



Heales
HEALTHY LIFE EXTENSION
SOCIETY

How to favor clinical trials for longevity:
A Manhattan project against
senescence?

Madrid - October 2018

What you probably / should know ...

It is very probably possible to find
a treatment against aging within 15 to 30 years

But

Complicated and expensive

Death toll

110,000

Maria, Vladimir, Wei, Satya, Fatimah, Jing and John.

Death toll

Spain: 90 %

World: 70 %

Poorest countries: 50 %

Scientific aspects

- Senescence is not universal (trees)
- Death from senescence is not natural
- Senescence is malleable
- There is no limit like the speed of light or the sound barrier

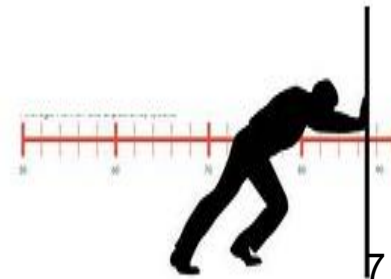
- We "only" need "Longevity escape velocity" (one year of gain each year)

Only three big categories of diseases due to aging

- Cardiovascular diseases
- Cancers
- Neurodegenerative diseases

But

- Infectious diseases (flu, tuberculosis,...)
- Falls
- ...



However it will be complicated

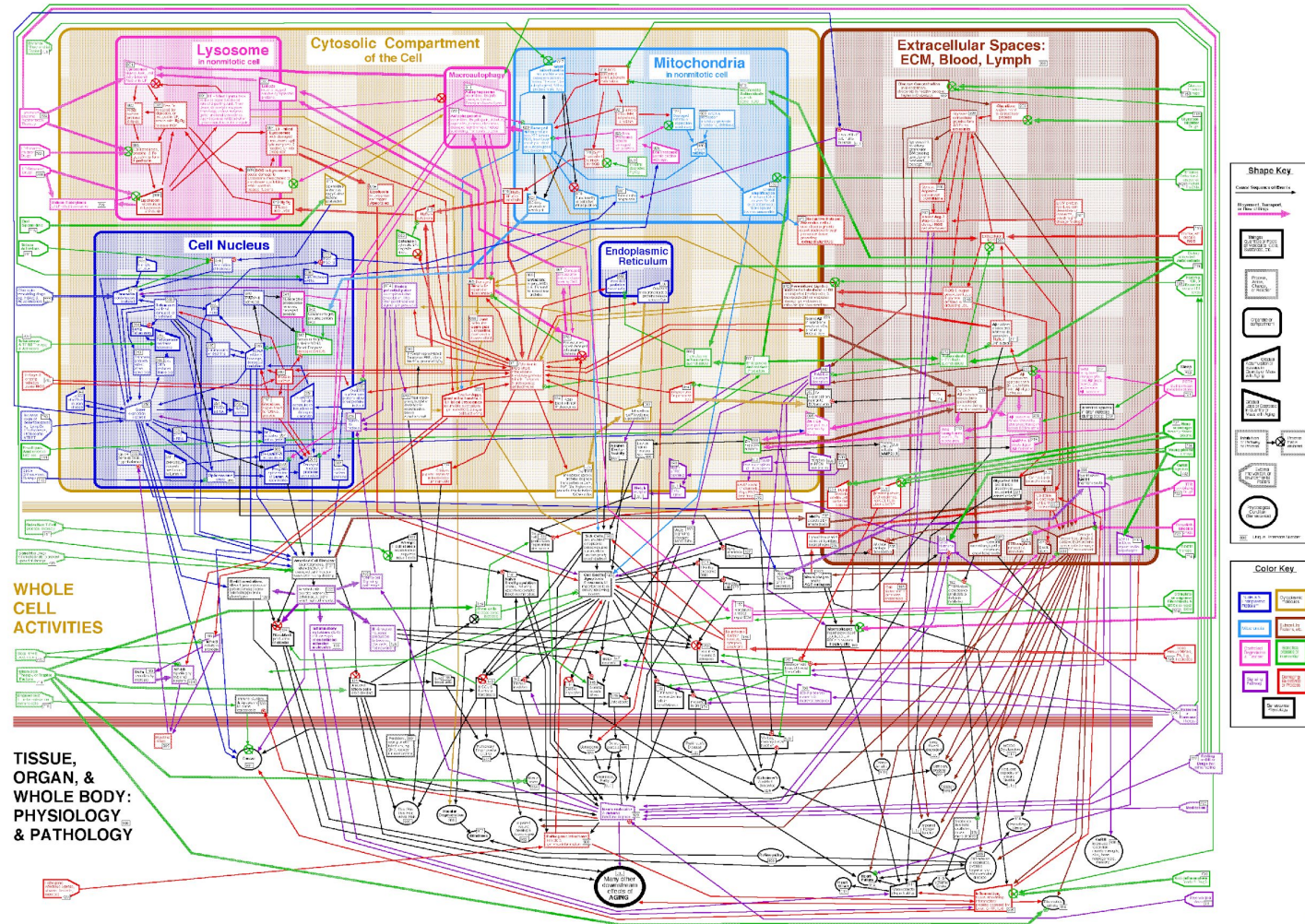
Systems Biology of Human Aging - Network Model 2015

