



THE ROLE OF TECHNOLOGY IN HUMAN EVOLUTION, PART 1 OF 3

Exploring The Western Path

HOW Cafe
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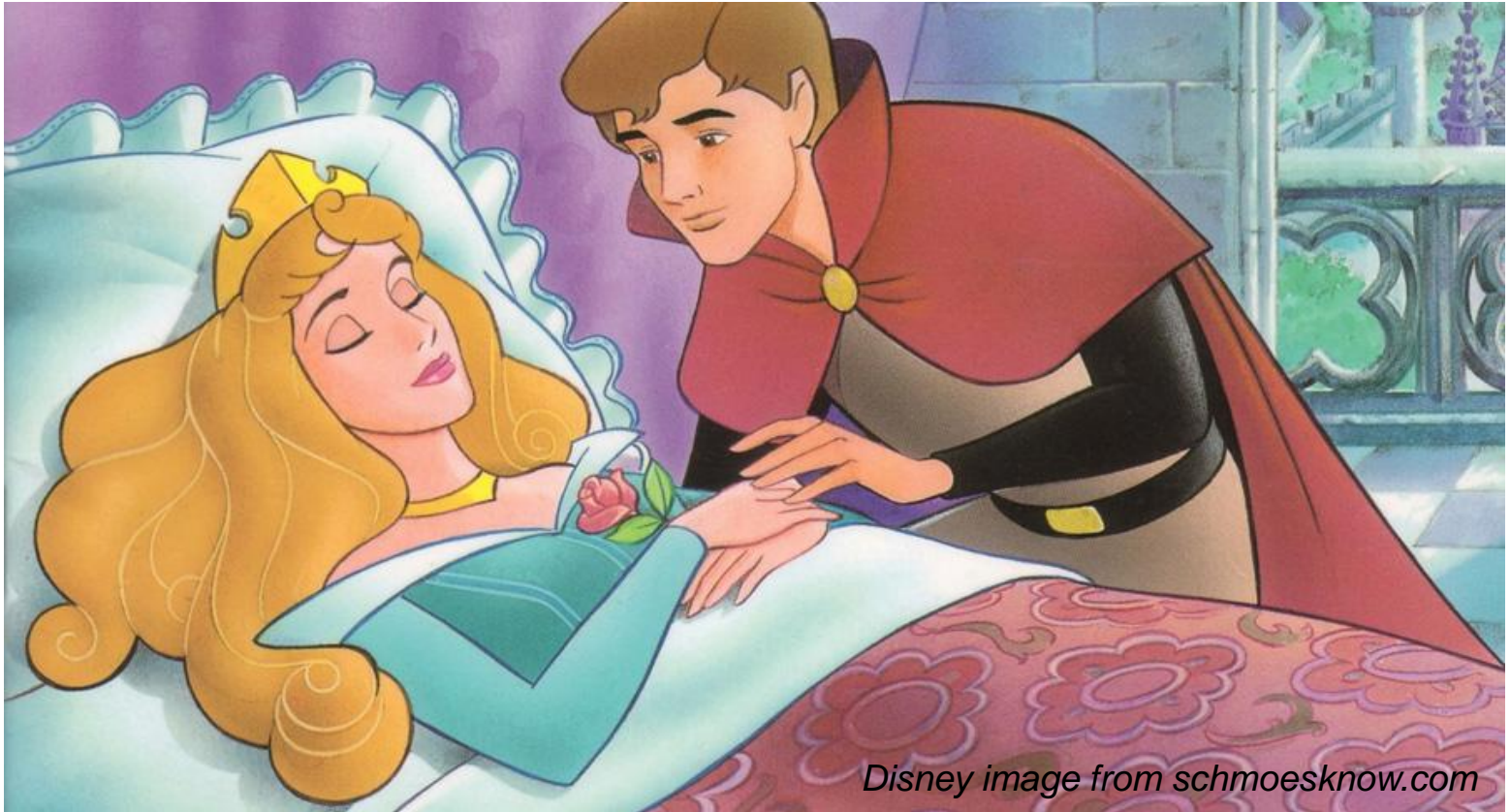
4/6/2016



[Technology in Human Evolution](#)

GOALS

- Overcoming Fear
- Mythology
- Soul and Machine
- Evolution
- Artificial Intelligence
- **The Western Path**



Briar
Rose

Disney image from schmoesknow.com

PROMETHEUS AND ZEUS

- Prometheus means 'thinking in advance'
- Epimetheus means 'thinking afterwards'
- Sons of a Titan, Japetus
 - The Titans are themselves sons of the ancient Greek god Uranus and his wife Gaia (Uranus means 'heaven', and Gaia 'earth')
 - Uranus (Greek) = Varuna (Indian vedantic)
- Chronos usurped the throne of his father Uranus to obtain the rulership for himself
- For this he was in turn dethroned by his own sons, led by Zeus
 - All other Titans were cast into the underworld
 - Includes the Titan Atlas, a brother of Prometheus
 - Only Prometheus & his brother Epimetheus remained loyal to Zeus during the fight of Zeus against Chronos & the Titans



HUMAN REBELLION

- Zeus had created the human race but humanity had become rebellious
 - Thus Zeus wanted to exterminate it
- Then Prometheus made himself humanity's **representative**
 - Devised plan to give men means whereby they could save themselves and no longer be dependent upon the help of Zeus
 - Prometheus taught men the use of **writing**, the **arts**, and above all, the **use of fire**
- Prometheus was chained to the **Caucasus as punishment**
 - Forced to **endure there much suffering** over a long period
- Prometheus **knows a secret** of which even Zeus is ignorant
 - Zeus sends Hermes, the messenger of the gods, to discover the secret, but Prometheus does not betray it





PANDORA

- Next the gods, with Zeus at their head, then caused **Hephaestus**, the god of the smiths, to make a statue of a woman, Pandora
 - Pandora was provided with all those external attributes which adorn human beings of modern times
- Pandora was sent to bring gifts from the gods to mankind, first to Epimetheus, the brother of Prometheus
- Prometheus warned his brother not to accept the gifts; but Epimetheus was charmed and persuaded
- All these “gifts” of the gods constituted human miseries and sufferings – only the last gift, hope, remained in Pandora's box

REDEMPTION

- Prometheus can only be freed through the intervention of an initiate
- Such was Heracles, who performed the twelve labors
 - They symbolize the twelve tasks of initiation
 - The execution of these 12 was the achievement of an initiate
- Heracles was an initiate of the Eleusinian Mysteries
- Nevertheless, someone still had to be sacrificed – Chiron the centaur was sacrificed for Prometheus
 - Chiron was already suffering from an incurable malady
 - He was half animal and half man





