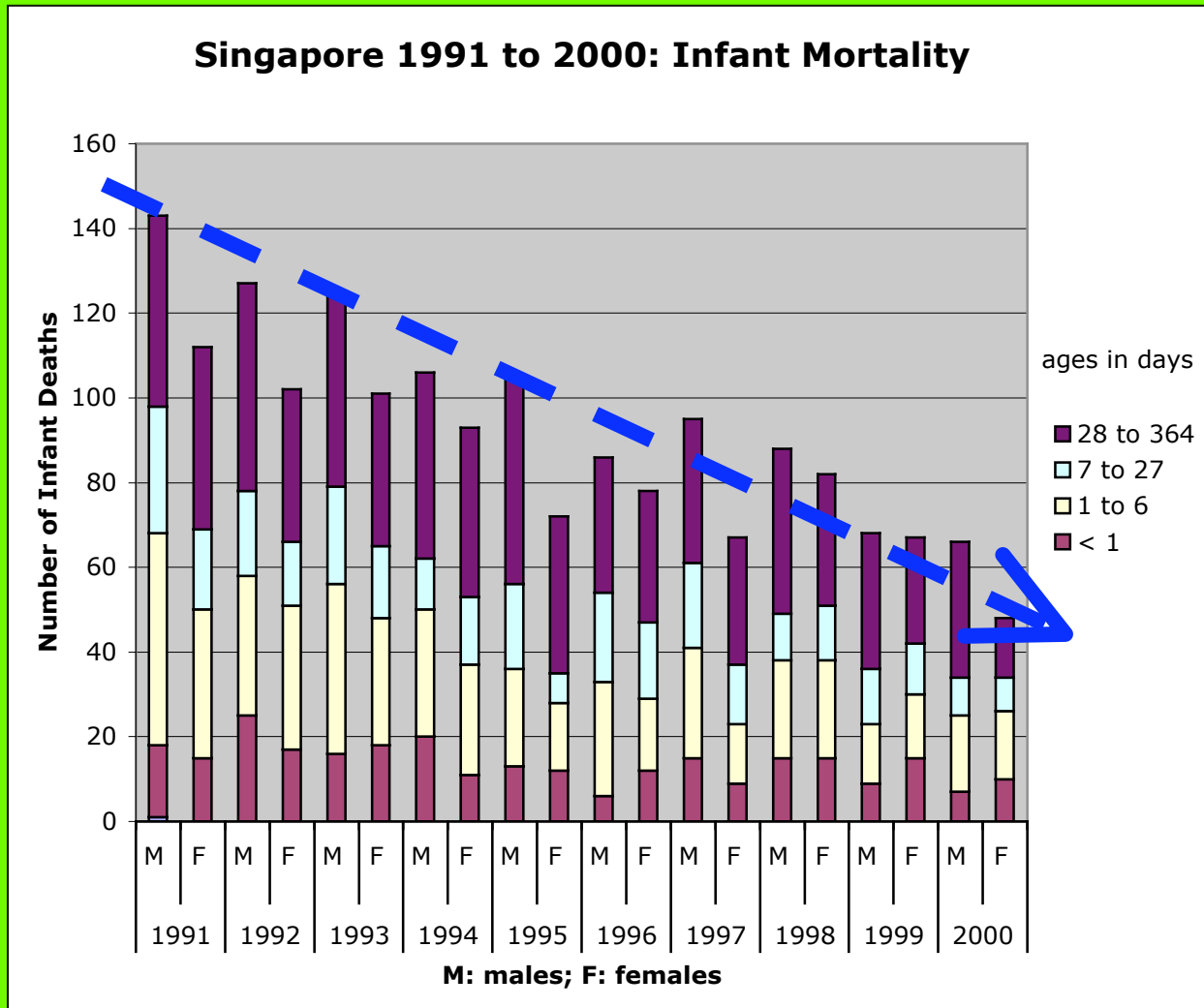
I. Extending Life

Life expectancy: survivors/years



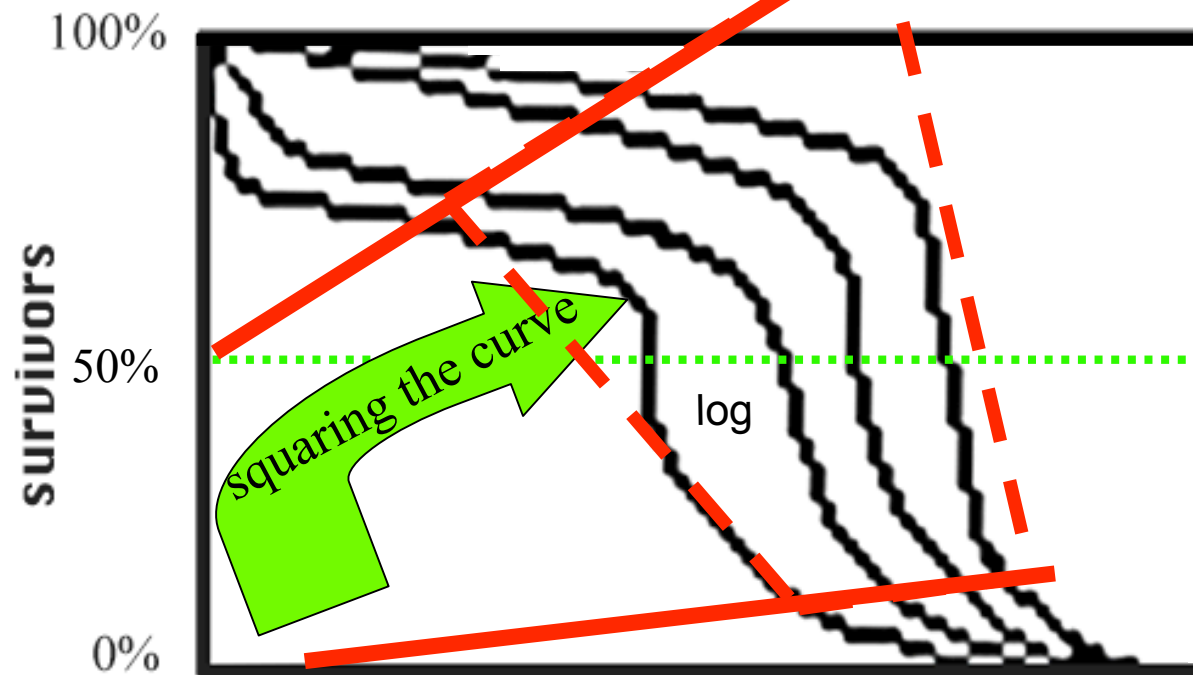
Years after birth >
life expectancy at birth 24 42 47 75
in 1754 1850 1900 1988

I. Extending Life



I. Extending Life

Life expectancy: survivors/years



Years after birth >
life expectancy at birth

| Years after birth | 24 | 42 | 47 | 75 |
|-------------------|------|------|------|------|
| in | 1754 | 1850 | 1900 | 1988 |

I. Extending Life

***Life expectancy
at birth in 2000***

***Life expectancy
at birth in 2100***

if increase continues at
present rate

***Life expectancy
at birth in 2200***

if major killer diseases
cured or prevented

| | | | |
|-------------|----|-----|-----|
| White women | 80 | 102 | 117 |
| Black women | 75 | 97 | 112 |
| White men | 75 | 97 | 112 |
| Black men | 68 | 90 | 105 |

