

Spiritual Machines?

A Look at Transhumanism

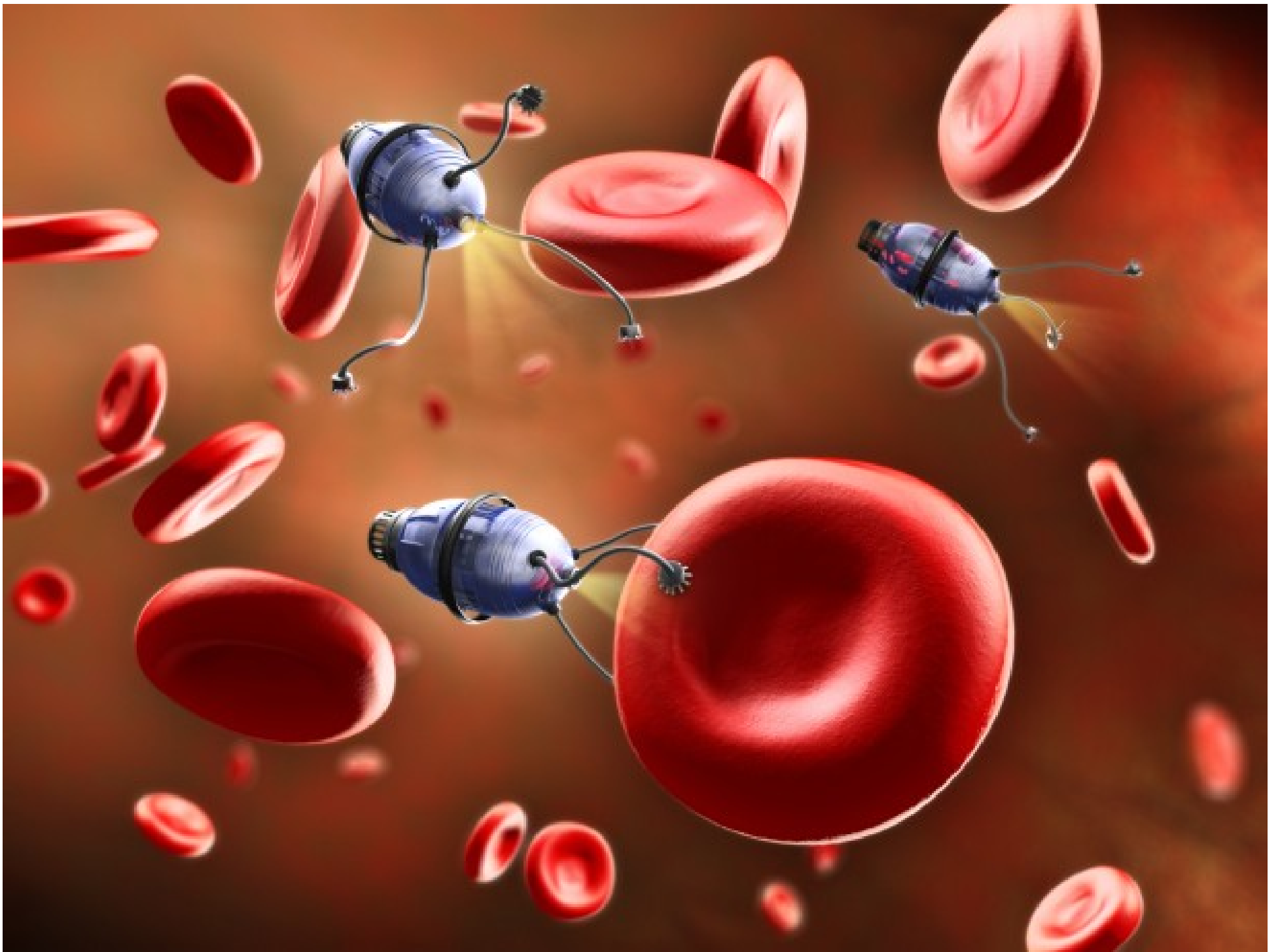


Strains of Transhumanism

- Life extension up to and including immortality.
- Improvement of human species using genetics.
- Enhancement of mind using brain implants, etc.
- Merging of individual minds with others and/or with artificial intelligence.
- Use of artificial intelligence to make life easier.
- Use of virtual reality to enhance experience.

Immortality?

- Life Extension
 - Prevention or curing of diseases of aging, e.g.
 - Heart disease
 - Dementia
 - Cancer
 - Diabetes
 - Avoiding cell aging and failure to reproduce.
 - Fix telomeres, etc.
 - Often assumes nanotechnology in the body.