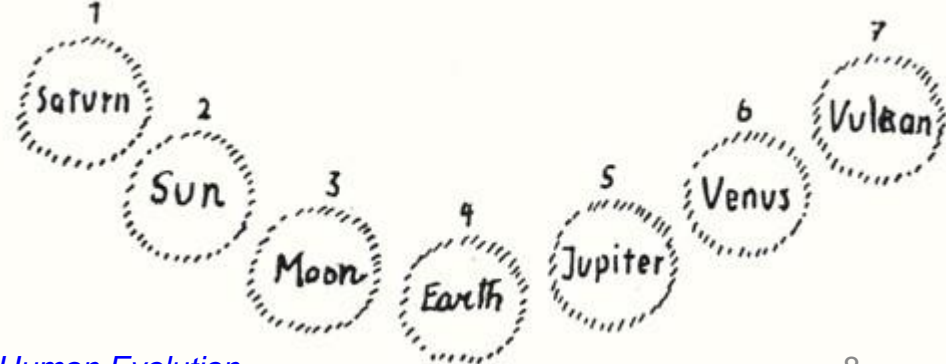
GOD WHO BUILT PAN (ALL) – DORA (GIFTS)

Hephaestus, Greek god aka Vulcan, Roman god

- God of technology, blacksmiths, craftsmen, artisans, sculptors, metals, metallurgy, fire, and volcanoes
 - Served as the blacksmith of the gods
 - Knowledge of the Earth and its interior(s)
- Son of Zeus and Hera
 - His own mother throws him off Olympus after birth
 - Hera sees his appearance as grotesque due to malformed foot
 - Builds thrones for the gods, Hera's throne binds her (like velcro)
 - Builds automatons to go up to and down from Olympus
 - Builds the chains used on Prometheus

GOD WHO BUILT PAN (ALL) – DORA (GIFTS)

- Hephaestus, being the most unfaltering of the gods, was given Aphrodite's hand in marriage by Zeus in order to prevent conflict over her between the other gods
 - *Nerds get the girl, well sort-of*
 - Aphrodite and Mars
 - First half of Earth Condition was Mars, now it is Mercury
- **Vulcan**, Roman equivalent
 - Last Planetary condition
 - Earth – Jupiter – Venus – **Vulcan**





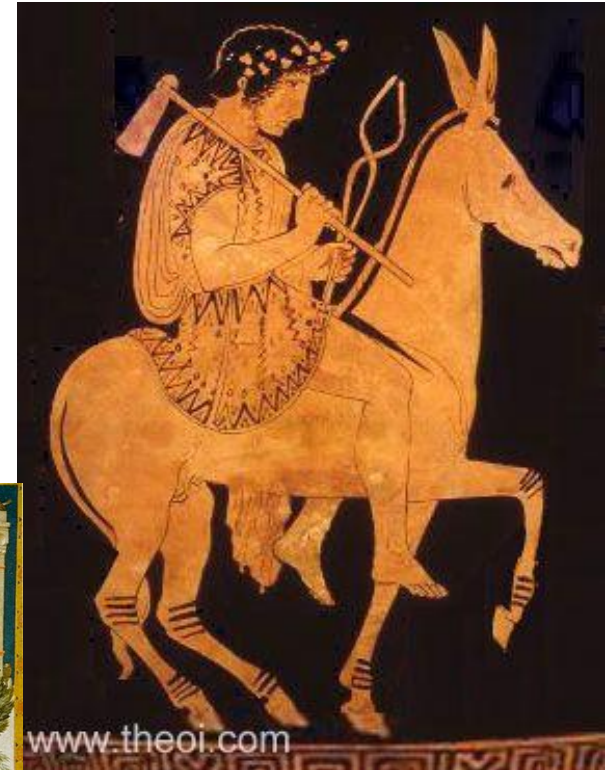
MAKING SENSE OF SAGAS

- Compare Epimetheus and Prometheus to Abel and Cain
 - Fire knowledge with Prometheus and Cain and to Hiram Abiff
 - Double-edged sword: greed, our desires vs love for the work
 - Promethean thinking is what our Epoch must develop
 - It is Manas thinking, foresight
 - It is chained by Zeus (god of astral) to the rock, the mineral
 - Eagle/vulture (astral stomach) gnaws at our liver (etheric)
 - Thus Peter is this Rock upon which Christ's church is founded
 - Now our destiny is bound up with the inorganic mineral
 - Our astral body seeks its satisfaction within the realm of matter
 - For each step in progress there must be a retrograde
 - Atlanteans: astral work on etheric plane; now on physical
 - The First Great Initiate of humanity must take upon himself the whole of life's suffering
- Temple Legend, Lecture 4, 7Oct1904*

RIDING ON A DONKEY ... (*RECALL KING SAUL*)