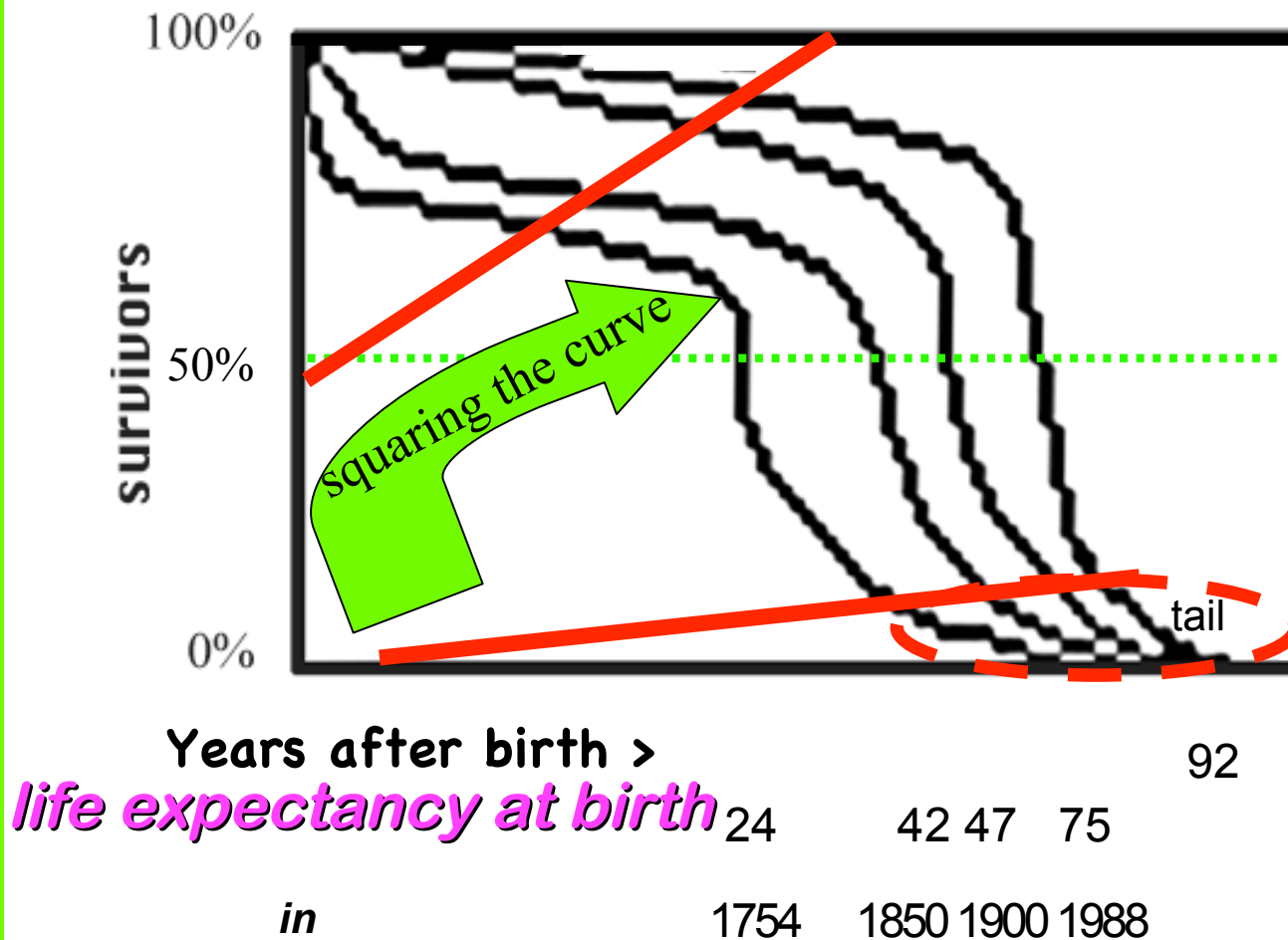
I. Extending Life

- “The centenarian population grew by 160 percent in the U.S. during the 1980s. Many demographers predict that 20 million to 40 million people will be aged 85 or older in the year 2040, and 500,000 to four million will be centenarians in 2050.”