Rev. 18 July 2015
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Arrangement, text, & art by John D. Furber

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www.legendarypharma.com

www.LegendaryPharma.com/chartbg.html



Alzheimer's disease
Gain 20 years in 2000 years
Maximum 122 years since 1997

What do we need
for clinical tests for longevity

What we need

A paradigm shift

(at least for stakeholders or scientists or public opinion)

A moonshot / Manhattan project

(clinical trials)

Clinical tests

What's happening in terms of real tests at the moment: not much

There are improvements possible for the testing protocols, the recruitment procedures

11th Revision of the International Classification of Diseases is better including diseases related to old age. This could enhance the existing testing capabilities of many involved scientists.

What we need: double blind

One group with the best already available treatment

One group with the best already available treatment
and the new therapy

Both groups will be in a better situation than ordinary people

What we need: volunteers

Old enough (70, 80, 95 for men, 99 for women)

Well informed enough

In good health

Interested for themselves and for the community

What we need: good products or therapies

Metformin

Rapamycin

Senolytics

Aspirin

Combination pill

(Later) Gene therapy

(Later) What we do not know yet

What we need: good biomarkers and public results

Before the treatment

During the treatment

After the treatment

Capacity Markers: lungs, grip, bone mass, blood pressure, visual acuity, physical appearance

Non-genetic markers cholesterol, hormones, proteins

Genetic markers: telomeres, mitochondria

What we need: a global project

At the European level
(or even world level)



First planes

First man on the moon

Global brain project

War on cancer



110,000 people a day to save

What I wish: no patents

Or at least not for everything that is paid with public money

Patentleft

The Fox and the Grapes



Other psychological brakes

Tithonus myth

(a world without senescence is difficult to imagine)