Biological Immortality

- Cure all degenerative diseases, prevent body from aging.
- Accidents, murder, etc. are still possible and would limit average lifespan.



Actual Immortality

- Requires ability to upload mind to a computer:
 - for backup, perhaps for restoration into a cloned body (reincarnation?)
 - or to live “in the cloud”, i.e. in some sort of computer simulation (heaven?)



Cryogenics

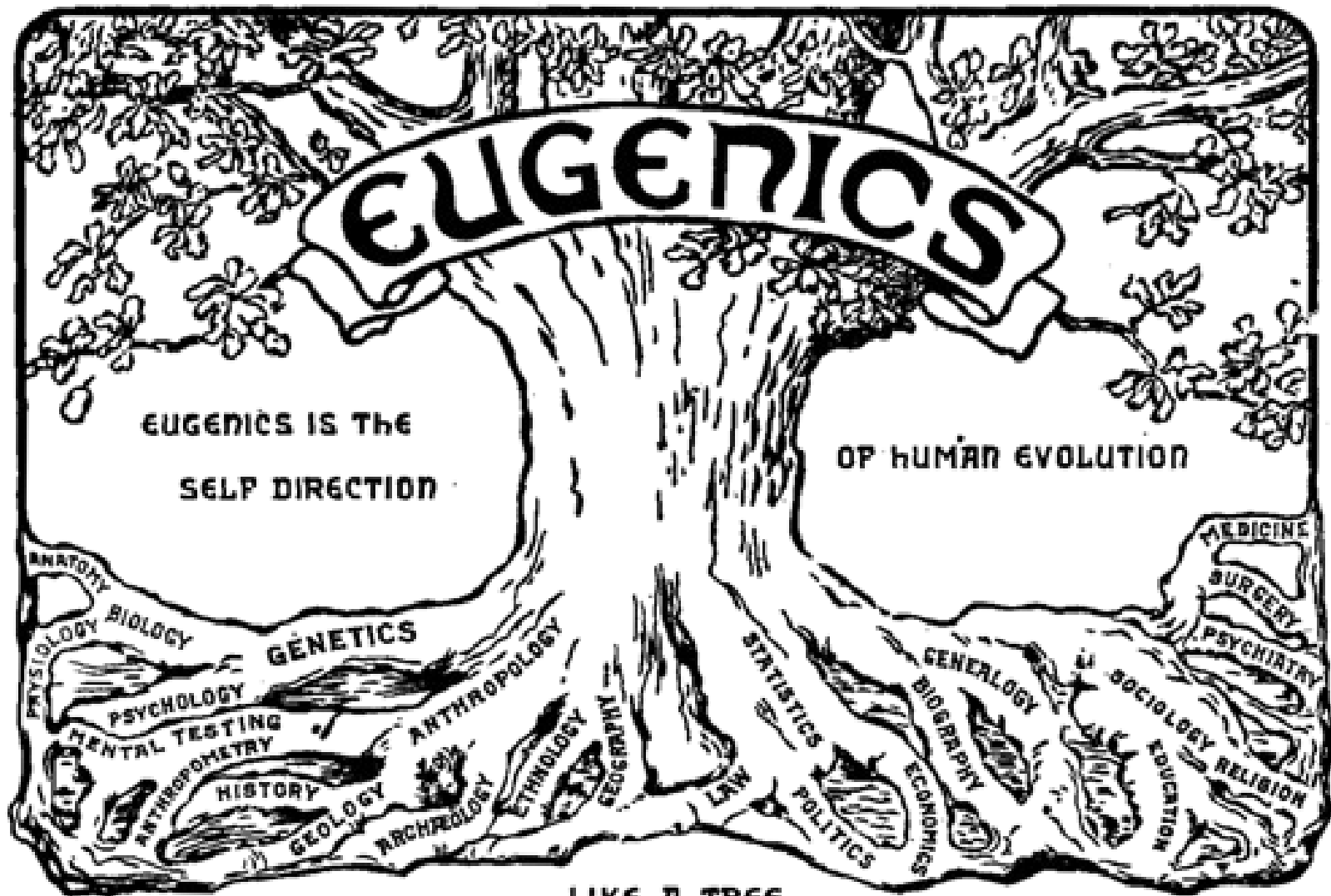
Some have already tried to freeze their body (or just their head) at death to try to take advantage of advanced technology in the future.