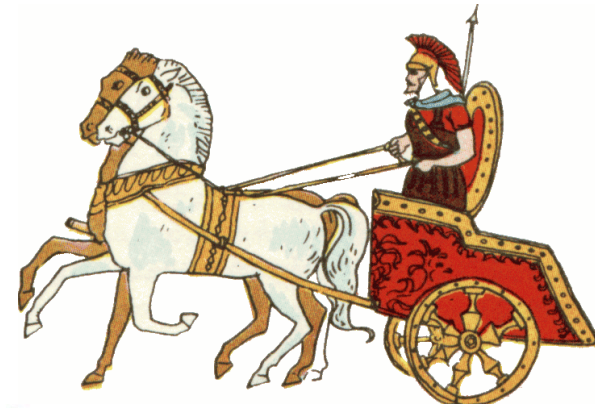
Christ
enters
Jerusalem



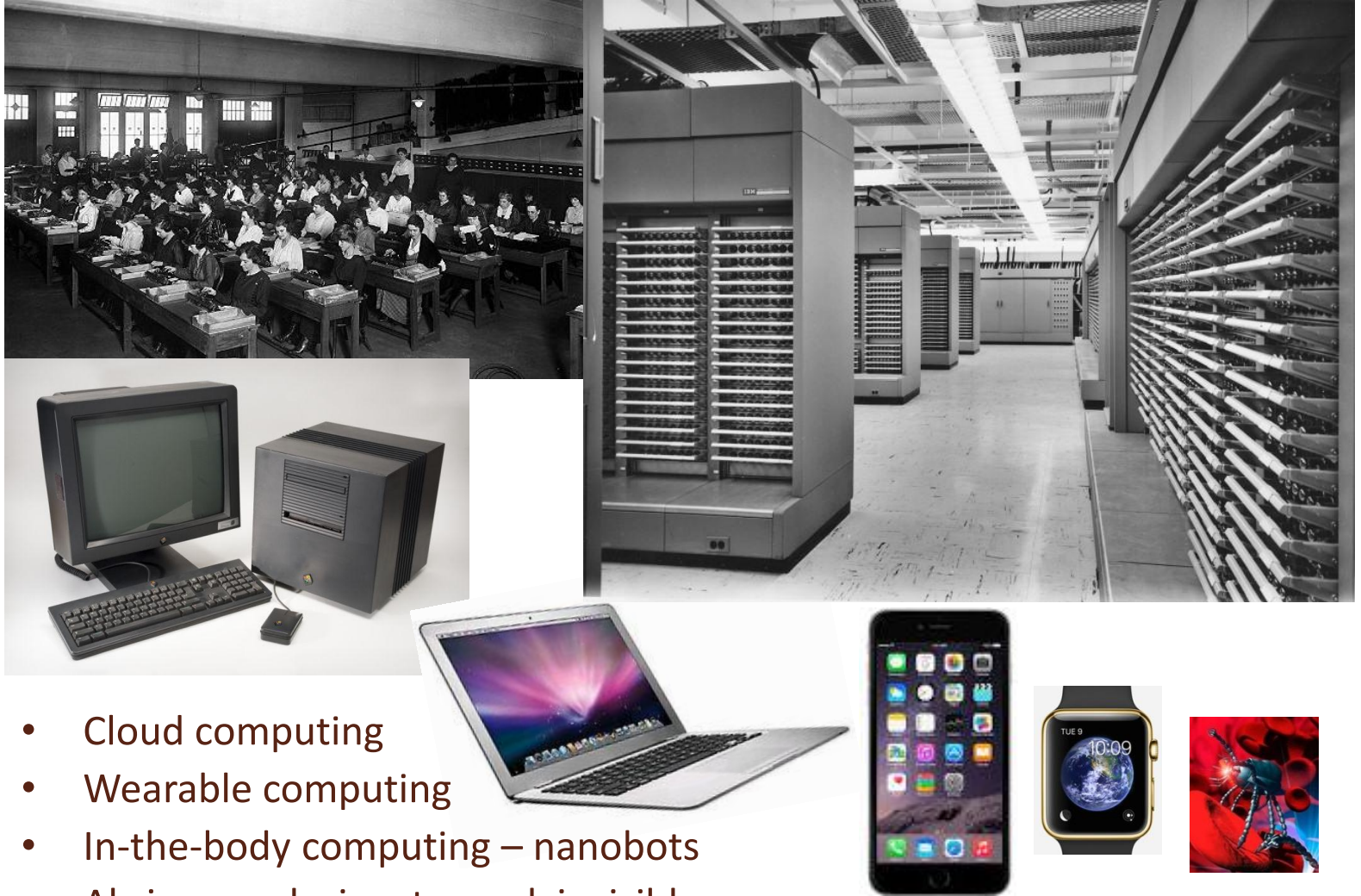
Hephaestus enters Olympus

EVOLUTION OF MACHINES

- Cain tilled the soil
 - Tubal-Cain, a smith
- Labor saving
 - Transport e.g. chariot
 - Warfare e.g. catapults
 - Manufacturing e.g. spinning wheel
- Energy (whose will?) powers
 - From plant to animal to steam engine
 - From fossil fuel to electricity to ?



GOING INVISIBLE



- Cloud computing
- Wearable computing
- In-the-body computing – nanobots
- Ahriman – desires to work invisibly

ROBOTS IN MANUFACTURING



ROBOTIC INTELLIGENCE CONTROLLING MACHINES (NOW A LEGAL DRIVER - FED GOV.)

- Cars
- Trains
- Drones
- Flying cars
- Airplanes
- Space ships
- Mines
- Hazard cleanup
- Elder care
- Day care
- Pizza delivery
- Amazon



ROBOTS IN AGRICULTURE



- BoniRob is about the size of a small car
- Uses laser-radar vision system used by Google's self-driving cars
- Capable of stamping out two weeds a second

ROBOTS IN HOME CARE

To Stepford Wives [[film](#)]



To shopping and protecting
Al Butler coming soon

What is **missing** in robots?

- “Human” experience?
- Soul qualities?
- Artificial Soul possible?

ROBO FINANCIAL ADVISOR



Futurism.com [article](#)

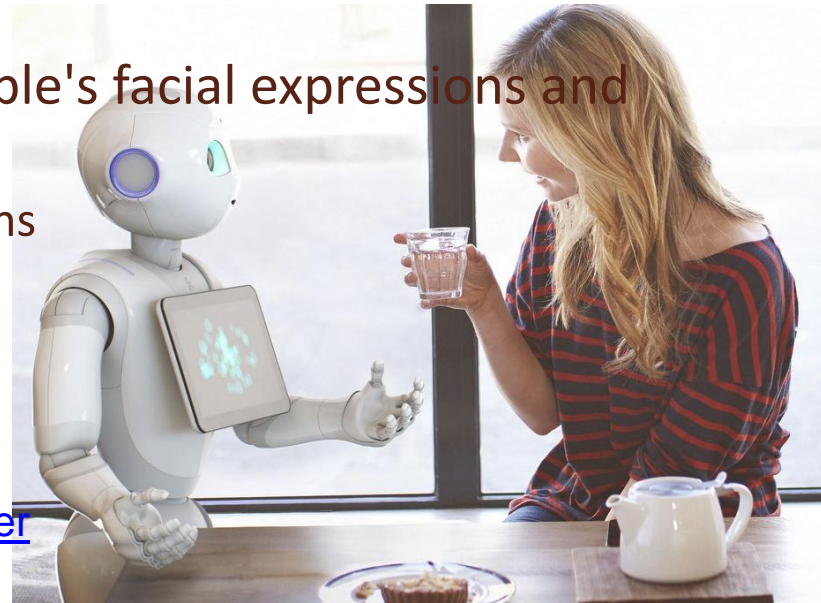
“HUMANIZING TECHNOLOGY”: THE FAMILY ROBOT

- <https://www.youtube.com/embed/3N1Q8oFpX1Y>



ADD SOME PEPPER TO YOUR LIFE

- Emotion recognition functions: “able to read emotions”
 - These emotion functions are modeled on the human release of hormones in response to stimuli absorbed by the five senses
- Autonomous emotion generator for its own (artificial) emotions
 - by processing information from his cameras, touch sensors, accelerometer and other sensors within his “endocrine-type multi-layer neural network”
- Emotions are influenced by people's facial expressions and words, as well as surroundings
 - Affects Pepper's words and actions
 - Happy when praised
 - Scared when the lights go down
 - Raises voice or sighs



<https://www.aldebaran.com/en/a-robots/who-is-pepper>

ROBOTS WITH AI FOR CHILDREN

- AI with speech recognition for children
- Huggable, a robotic teddy bear, NYT [video](#) from Robotica series
 - Therapeutic toy

Barbie “Learns”

- Names of pets, siblings, friends
- What a child’s interests are
- If grandparents are still living
- Starts sales in time for Xmas



Mark Lennihan/AP Photo

BATTLE FOR THE HUMAN WILL

- Robots and human movement



MISSING

HAVE YOU SEEN THESE PEOPLE?