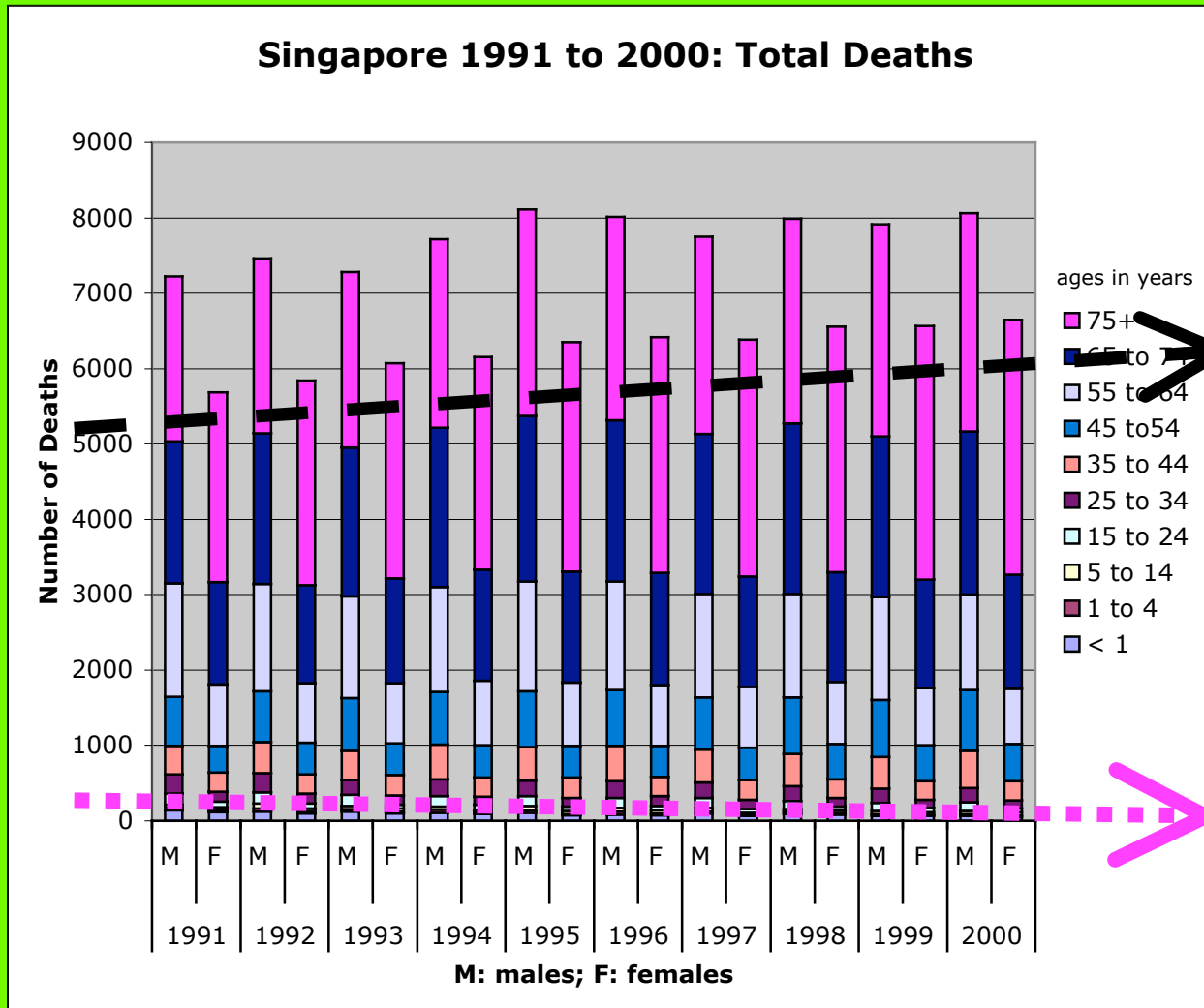
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- Perls, Thomas T., 1995, The oldest old: People in their late nineties or older are often healthier and more robust than those 20 years younger. Traditional views of aging may need rethinking. *Scientific American*, January 1995:70-5, p. 70.

