PROJECT

Bioethics
frederickuu.org/fcc

DATE
6 sessions
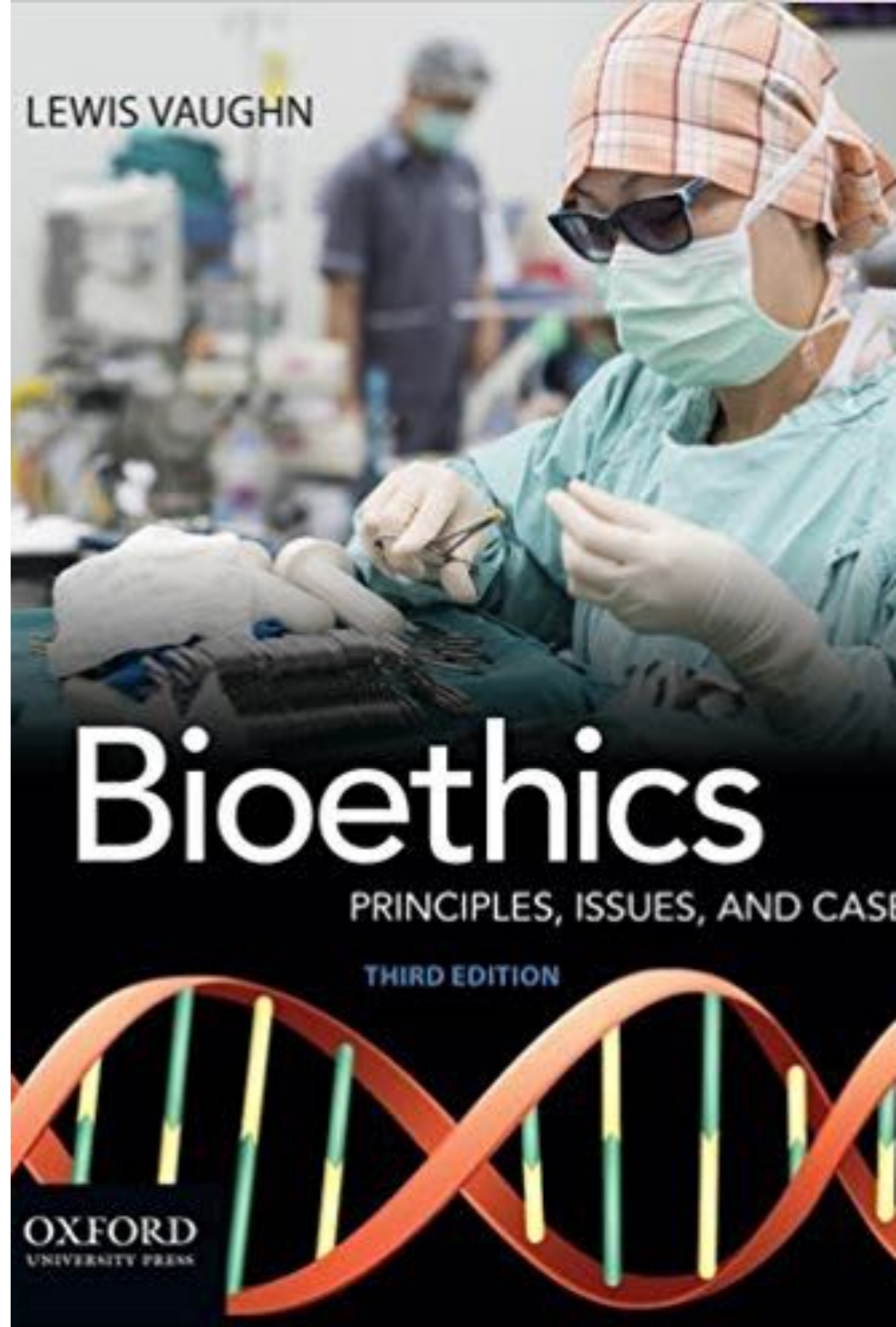
CLIENT
March 12, 10-11:30am (6 sessions)

Covenant

- Use **"I" statements**: *speak from your own experience*.

- **Ask permission before sharing** other participants' stories outside the group.

- **Lean-in, lean-back:** be conscious of the level of participation that you bring to the conversation. "Share the airspace" to allow everyone a chance to speak before you speak again.

- You always have **permission to "pass."**

Housekeeping

- [Are you receiving emails?]

- 21-page Case Study PDF

LEWIS VAUGHN

Bioethics

PRINCIPLES, ISSUES, AND CASE[S]

THIRD EDITION

OXFORD
UNIVERSITY PRESS

* *Session #1: <u>Contemporary Issues</u>: Revolutionary genome-editing technology CRISPR*

* *Session #2: Bioethical Case Studies*

* *Session #2 <u>Contemporary Issues</u>: Biotechnologies that will boost human physical & mental performance to unprecedented levels*

* **Session #4: Biotech, part 2**

  * Moral Reasoning

  * <u>Paternalism & Autonomy</u>: Before class, please review the "Cases for Evaluation" marked "Ch. 3" ("pages 91-93") of the 21-page PDF.

* **Session #4**: <u>Truth-telling & Confidentiality:</u> Before class, read "Cases for Evaluation" marked "Ch. 4" ("pages 152-153")

  * <u>Informed Consent</u>: Before class, read "Cases for Evaluation" marked "Ch. 5" ("pages 206-207").

* **Session #5**: <u>Human Research</u>: Before class, read "Cases for Evaluation" marked "Ch. 6" ("pages 254-258") of the 21-page PDF.

  * <u>Reproductive Technologies</u>: Before class, read "Cases for Evaluation" marked "Ch. 8" ("pages 425-427").

* **Session #6**: <u>Genetic Choices</u>: Before class, read "Cases for Evaluation" marked "Ch. 9" ("pages 557-558") of the 21-page PDF.

  * <u>Dividing Up Health Care Resources</u>: Before class, read "Cases for Evaluation" marked "Ch. 8" ("pages 732-735").

Check-in

- Further thoughts on previous sessions?

- "Show & Tell"

  - nytimes.com/2017/09/28/health/zika-mutation-microcephaly.html (Helen)

  - https://www.washingtonpost.com/news/speaking-of-science/wp/2017/09/28/zika-was-a-mild-bug-a-new-discovery-shows-how-it-turned-monstrous/ (Lisa)

  - twitter.com/iamdylancurran/status/977559925680467968?s=11

  - nytimes.com/2018/03/31/business/tesla-crash-autopilot-musk.html

  - nytimes.com/2018/03/31/business/media/amazon-google-privacy-digital-assistants.html

  - https://www.eiuperspectives.economist.com/sites/default/files/EIU_ATT_The%20workforce%20of%20the%20future_PDF_0.pdf (Toni)

  - https://www.axios.com/newsletters/axios-am-b3a940b7-24a2-479b-98e4-4ac4f71be130.html (Richard)

nytimes.com/2018/04/01/technology/retailer-stores-automation-amazon.html

- Global race to automate stores is underway among several of the world's top retailers and small tech start-ups, which are motivated to shave labor costs and minimize shoppers' frustrations, like waiting for cashiers.