DESCRIPTION: Ambitious young adults with shovels during a snow storm, who are looking to make money by shoveling sidewalks, driveways, etc.

LAST SEEN: Sometime before the invention of Microsoft's Xbox, SONY's Play Station, and Nintendo's Wii home video consoles.



OUR WORLD IS CHANGING

**Shall we bemoan it or embrace it?
Turn cold and scorn it or feel enthusiasm for
the work to be done?**

“‘Yes,’ said Gandalf. ‘If you have walked all these days with closed ears and mind asleep, wake up now!’ He knocked on the door.”
— J.R.R. Tolkien, *The Lord of the Rings*



“We want to transplant your brain into an elegantly designed bionic body called Humai” (Human-AI). Is this Panpsychism?

MAN AND MACHINE: INTELLIGENCE, CONSCIOUSNESS, IMMORTALITY, AND SOUL



HUMAI: IMPLANT A HUMAN BRAIN TO AN ARTIFICIAL BODY - *IS IT SIMILAR TO DRIVING A CAR?*

- “We’re using artificial intelligence and nanotechnology to store data of conversational styles, behavioral patterns, thought processes and information about how your body functions from the inside-out
- This data will be coded into multiple sensor technologies, which will be built into an **artificial body** with the brain of the deceased human
- The artificial body functions will be **controlled with your thoughts by measuring brain waves**
- After death we’ll freeze your brain using cryonics technology
- When the technology is fully developed we’ll implant the brain into an advanced artificial body”
- Later, “As your brain matures, genetic engineering will help fight the aging process, while advancements in nanotechnology will offer extensive tissue repair and regeneration, including the repair of individual brain cells, one molecule at a time.”
- *How much of the soul’s activity is hereby “captured”?*



IS HUMAN-LEVEL AI EVEN POSSIBLE?

The reasoning goes like this:

- If people are biological machines, then eventually we will **reverse engineer** them, and understand their workings
- Then, surely we can **make improvements**
 - With materials and technology not available to evolution
 - How could there not be something we can improve?
 - Design can overcome local minima, make great strides, try things much faster than biology
- OK, when might this happen? AI Industry claims:
 - 25% chance by 2030
 - 50% chance by 2040
 - 10% chance never

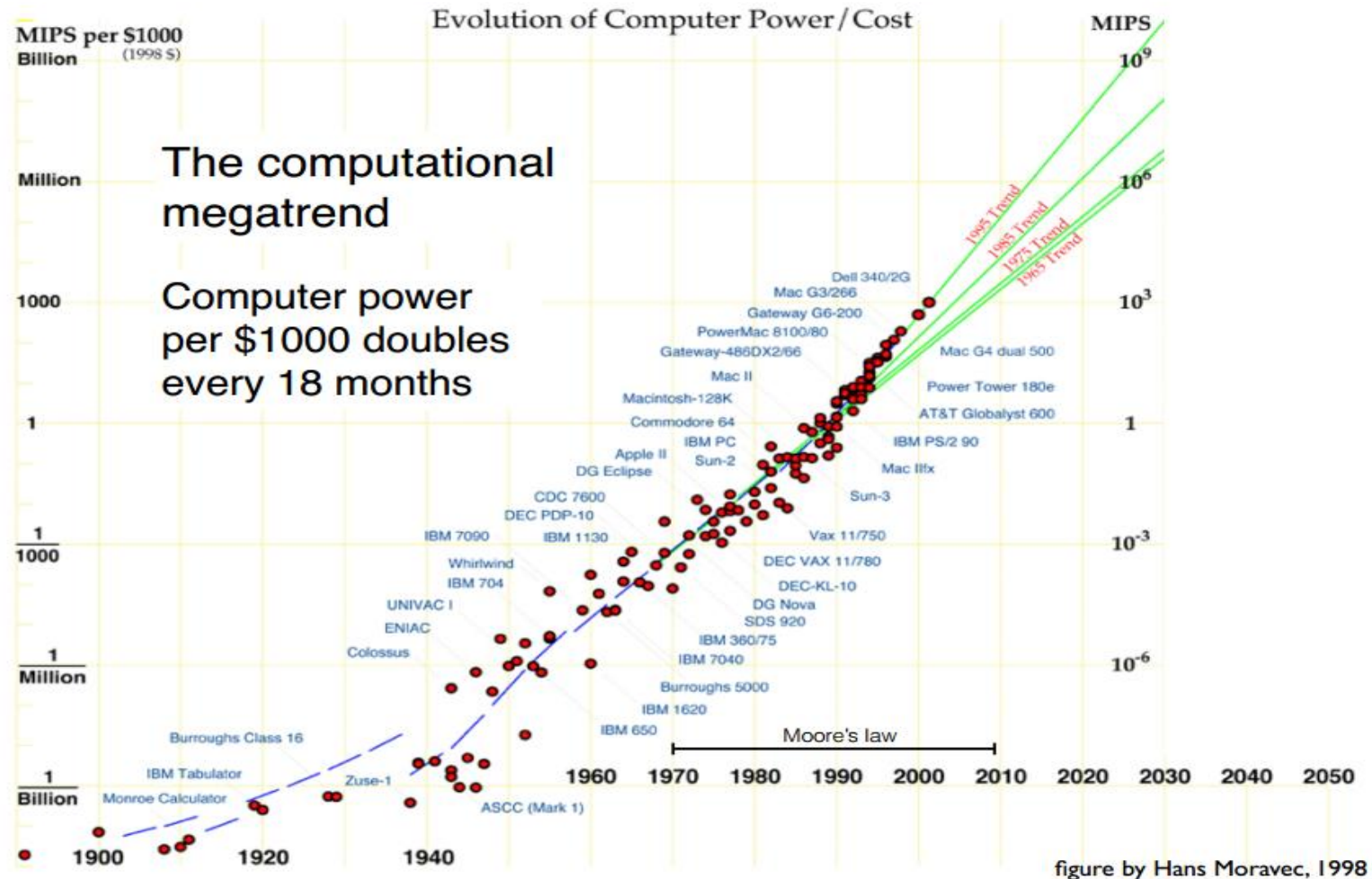


U.S. BRAIN INITIATIVE

- To revolutionize our understanding of the human brain
- Center for the Neural Basis of Cognition
 - Carnegie Mellon University funded by the U.S. Intelligence Advanced Research Projects Activity (IARPA) for \$12 million
- Impact will likely be long-lasting
 - Promises to be a game changer in neuroscience and AI
- Improve performance of artificial neural networks
 - “By incorporating molecular sensors to monitor neural activity in combination with sophisticated optical methods, it is now possible to simultaneously track the neural dynamics of most, if not all, of the neurons within a brain region”
- Result in machines that have more human-like *qualities*

WHEN WILL AI BECOME HUMAN-LEVEL?