I. Extending Life

Life expectancy: survivors/years

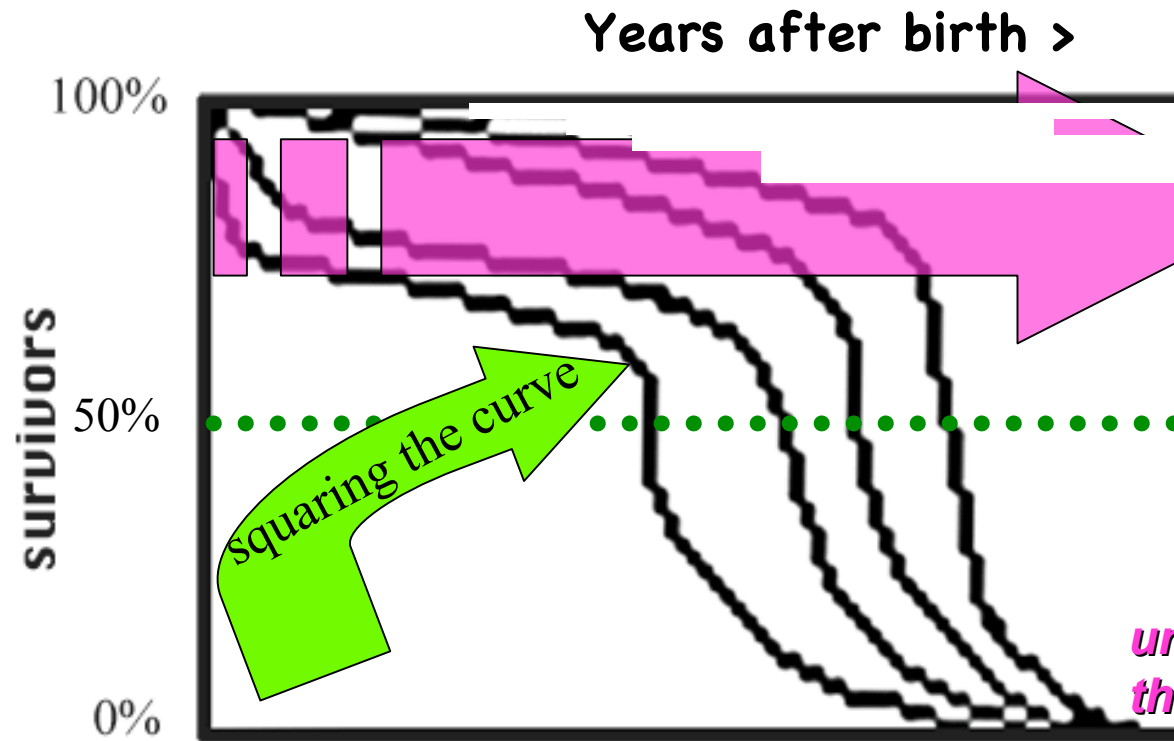


I. Extending Life



II. Extending Life

Life expectancy: survivors/years



Years after birth >

life expectancy at birth 24 42 47 75

in

1754

1850

1900

1988

2nd International Arakawa + Gins Conference

Two ways of Extending Life

1) The way things are

2) Biotopology: the study of
“rearrangements and transformation ...
[of] waxing and waning ... in all scales of
action that contribute to the formation
of an architectural body.”

II. Extending Life

niche-construction: “the activities of organisms [that] bring about changes in their environments.”¹

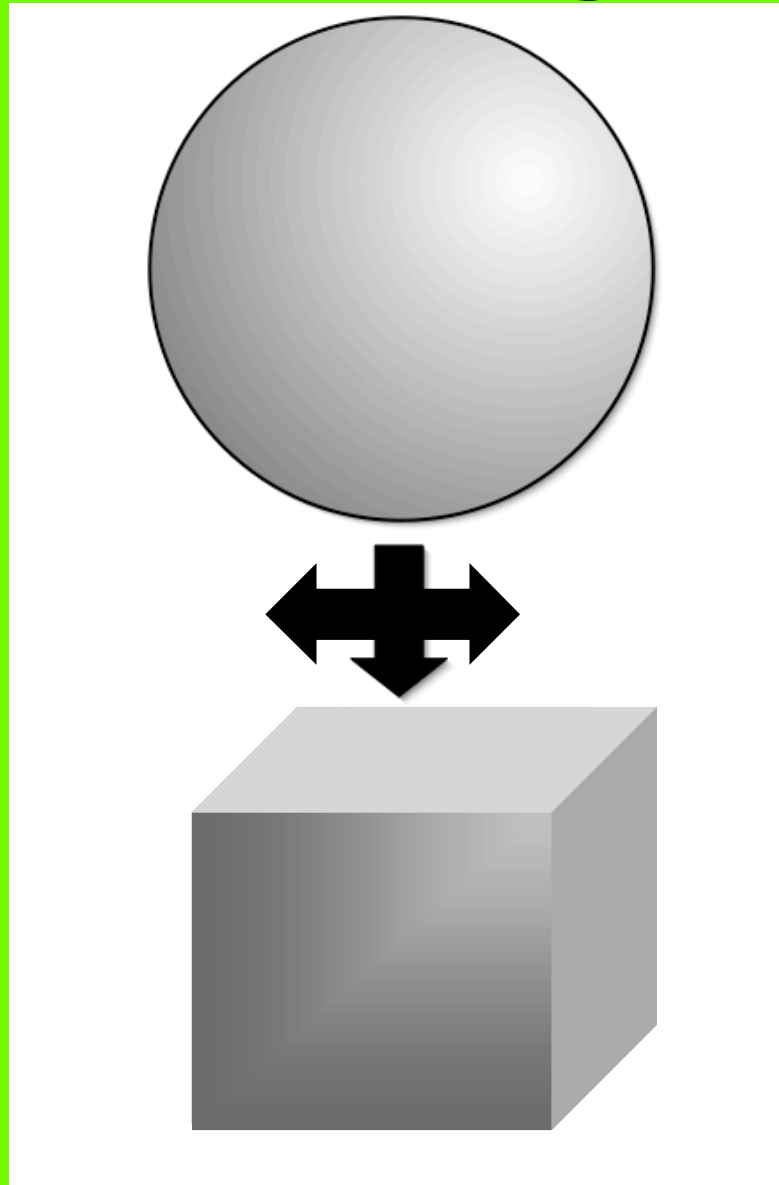
how a species’ activity feeds back on the species’ environment and hence on its evolution.