- Companies are testing robots that help keep shelves stocked

- High-tech systems like the one used by Amazon Go (internet retailer's experimental convenience shop in downtown Seattle) completely automate the checkout process. Hundreds of cameras near the ceiling and sensors in the shelves help automatically tally the cookies, chips and soda that shoppers remove and put into their bags. Shoppers' accounts are charged as they walk out the doors.

- China, which has its own ambitious e-commerce companies, is emerging as an especially fertile place for these retail experiments.

- These new technologies could add further uncertainty to the retail work force, which is already in flux because of the growth of online shopping. An analysis last year by the World Economic Forum said 30 to 50 percent of the world's retail jobs could be at risk once technologies like automated checkout were fully embraced.

- Raised concerns among privacy researchers because of the mounds of data that retailers will be able to gather about shopper behavior as they digitize their locations. Inside Amazon Go, for instance, the cameras never lose sight of a customer once he or she enters the shop.

- "Unanimously, there was an element of embarrassment because here is an online retailer showing us how to do brick and mortar, and frankly doing it amazingly well".

- Nowhere are retailers experimenting more avidly with automating store shopping than in China, a country obsessed by new tech fads. One effort is a chain of more than 100 unmanned convenience shops from a start-up called Bingo Box, one of which sits in a business park in Shanghai. Shoppers scan a code on their phones to enter and, once inside, scan the items they want to buy. The store unlocks the exit door after they've paid through their phones.

- At its huge campus south of Beijing, JD is testing a new store that relies on computer vision and sensors on the shelves to know when items have been taken. The system tracks shopping without tagging products with chips. Payment, which for now still happens at a kiosk, is done with facial recognition.

- Back in the United States, Walmart, the world's largest retailer, is testing out the Bossa Nova robots in dozens of its locations to reduce some tedious tasks that can eat up a worker's time. The robots, which look like giant wheeled luggage bags, roll up and down the aisles looking for shelves where cereal boxes are out of stock and items like toys are mislabeled. The machines then report back to workers, who restock the shelves and apply new labels.

nytimes.com/2018/04/01/technology/retailer-stores-automation-amazon.html

- Retailers are playing down the threat to jobs. Walmart, the largest private employer in the United States, says that it does not anticipate automation will lead to job losses, but rather that the new technologies are meant to redirect employees to spend more time helping customers find what they need.

- Some traditional retailers are also skeptical about whether the sort of automation in Amazon Go can move to large stores. They say the technology may not work or be cost effective outside a store with a small footprint and inventory.

- *—> Remember the "Seven Stages of Denial of Robots Doing Your Job"*

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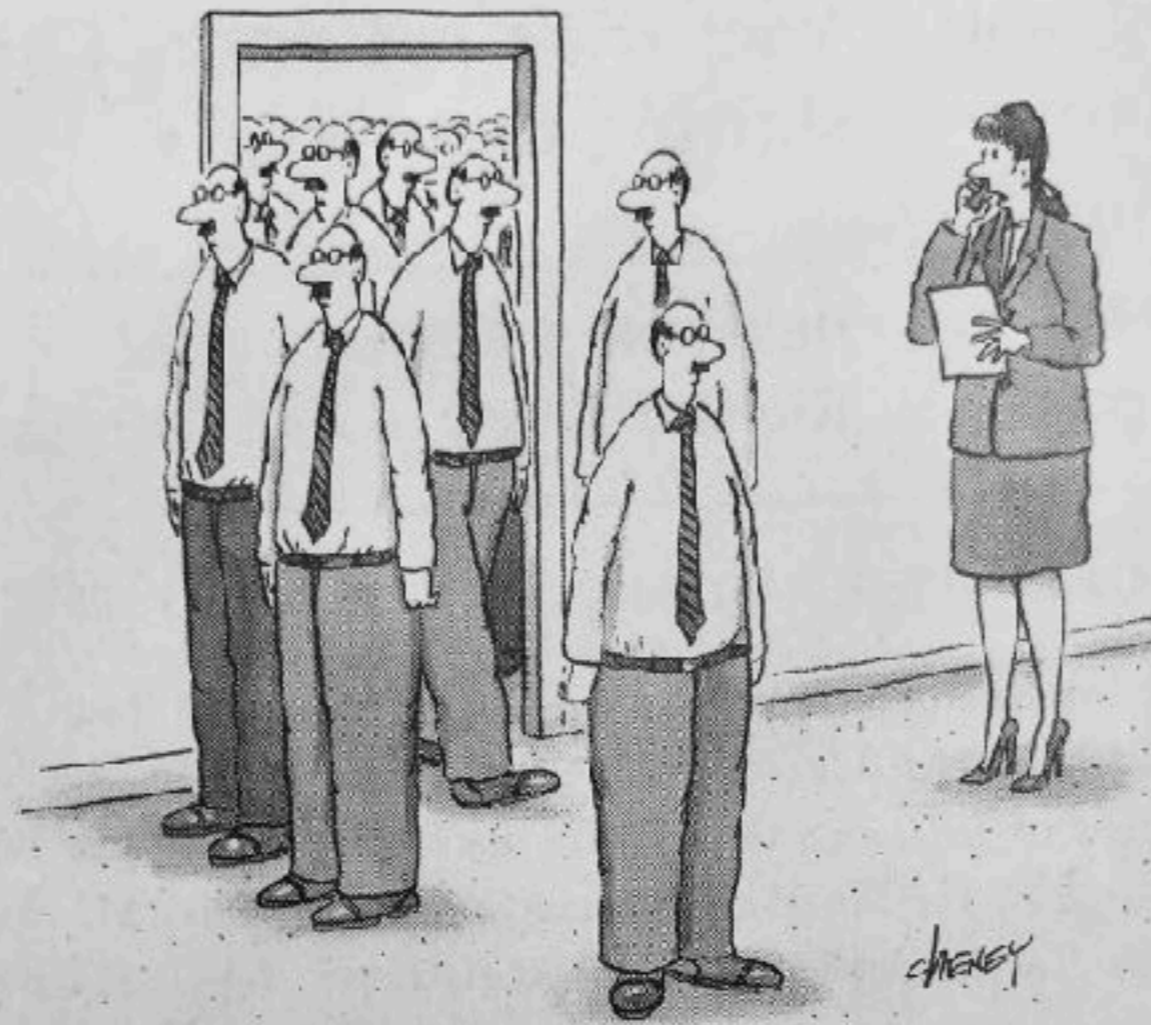
"Hold on, the Senate Committee on Women's Health is getting out."
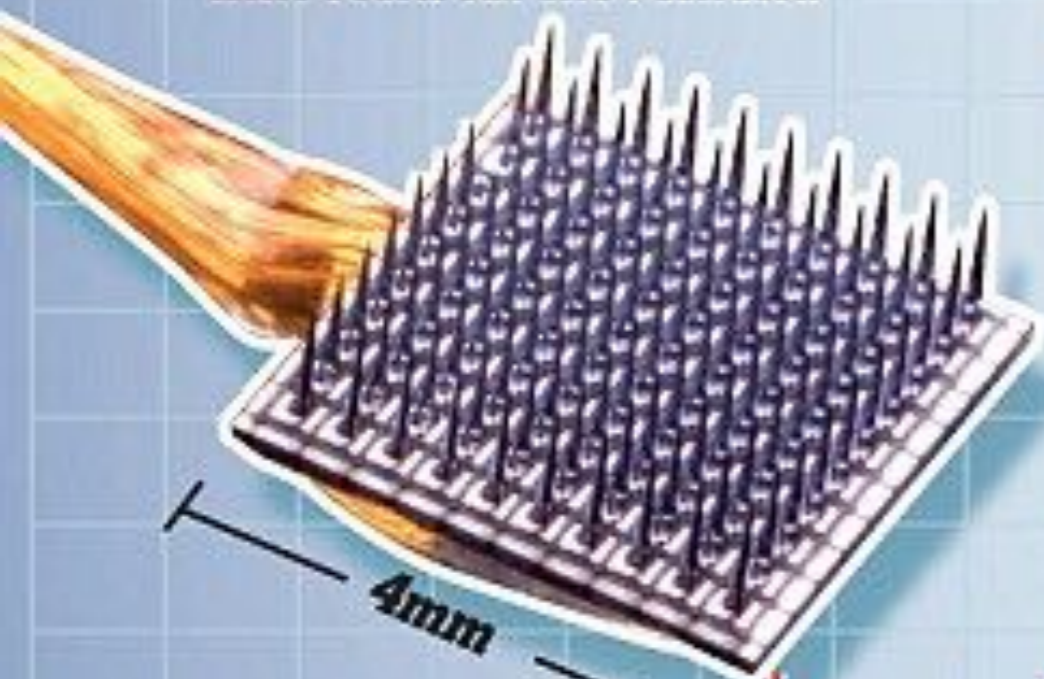Chris Janssen, San Jose, Calif.