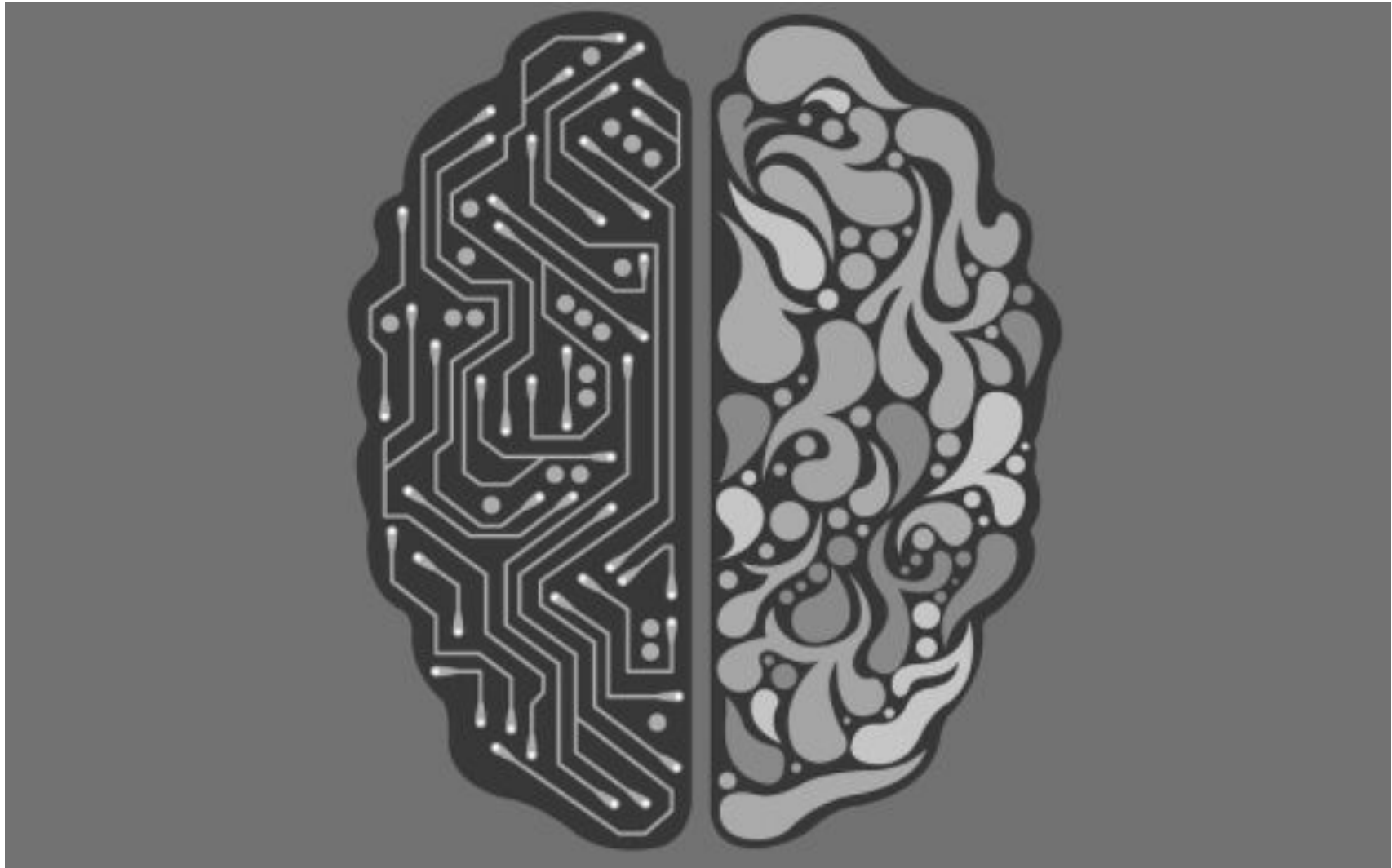
There is no such a thing as a free meal

(we imagine that something visibly positive must be accompanied with something invisibly negative)