“By 2025 these machines will have an IQ greater than 90% of the U.S. population. That ... would put another 50 million jobs within reach of smart machines.” Harvard Business Review, 2014



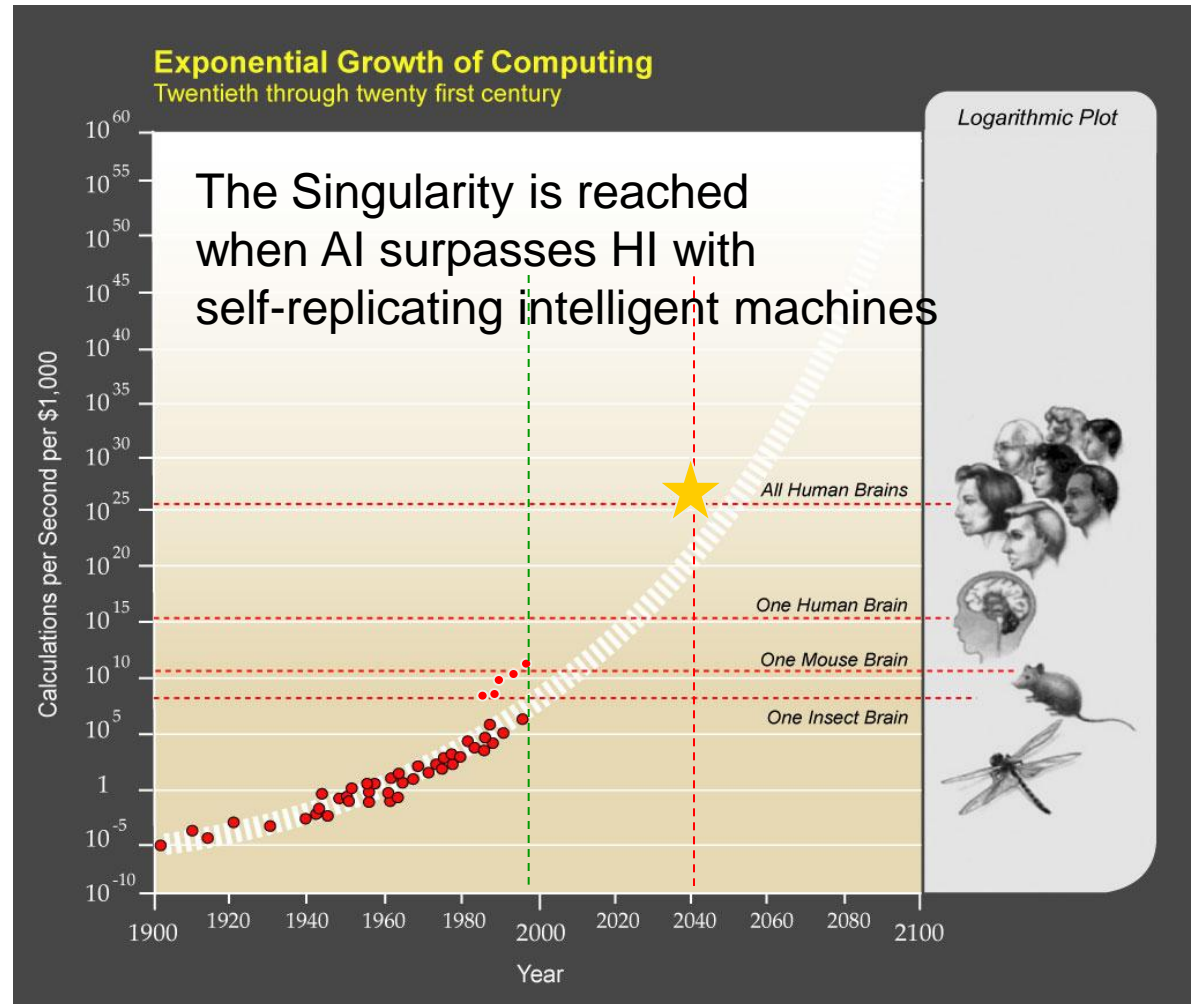
WHEN SILICON BEINGS SURPASS CARBON

\$2000 computer, 2020 = human brain, 2045 = Σ all human

Law of
Accelerating
Returns:
technological
change is
exponential as
is the change
in the *rate* of
change

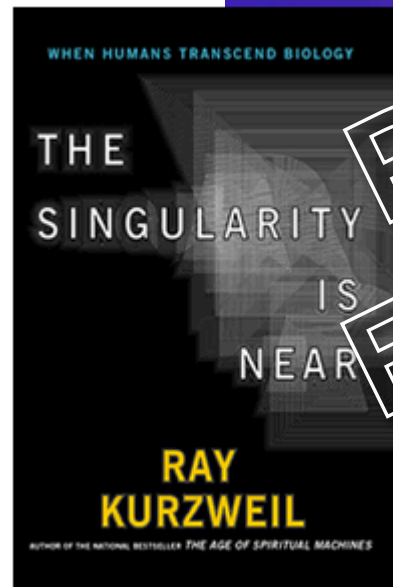
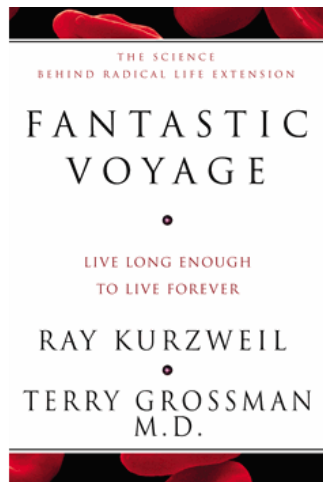
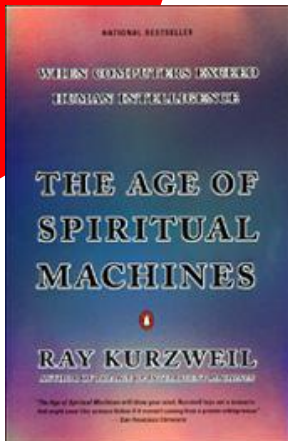
Blue Brain Project
Mimic the Brain

www.eetimes.com, May 28, 2008



RAY KURZWEIL'S VISION OF THE FUTURE

- Immortality is within our grasp
- When Humans transcend biology



Key: GNR



AI'S PERSPECTIVE ON HUMAN WILL

- “**‘Motive’** in humans could be **reduced to calcium** and other ionic strengths in neurons and other cells — i.e., ‘electromotive force,’ the voltage developed by any source of electrical energy such as a battery (https://en.wikipedia.org/wiki/Electromotive_force) — or the voltage applied to a chip.
- The only substantial difference is in the respective programming, which could be “do not reduce voltage to zero” (‘self-preservation’)
- **‘Emotion’** seems to be a ‘suitcase word’ (Minsky) for a **set of ionic strengths** (and other factors) – in that sense, it would appear that an **AI could be “motivated” to terminate mankind.**” – Editor of <http://www.kurzweilai.net/the-problem-of-ai-consciousness>