"Describe him."
Tom Mardirosian, New York City

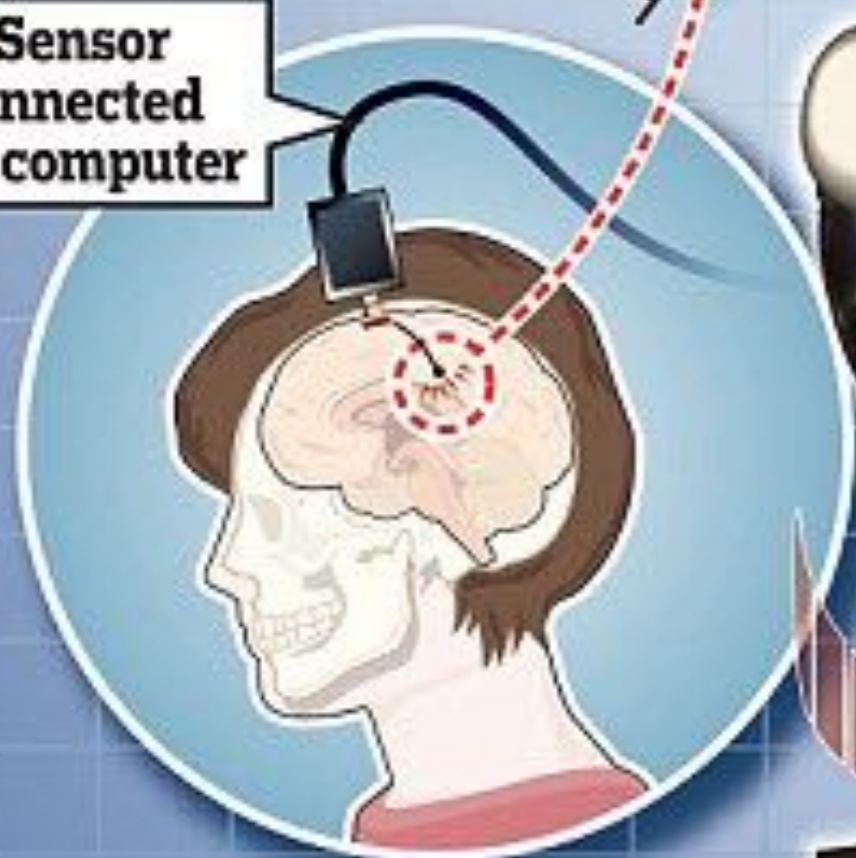"Never mind. It looks like they fixed the copier."
Craig Moreland, Okemos, Mich.

TURNING BRAIN WAVES INTO ACTION

1 Cathy Hutchinson has tiny sensor with 96 electrodes implanted into area of brain that controls movement.

2 When she thinks about picking up the flask and drinking the coffee inside it, electrodes on the chip intercept brain signals and send to the computer.

4mm

■ Sensor connected to computer

3 Computer decodes signals and activates the motors needed to move the robotic arm, take the flask towards Miss Hutchinson's mouth and tilt it, allowing her to sip coffee through a straw... and smile in delight

Cathy Hutchinson

How long will it be before you or I *(through thought alone)* can control a:

* Car

* Mechanical exoskeleton

* Android robot
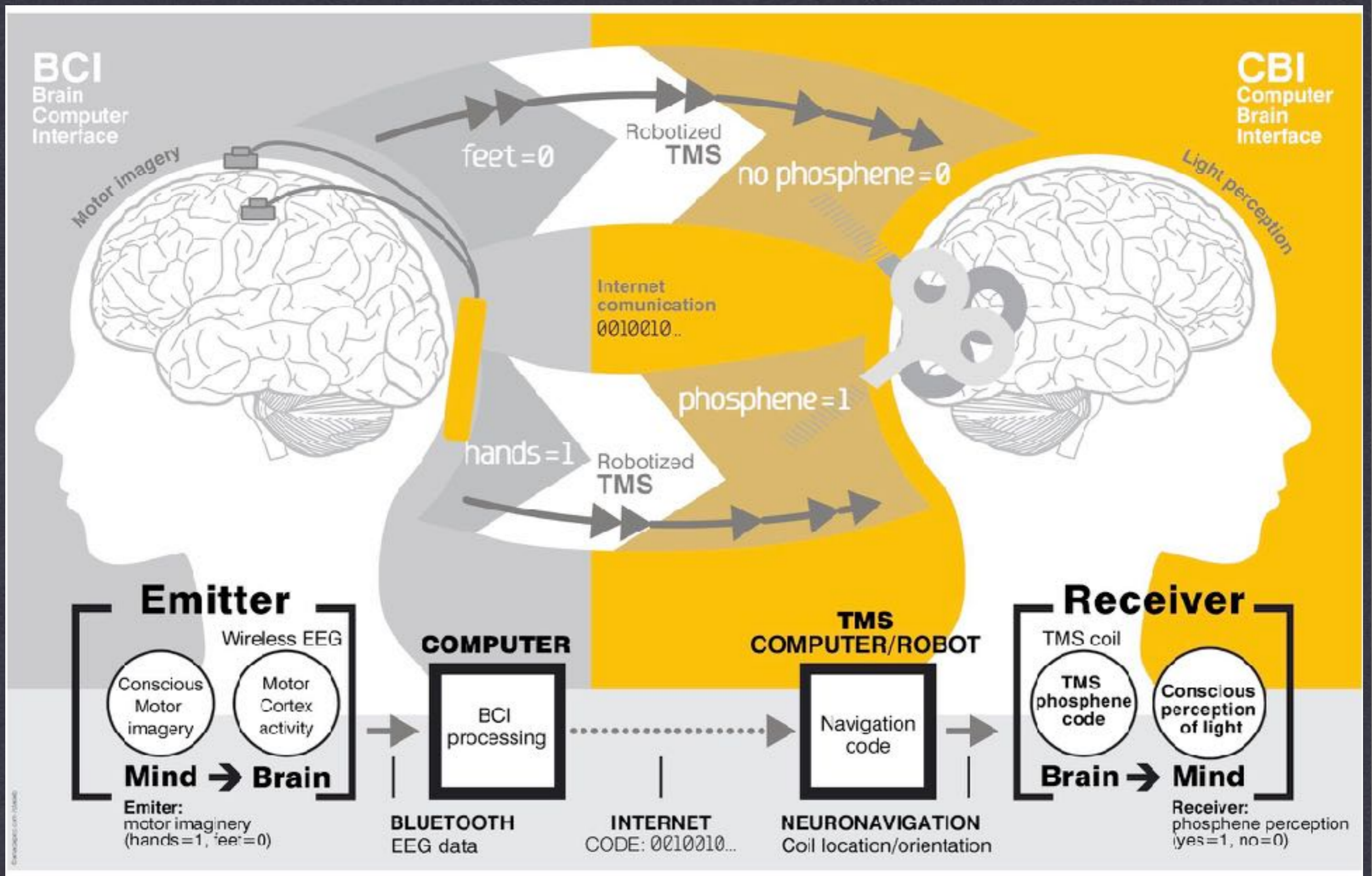
* Unmanned drone flying in the sky above
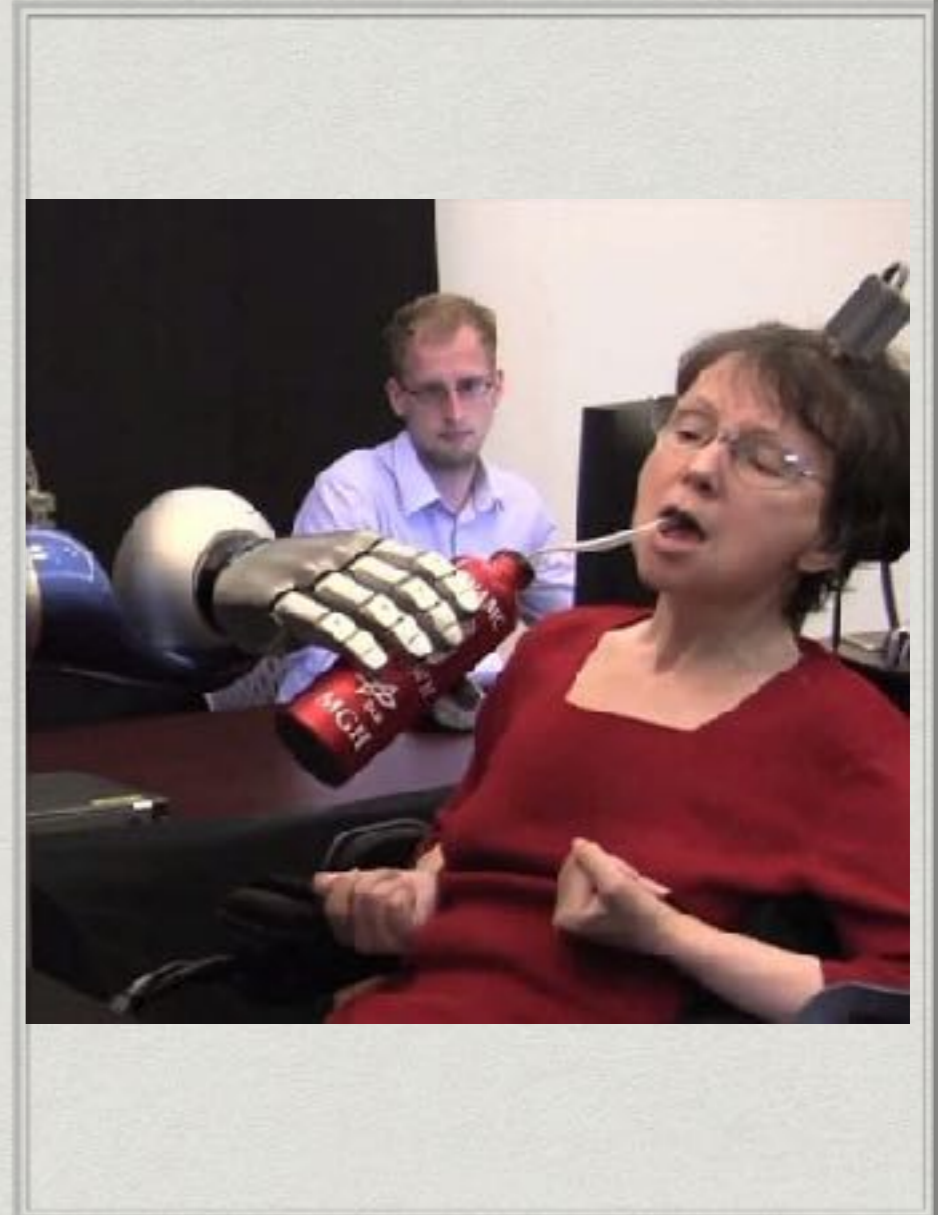
2012

Cathy Hutchinson

Next logical step:

* Wired and connect to each other through a computer interface, could you and I directly share our thoughts, memories, or feelings—*brain to brain*?


2012

Telepathic Communication

Bess 135-137

Neil Harbisson

* British-born cyborg artist and transpecies activist based in New York City.

* known for being the first person in the world with an antenna implanted in his skull and for being officially recognized as a cyborg by a government.

* His antenna sends audible vibrations in his skull to report information to him: electromagnetic radiation, phone calls, music, as well as video or images which are translated into audible vibrations.