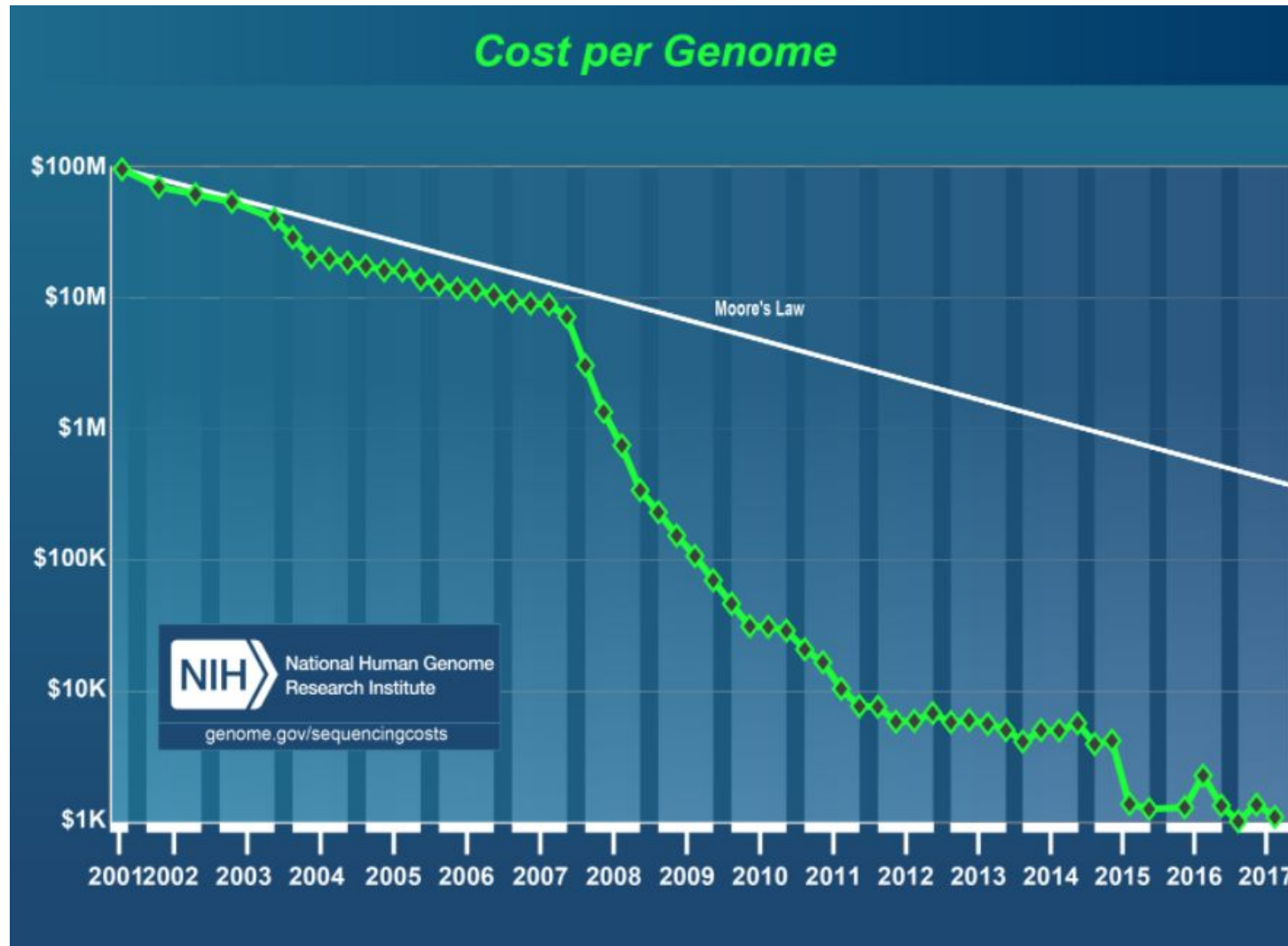
Free choice

(we like new things only if we think we can choose them)

We should use A.I.



Faster than Moore's "law" (Moore's observation)



What we need: Simplification

More scientists than ever in the history of Humanity

More bureaucracy than ever in the history of Humanity

One billion € to test for a new drug in Europe

Primarily due to heavy regulation

US, Europe, ...

What we need money

European level

US level

Google Calico

Chan Zuckerberg Initiative

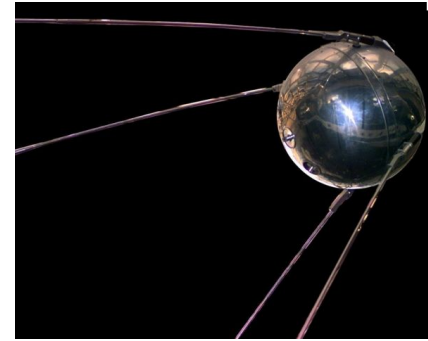
(Too) many start-ups

Progress is not certain and not all-encompassing

1978 - 2018



1967 - 1969



We cannot (easily) stop (or accelerate) progress,
but we can choose our priorities

How can transhumanists
contribute?

Longevity

Immortality

Amortality

Superlongevity

Rejuvenation

Forever youth

A much longer and healthier life, maybe one day even without senescence

Remember

(Almost) all transhumanists are longevityists

Not all longevityists are transhumanists

TO DO

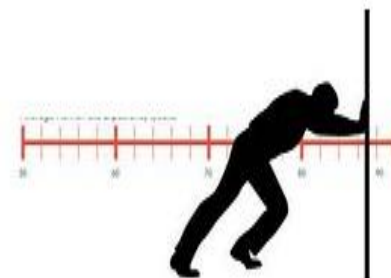
More contact with the press / the citizens / the scientists / the stakeholders

To the point but not too fringe

Moving, but not scaring

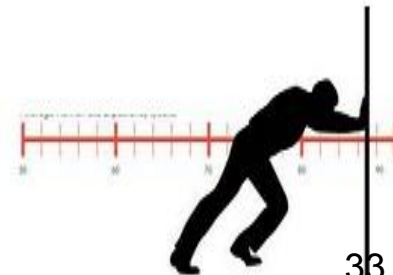
Precaution = Proaction

More equality and equity today



More equality and equity tomorrow

Duty to rescue



Thank you!

Heales (Healthy Life Extension Society) and the ILA (International Longevity Alliance) are among the organizations who are working resolutely in the directions exposed.

Eurosymposium on Healthy Ageing November 8, 9 and 10
eha-heales.org

Heales.org
Longevityalliance.org

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