FLI'S THE FUTURE OF AI, JAN. 2, 2015

When people finally come to understand the principles of intelligence—what it is and how it works—well enough to design and create beings as intelligent as ourselves:

1. It would change the way we work and play, our sense of self, life, and death, the goals we set for ourselves and for our societies
2. It would also be of significance beyond our species, beyond history
3. It would **lead to new beings** and new ways of being, beings inevitably much more powerful than our current selves
 - A fundamental goal for science, engineering, the humanities, ... for all mankind -- http://futureoflife.org/misc/ai_conference
4. <http://www.techrepublic.com/article/humans-2-0-how-the-robot-revolution-is-going-to-change-how-we-see-feel-and-talk/>

2045 INITIATIVE

- Founded February 2011 by **Russian** entrepreneur Dmitry Itskov
- “Initiative aims to create technologies **enabling the transfer of an individual’s personality to a more advanced non-biological carrier**, and extending life, including to the point of immortality”
- “An international research center where leading scientists are engaged in research and development in the fields of **anthropomorphic robotics**, living systems modeling, plus brain and consciousness modeling with the goal of transferring one’s individual consciousness to an artificial carrier and achieving **cybernetic immortality**”
 - Fields of neural interfaces, robotics, artificial organs and systems



<https://www.youtube.com/watch?v=01hbkh4hXEk>

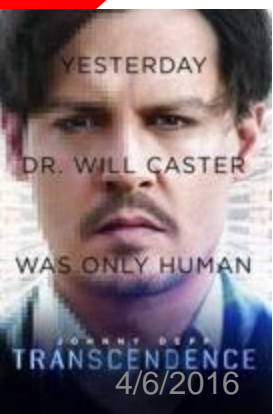
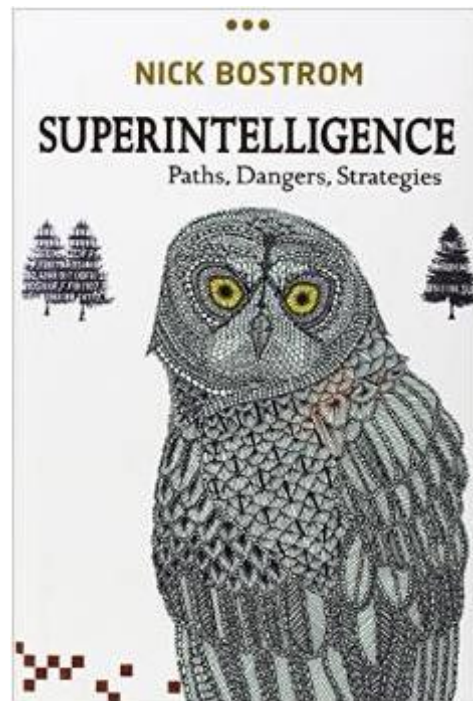
2045 INITIATIVE'S TIMELINE

- **2015-2020** Affordable android "**avatars**" with "brain-computer" interface
 - Work in dangerous environments, perform rescue operations, travel in extremes
 - Avatar rehab of disabled patients, prosthetic limbs, recover lost senses
- **2020-2025** Autonomous life-support system **linking brain to a robot**
 - Avatar saves people whose body is completely worn out or irreversibly damaged
 - Any patient with intact brain will be able to resume a fully functioning bodily life
- **2030-2035** Computer **model of the brain and human consciousness**
 - Transfer individual consciousness to an artificial carrier: cybernetic immortality
 - Ordinary people will restore or modify their own brain multiple times
 - A real revolution in the understanding of human
- **2045** **Substance-independent minds** receive ***new extreme bodies***
 - A new era for humanity will have arrived! – **become a new species**
 - **Large-scale expansion into outer space becomes feasible**



ONWARD TO GOD-INTELLIGENCE

- “If some day we build machine brains that **surpass human brains** in general intelligence, then this new superintelligence could become very powerful. And, as the fate of the gorillas now depends more on us humans than on the gorillas themselves, so the fate of our species would **depend on** the actions of the machine superintelligence.”
- “We do have one advantage: we get to build the stuff. ... It also looks like we will only get one chance. Once unfriendly superintelligence exists, it would prevent us from replacing it or changing its preferences.” – Nick Bostrom
- Will Superintelligence rival Godintelligence?
 - God the all-wise or super-AI or God is love?
 - For Good or Evil?





OTHER ISSUES

Is Intelligence = Consciousness?

- “Consciousness is a simple memory loop mechanism which combines real-time perceptions, with memorized experiences. It provides us with “self awareness”. If you contemplate it for a time, you will see it. It is a continuous process, which begins, for practical purposes, when we are born, and ends with our death.” – Kurzweil AI, [The Problem of AI Consciousness](#)

If one were to achieve cyber immortality, then:

- What might it mean to be in the same state forever?
 - Renewal then is only changing parts but not one’s personality
- Would we be overwhelmed with Cosmic Boredom as we feel imprisoned within our singular personality?
- Would we long for biological life? Death?
- Would we miss creativity and being part of on-going creation?