* 2017: co-founded the Transpecies Society, an association that gives voice to people with non-human identities, raises awareness of the challenges transpecies face, advocates for the freedom of self-design and offers the development of new senses and organs in community.
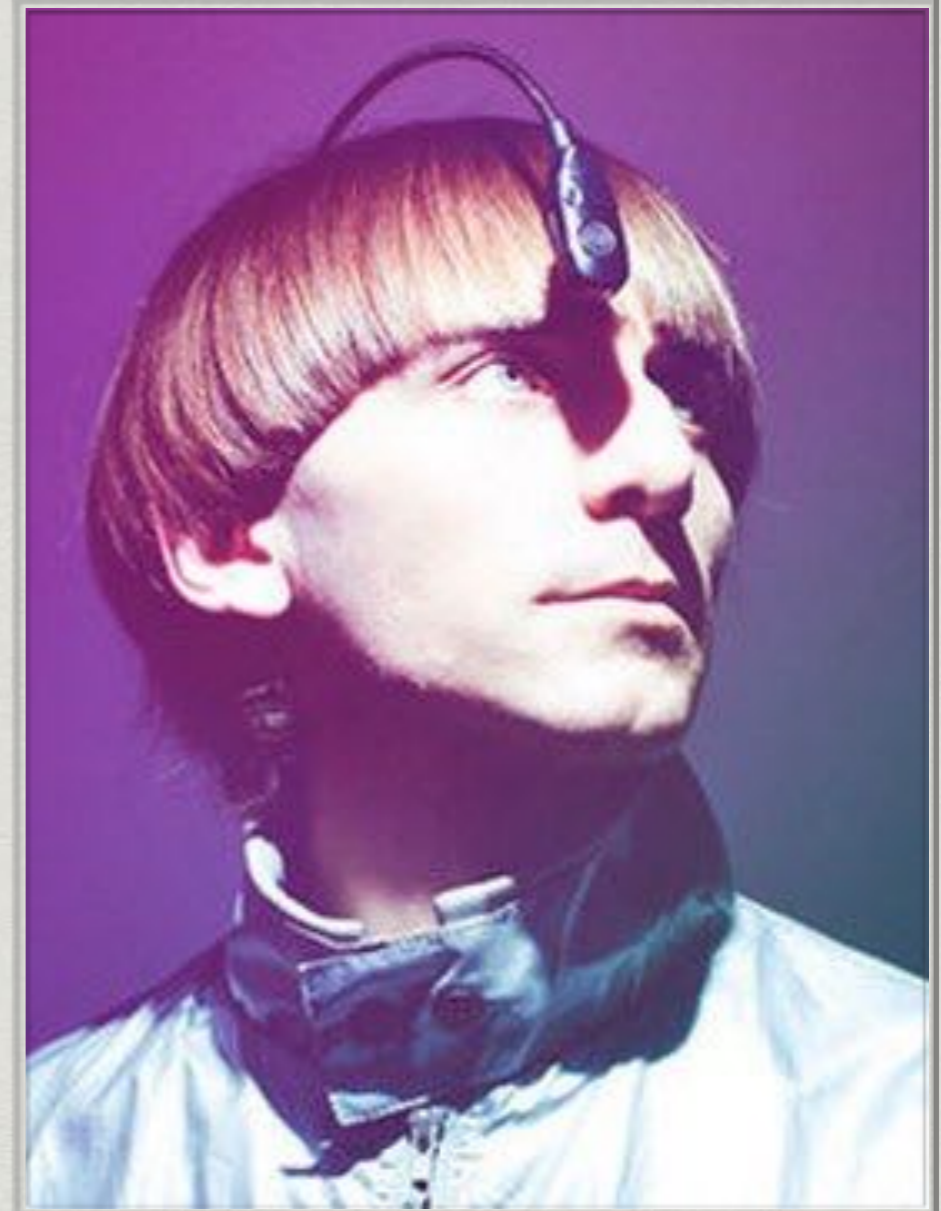
(1984 -)

Restoring the Senses

* cnn.com/2014/06/24/tech/innovation/bionic-eye-blind-man-argus (Or: p. 26-27)

* <u>Problem</u>: "invasive technology"—difficult, messy, expensive surgery that can fail and/or trigger the body's immune reactions, requiring a second surgery to remove
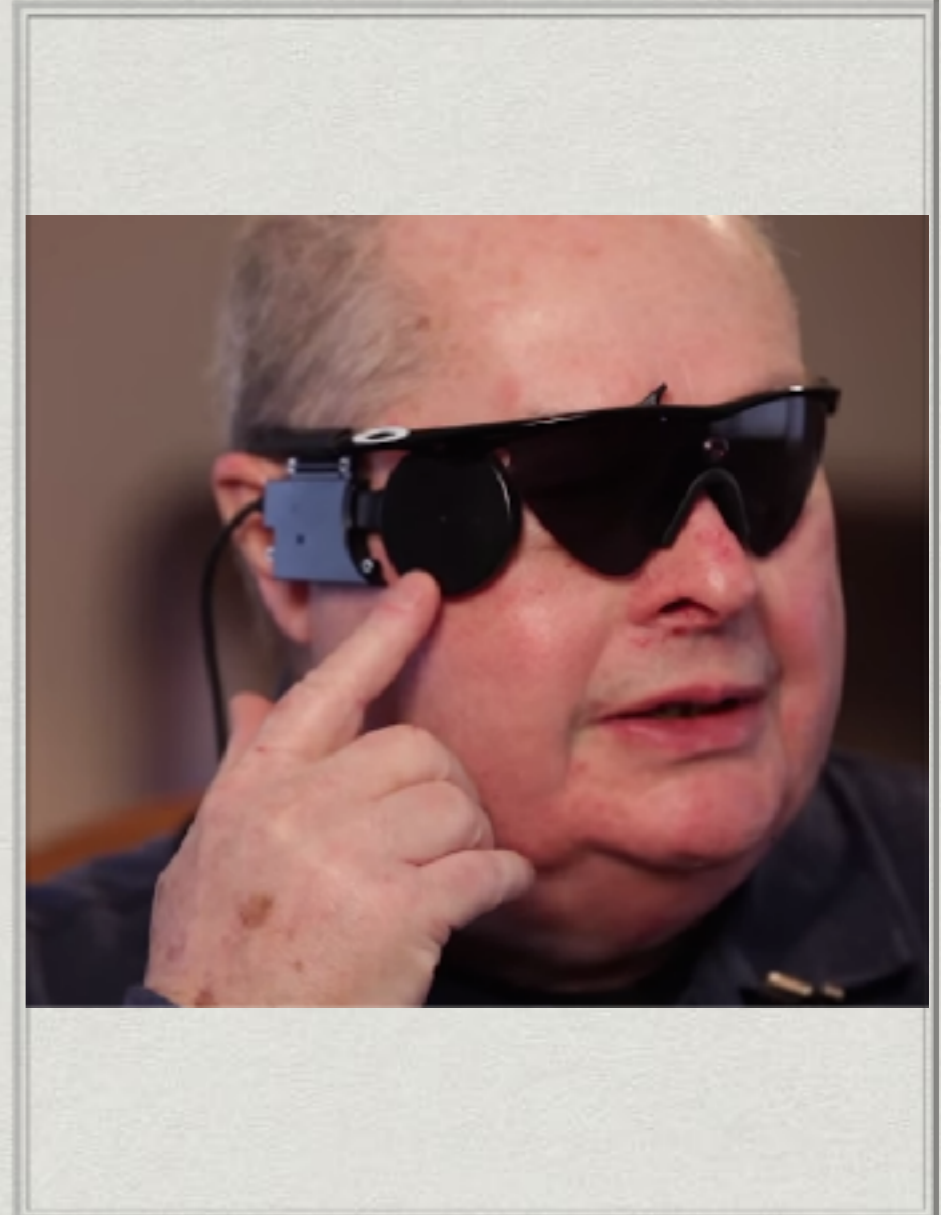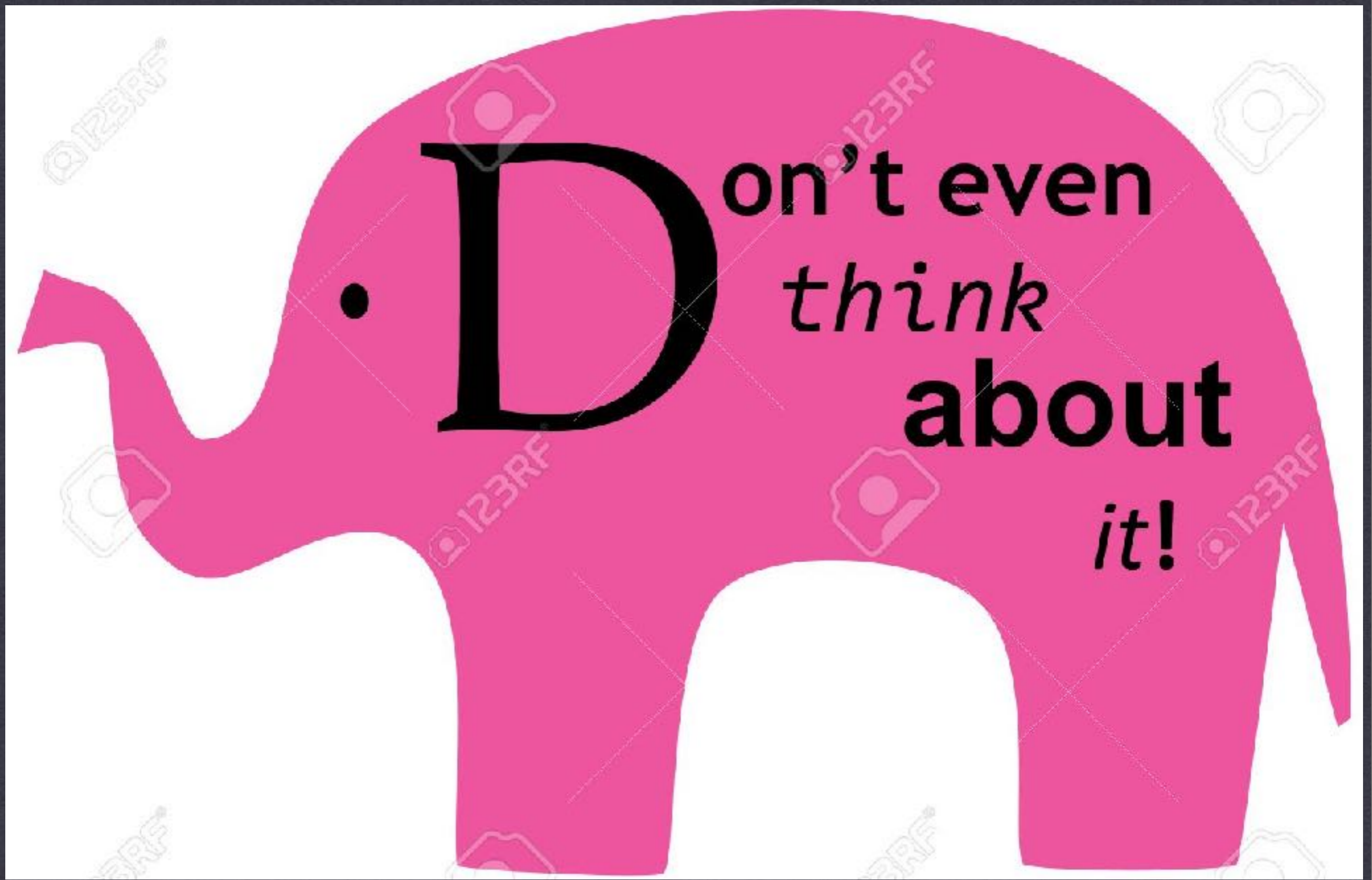
2002