Genetic Modification

- Already common with plants, fish.
- Quite possible with humans.
- Can result in elimination of inherited diseases.
- Can also result in “improved” GM humans.
 - The problem is to define “improved.”
 - We could be stronger, smarter, etc.
 - Could we be wiser and more compassionate?
 - Not as simple as modifying one gene.

2nd International Eugenics Conference, 1921



EUGENICS IS THE
SELF DIRECTION

OF HUMAN EVOLUTION

LIKE A TREE

EUGENICS DRAWS ITS MATERIALS FROM MANY SOURCES AND ORGANIZES
THEM INTO AN HARMONIOUS ENTITY.

Hitler Gave Eugenics a Bad Name



Modern Eugenics

- Embryo selection by genetic testing before implantation.
- Gene splicing and modification.
 - Changes can be either temporary (only for the person treated) or permanent (inherited).
 - Latest technique (CRISPR - CAS9) makes this relatively easy.
- Much remains to be learned about genetic interactions.

Non-Genetic Augmentation

- Extension of the idea of implants, organ transplants, performance-enhancing drugs.
- Use brain to control machinery directly.
 - Example: stronger exoskeleton.
- Implant chips to add memory, computing power to brain.
- Add chips to allow direct communication from human to human or human to artificial intelligence (AI.)

Exoskeleton



BERKELEY LOWER EXTREMITY EXOSKELETON, 2004

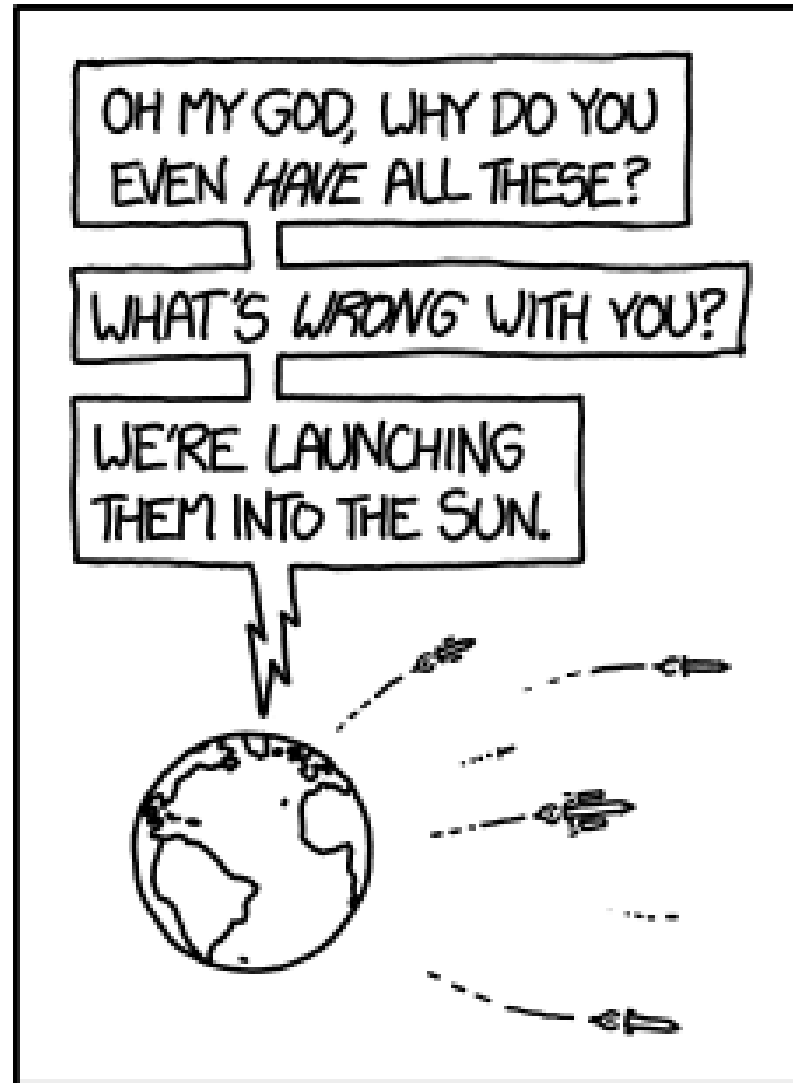
Artificial Intelligence

- Will machines become conscious?
- Current computers - no.
- Some predict neural networks or quantum computers will achieve consciousness in a few years.
- Will they help us or just take over once they are more intelligent?
- Can we merge our consciousness with theirs?
- Would an AI have worth and dignity?