¹ Laland, K. N., J. Odling-Smee, and M. W. Feldman, Causing a commotion: Niche construction. *Nature* 429:609; June 10, 2004, 609.

II. Extending Life

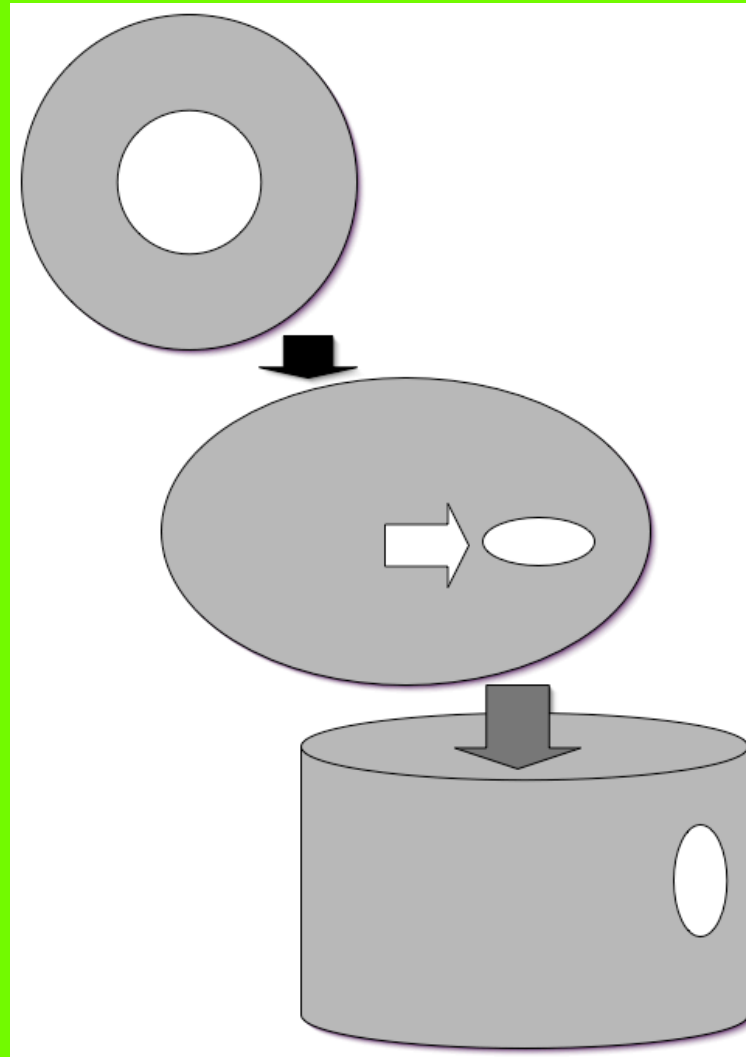
**We live
longer by
living younger!**

II. Extending Life





II. Extending Life







II. Extending Life

The Biotechnology of Extending Life

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