Berlin Brain Computer Interface

* youtube.com/watch?v=qCSSBEXBCbY *(30 sec)*

  * No surgery

  * No implant

  * No fuss

* Slip on a stylish little headset, and you're good to go.

* "Noninvasive devices will predominate."

$129

Monitoring the Contents of the Mind

Bess 29-30

Altering States of Mind & Emotion: Pleasure centers

Feel-Space Belt

Bess 35-36

Terminator Fallacy

Paranoid cousin of the Jetsons Fallacy

✳ Machines will not be our enemies

   ✳ Machine will become part of us.

✳ Now: easily distinguish selfhood from vehicle

✳ Soon: machines integral part of body's functioning

✳ Already: How you feel when you lose your smart phone or lose electricity in house.

$129

Nanotechnology

* *Billionths* of a meter

* Nanometer:Meter::marble:Earth

* Human Hair: 75,000 nanometers in diameter

* Tiniest known bacteria: 200 nanometers
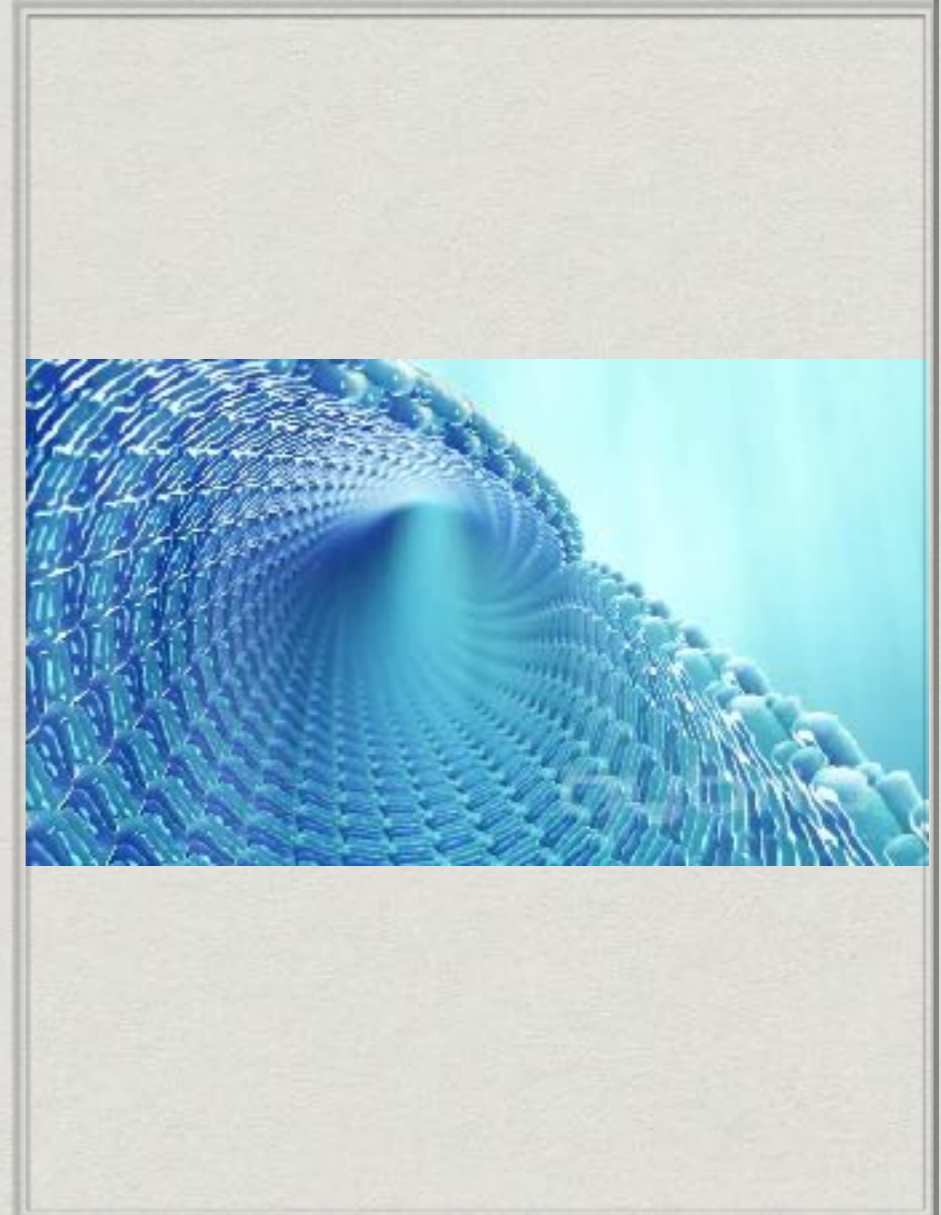
* DNA molecule: 2 nanometers in diameter
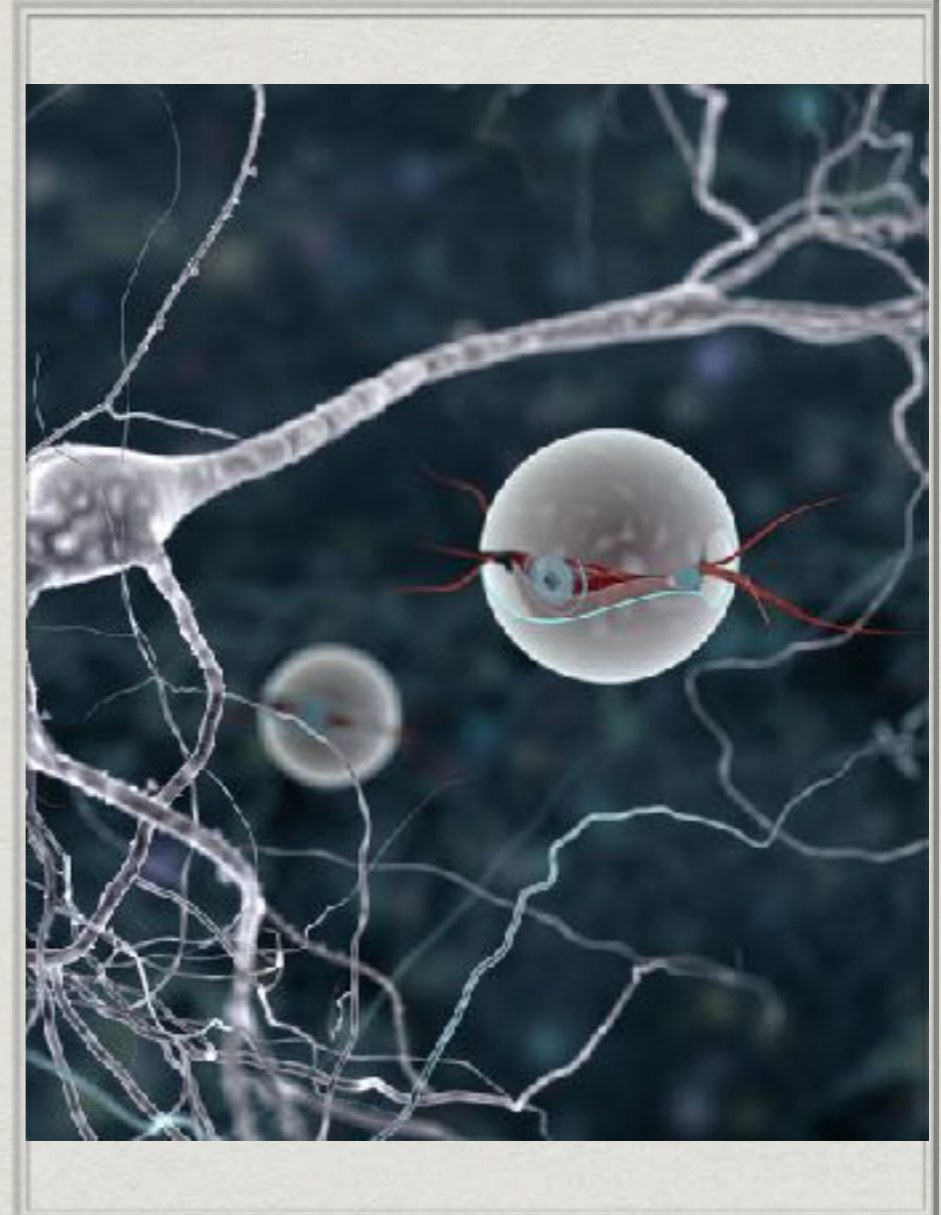
Nanotechnology

Quantum effects
(negligible in macro-sized objects):

* some materials become superconductors,

* others possess extraordinary tensile strength;

* copper becomes transparent,

* aluminum turns combustible.

$129

Oil spill —> Nanotechnology —> "Gray Goo" problems

Bess 58-59

PHOTO: DIANA WALKER/TIME LIFE PICTURE

Case Study: "Non-Mod" in 2058

Bess 90

The drugs of the future will be computers. The computers of the future will be drugs.

— Terence McKenna —

(1946 –2000)

AZ QUOTES

"Timothy Leary of the '90s":
American ethnobotanist, psychonaut,
& advocate for responsible use of psychedelic plants
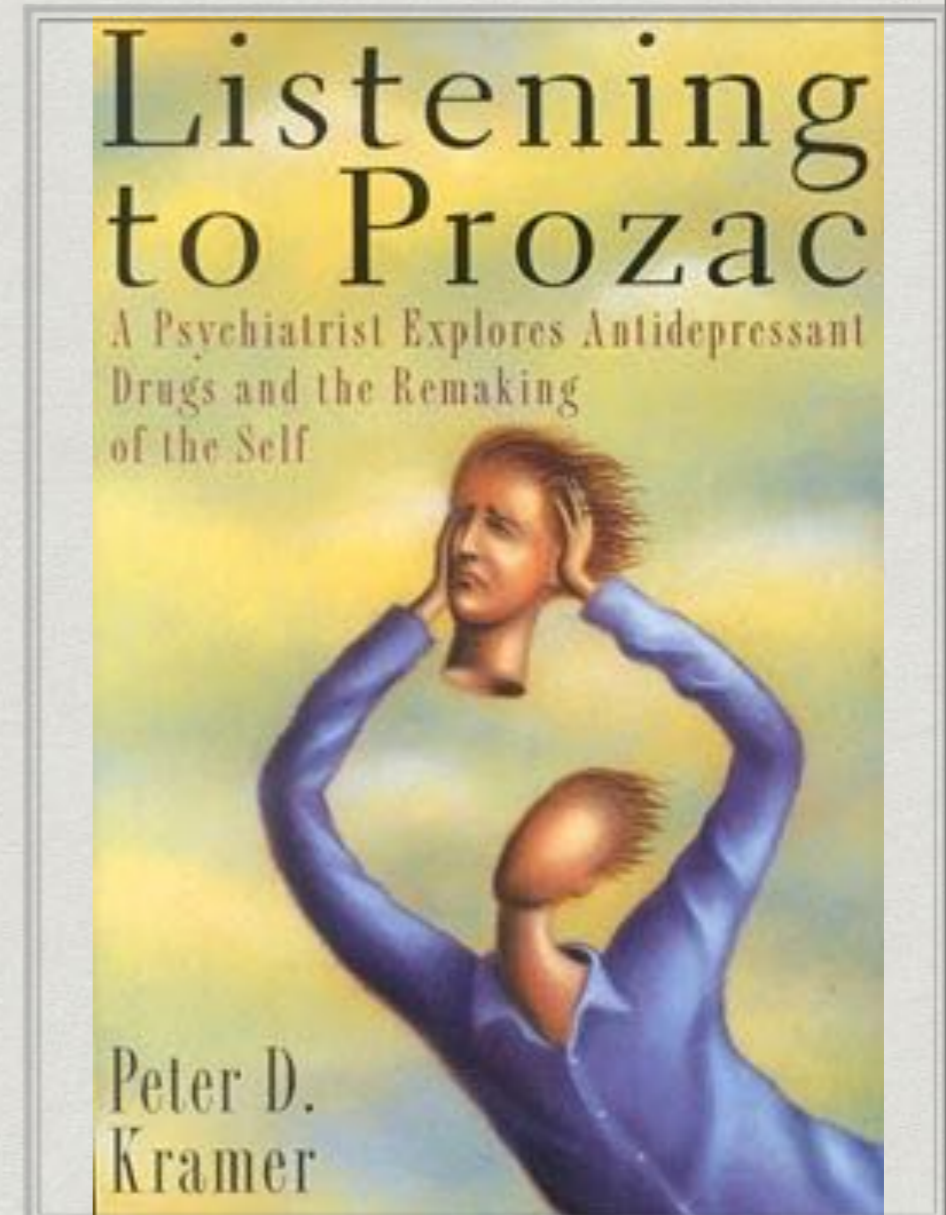
Amish [Wendell Berry]