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Judgment Day?



THE MOMENT THE COMPUTERS
CONTROLLING OUR NUCLEAR
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Current AI

- Self-driving cars.
- Algorithms to help pick movies, Facebook friends, etc.
- Face- and voice-recognition software.
- Google?
- Still a long way from human.

Global Consciousness

- Old idea (e.g. Teilhard de Chardin's noosphere).
- Some think it is coming true with global communications, e.g. internet.
- Could be augmented by merging with AI.



The “Singularity” Idea

- As the foregoing ideas grow and merge, future becomes unpredictable.
- Change could happen very quickly
- Could it completely transform humanity and nature?
- “The Universe Wakes Up” (Ray Kurzweil)

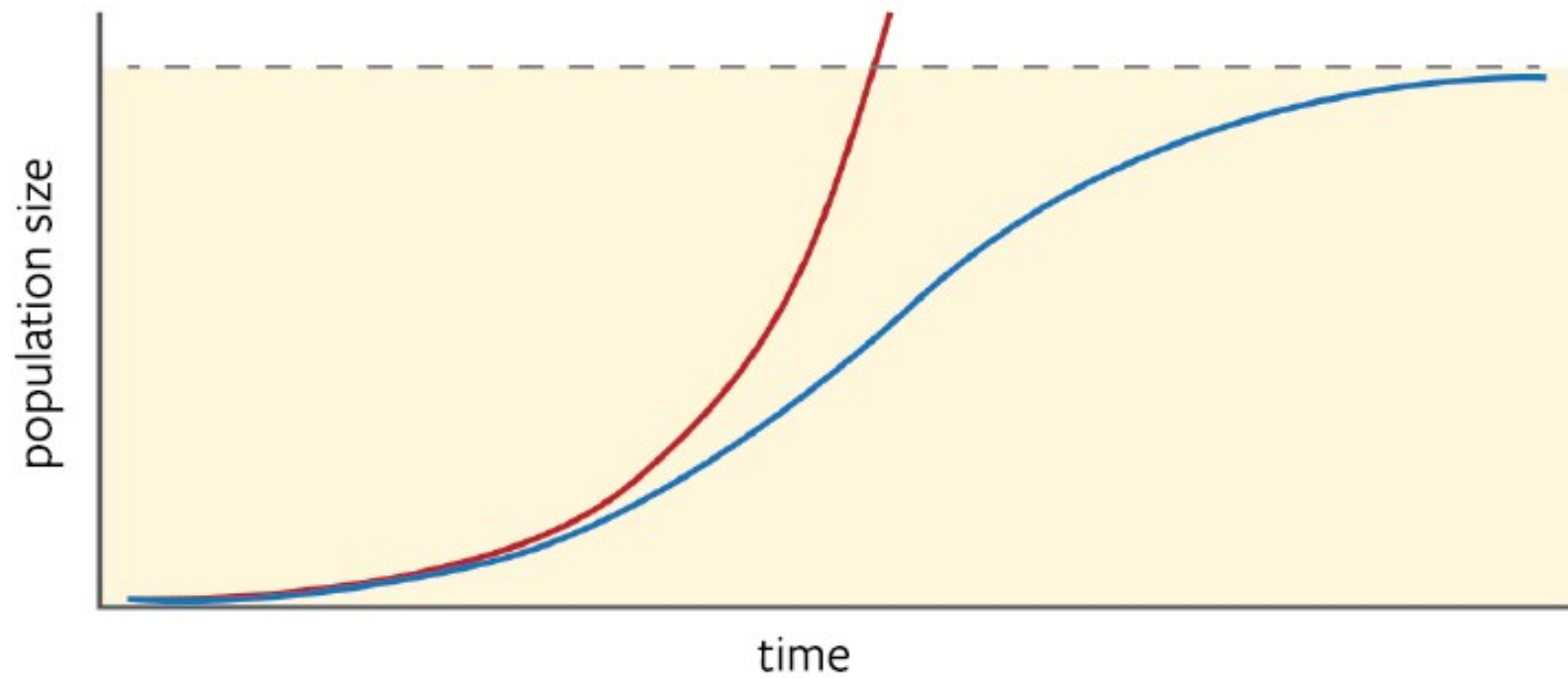
Exponential Growth

- These technologies seem to be improving exponentially.
- Example: Moore's "Law."
 - Computer power doubles every two years.
 - Not really a law, just an observation of past behaviour.