HUMAN CONSCIOUSNESS & THE BRAIN

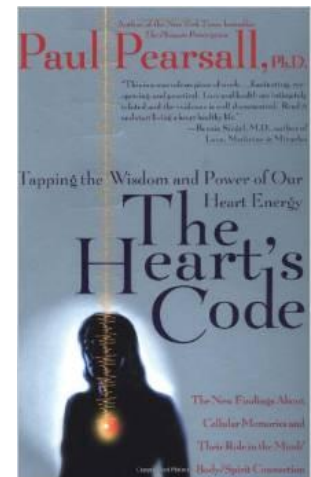
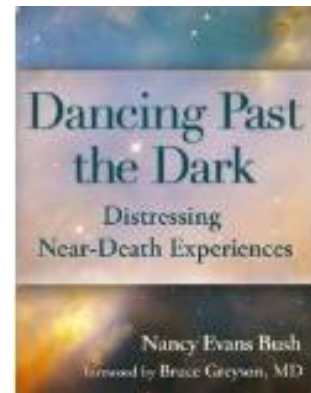
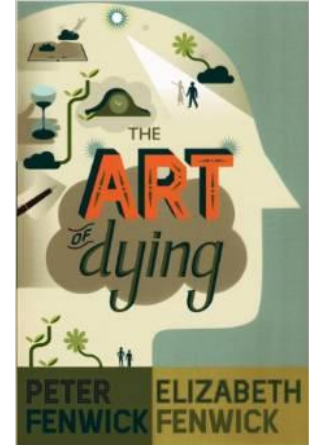
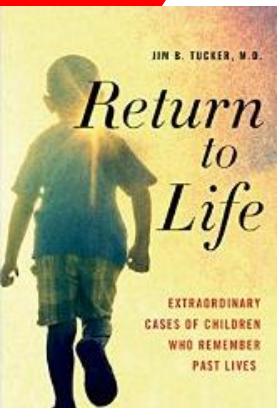
Will we “be there” once we reverse engineer the brain?

- Peter Fenwick
 - Eminent neuropsychiatrist, disorders of the brain
 - Research: end of life phenomena
 - **Consciousness may be independent of the brain and so able to survive the death of the brain**
 - Change attitudes so that we in the West can *face up to death*, to embrace it as a significant and sacred part of life
- Richard Greyson (and Robert Mays)
 - Professor Psychiatry and Neurobehavioral Sciences, UVa.
 - Researcher in the field of **near-death experiences** (NDE)
 - <https://www.youtube.com/watch?v=Rtk644N2DDs>
 - <https://www.youtube.com/watch?v=en-3Bz1RMig>

Paul Pearsall

- The heart is more than just a pump; it conducts the cellular symphony that is the very essence of our being
- Research on cellular memory of the heart
- Do memories move with transplanted heart? Other organs?

Jim B. Tucker *studies of recollections of past lives*



IS IT WRONG TO COUPLE MAN TO MACHINE?

Improving Prosthesis

- From Captain Hook to ...
- Helping the maimed to live
 - Is this not the Christian thing?
 - Or is it one's karma (so do nothing)?
- Built in robotics – better than bio?
- Is this a slippery slope?
 - Temptation to change natural (weaker) for artificial?
 - Example: plastic surgery
 - How does the human soul & spirit deal with mechanical limbs?
 - Can Atma still be attained?
 - What does it mean for future generations?



BIONIC EYE

- Allen Zderad was blind 20 yrs.
- Given a bionic eye implant
 - Created by Second Sight, Inc.
- Mayo Clinic (Raymond Iezz)
- Works by bypassing his damaged retina and sending signals directly to the optic nerve
- A small chip was attached to the back of the eye with multiple electrodes offering 60 points of stimulation
- Future version could have 1000 points of stimulation
- Source: <http://www.medicalnewstoday.com/articles/289863.php>



BIONIC LIMBS

- Three Austrians have replaced injured hands with bionic ones that they can control using nerves and muscles transplanted into their arms from their legs
- His son, then 4, said proudly, "my father is a robot"
- Transplanted arm (from cadaver) would have meant taking anti-rejection drugs for the rest of their lives
- 98% of amputees report **phantom sensations**
 - Also see [mirror-touch synesthesia](#)
- Isn't this very expensive? – only for the rich?

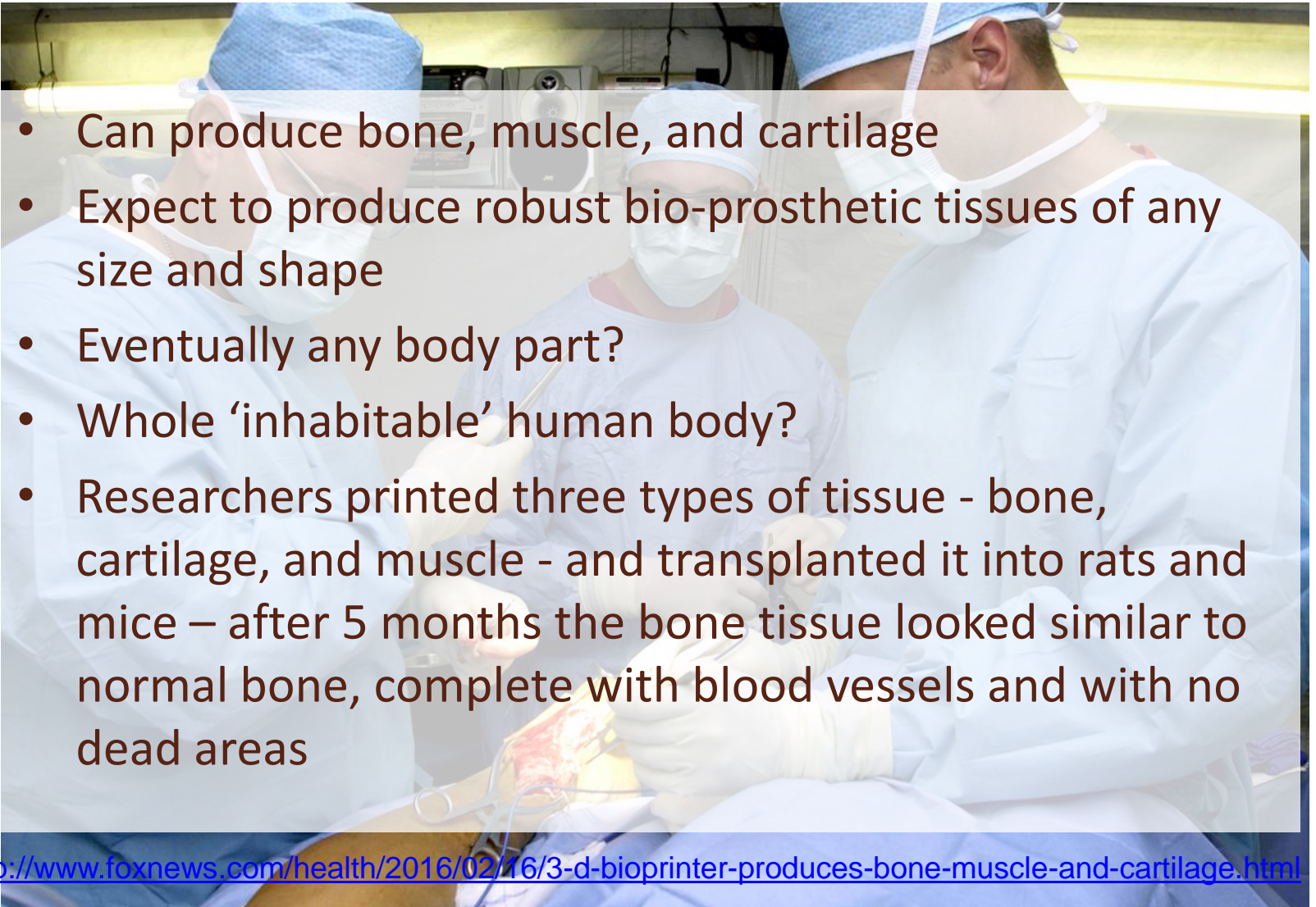


BIONICS BECOMING AFFORDABLE

- Made with \$2000 3D Printer and inexpensive materials
- More: <https://www.youtube.com/watch?v=A6isKsPWubA>