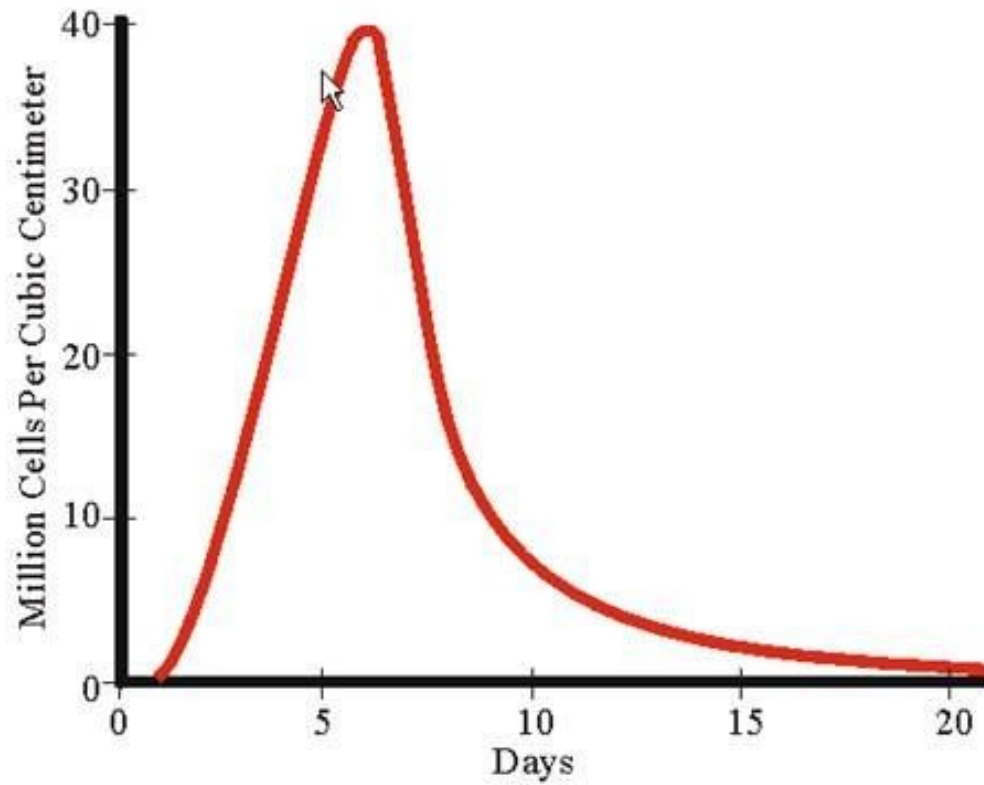
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Limits to Growth?



Growth and Crash



Ray Kurzweil 1948-



Ray Kurzweil

- Grew up as a Unitarian.
- American inventor and currently a Director of Engineering at Google.
 - Working on machine intelligence and natural language understanding.
- Name most associated with the singularity and transhumanism.
- Wrote “The Age of Spiritual Machines”(1999) and “The Singularity is Near” (2005).

Kurzweil's Lifestyle

- Takes 200+ supplements and medications per day to try to extend life.
- Plans to be frozen on death at Alcor Life Extension Foundation (if necessary).
- Hopes to live forever as medicine extends lifespan by at least one year per year.
 - Had open heart surgery in 2010, has had Type II diabetes for 30 years.
- Meticulously preserves every record of his life (and his father's.)

Some Questions

- What does it mean to be human?
- Can an AI be human? Does it have human rights?
- If we upload our consciousness to a computer, and live in a virtual world, are we still human?
- If humans live indefinitely, how do we avoid even more serious overpopulation?
- If rich people live indefinitely, what about the rest of us?

Some Thoughts

- Transhumanism may be an answer to an ultimate “first world problem.”
 - Much of the world still struggles to live an “ordinary” lifespan with reasonable health and standard of living.
- However some of the medical advances have general practical use (treatment of genetically carried diseases, reduction of heart disease, etc.)

Deeper Concerns

- Transhumanism can be seen as the continuation of the search for immortality without the religious framework (heaven, reincarnation, etc.)
 - “I don’t want to live on through my work. I want to live on in my apartment.” (Woody Allen.)
 - “When the hardware dies, the software dies with it.” (Ray Kurzweil.)
- Could a real humanism succeed better by concentrating on this life and not concerning itself with longer time periods?
- Could we extend our lives in knowledge and experience with technology without worrying so much about life extension in time?