USING 3D PRINTERS TO MAKE BODY PARTS



- Can produce bone, muscle, and cartilage
- Expect to produce robust bio-prosthetic tissues of any size and shape
- Eventually any body part?
- Whole 'inhabitable' human body?
- Researchers printed three types of tissue - bone, cartilage, and muscle - and transplanted it into rats and mice – after 5 months the bone tissue looked similar to normal bone, complete with blood vessels and with no dead areas

<http://www.foxnews.com/health/2016/02/16/3-d-bioprinter-produces-bone-muscle-and-cartilage.html>

LINKING THE BRAIN TO MECHANICAL ARMS



Link to [video](#)

HOW IT WORKS

1. Record brain activity
 2. Set brain probes
 3. Train brain to use
 - Jan Scheurmann watched animations of movements and imagined them
 - The signals her brain sends to calibrate the system are recorded
 - Then "reading her thoughts" allows proper placement of probes she uses to move the hand
- Source: <http://www.medicalnewstoday.com/articles/287120.php>
 - Can the human change to accommodate machines?
 - Does neuro-plasticity play a role?



RECENT NEWS (MAY 21, 2015)

- Erik Sorto, paralyzed a decade, was recently able to pick up a beer and drink it thanks to a robotic arm.
- “He's painted pictures, made the smoothies.
- It's a very good thing for our patients who are paralyzed to see such tech wizardry.”
- For ALS, severe strokes
- [Upright Paraplegics Show Improved Health Stats](#)
- [Wearable Robots on the Rise to Help Paraplegics Walk](#)
- [Bionic Fingertips](#) and [NYT video](#) of Les Baugh testing a robotic prosthetic that he can control with his mind



INVESTMENTS NOW POURING IN

- “I'm getting quite a few questions lately regarding one of my favorite companies, **Ekso Bionics Holdings Inc.**(OTC:EKSO).
- “As you know, the company is tied into one of the most dynamic Total Wealth Trends of all - and potentially the most profitable, too - Human Augmentation. So I thought we'd revisit EKSO and, in the process, update some of the interesting stuff that's going on.”
- www.totalwealthresearch.com



<http://eksobionics.com/ekso>

NEUROPLASTICITY OF THE BRAIN

- Refers to changes in neural pathways and synapses due to changes in behavior, environment, neural processes, thinking, emotions, as well as changes resulting from bodily injury
- Known in vision improvements
- Leads to human trials on a broad scale for motor cortical implants to help quadriplegic or locked-in patients perform tasks and communicate with the outside world





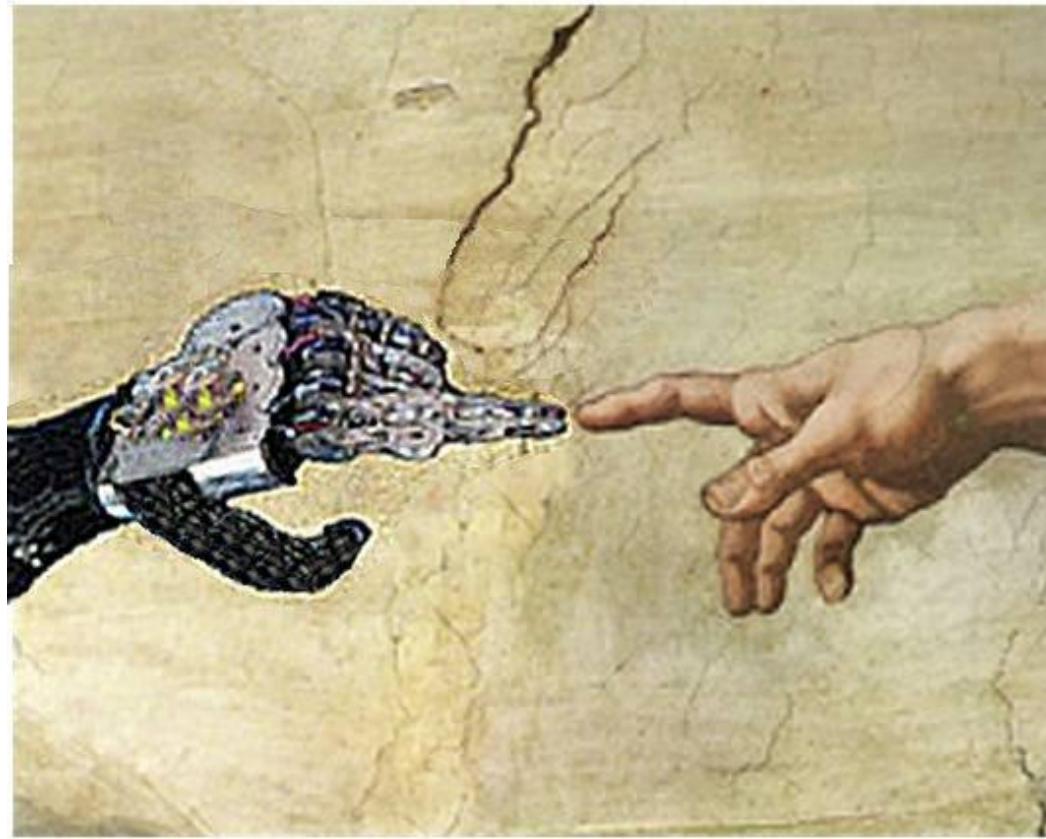
RECAP PART 1

- Prometheus: chained to rock, released by initiation and sacrifice of centaur
 - Image of our times, we are so chained, centaur within each
- Hephaestus: thrown off Olympus, returns on donkey
 - God of technology and fire, one foot malformed
- Rise of artificial intelligence and artificial soul
 - Why? Evolution? Stay tuned for answer next week
- Merging of Mankind and Machine
 - Science of prosthesis, will centered
 - Why? Evolution? Stay tuned for answer next week

spirit

soul

life



END PART 1 Q&A