Bess 92

Vignette: Pills

Bess 118-120

Potential Problems

* **Disconnection from reality** - including responding appropriately to threats as well as aspects of ourselves that we may need to know about

* **Impoverishment of our experience** - might be more contented, but *shallower* with a narrower range of sensations and perceptions.

* **Reinforcement of oppressive cultural expectations -** cosmetic psychopharmacology could increase pressure to conform to social norms that proscribe "bad" feels

*Tremendous benefits,*
but do we risk erasing our humanity?

Listening to Prozac

A Psychiatrist Explores Antidepressant Drugs and the Remaking of the Self

Peter D. Kramer

1993

"Morality Pill" - Peter Singer

* c.f. Psychology experiments: Obeying Authority, Good Samaritan, etc.

* Likely that, similar to experiments on rats: humans are spread along a continuum of readiness to help others

* Brain research is exploring possibly biochemical differences b/w brains of those who *help* others & brains of those who do *not*.

* Is the key to a better society getting everyone to story oxytocin every few minutes? [*"love/ trust/warm-fuzzy hormone"*]

**Could this lead to a "morality pill":
a drug that makes us more likely to help?**
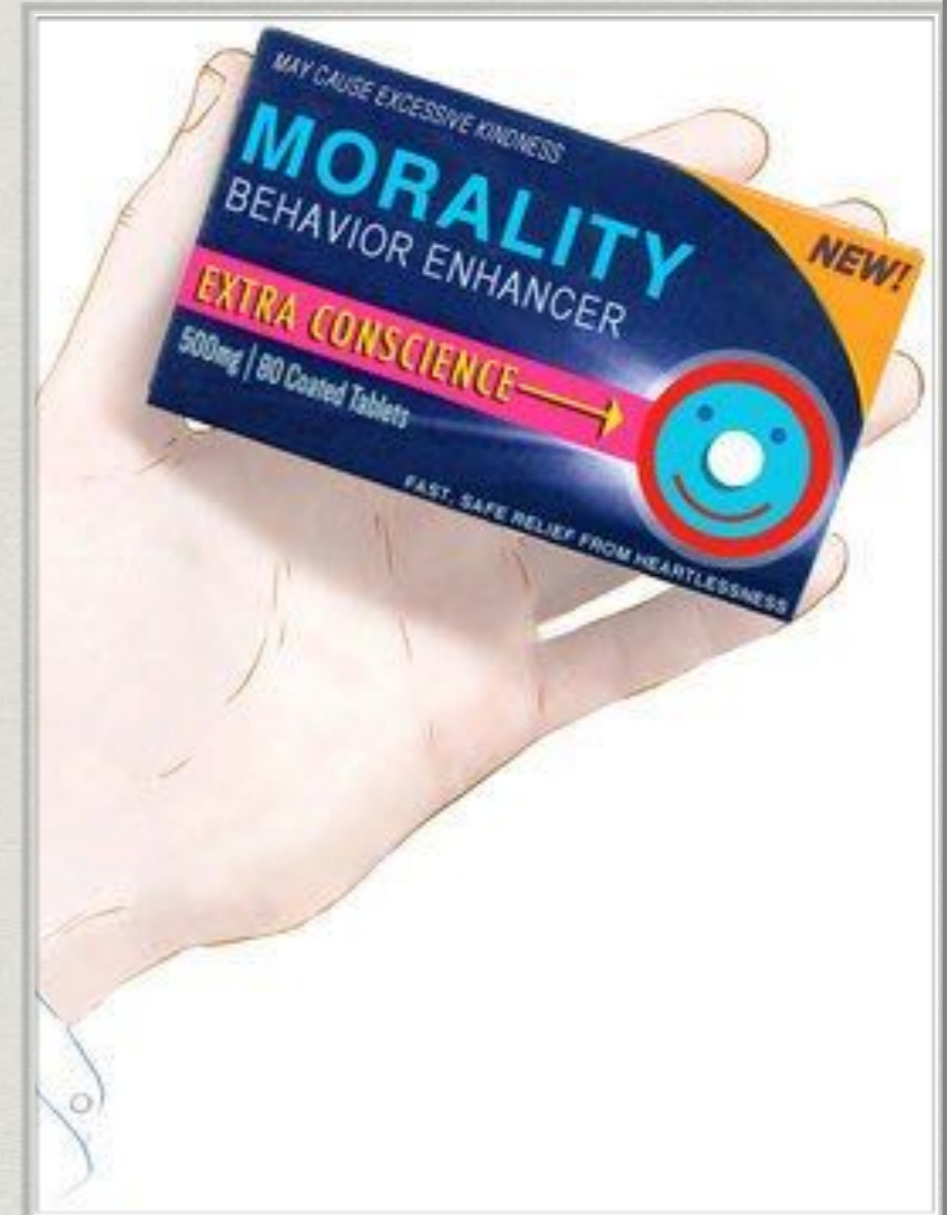
2012

"Morality Pill"

* Criminals - alternative to prison: drug-releasing implant that would make them less likely to harm others?

* Governments - screen people to discover those most likely to commit crimes?

   * Much greater risk of committing a crime might be offered the morality pill

   * Refused - might be required to wear a tracking device that would show where they had been at any given time, so that they would know that if they did commit a crime, they would be detected.

vicious gang leader undergoes a procedure that makes him incapable of violence

AnTHONY BuRGESS

50th Anniversary Edition

A CLOCKWORK ORANGE
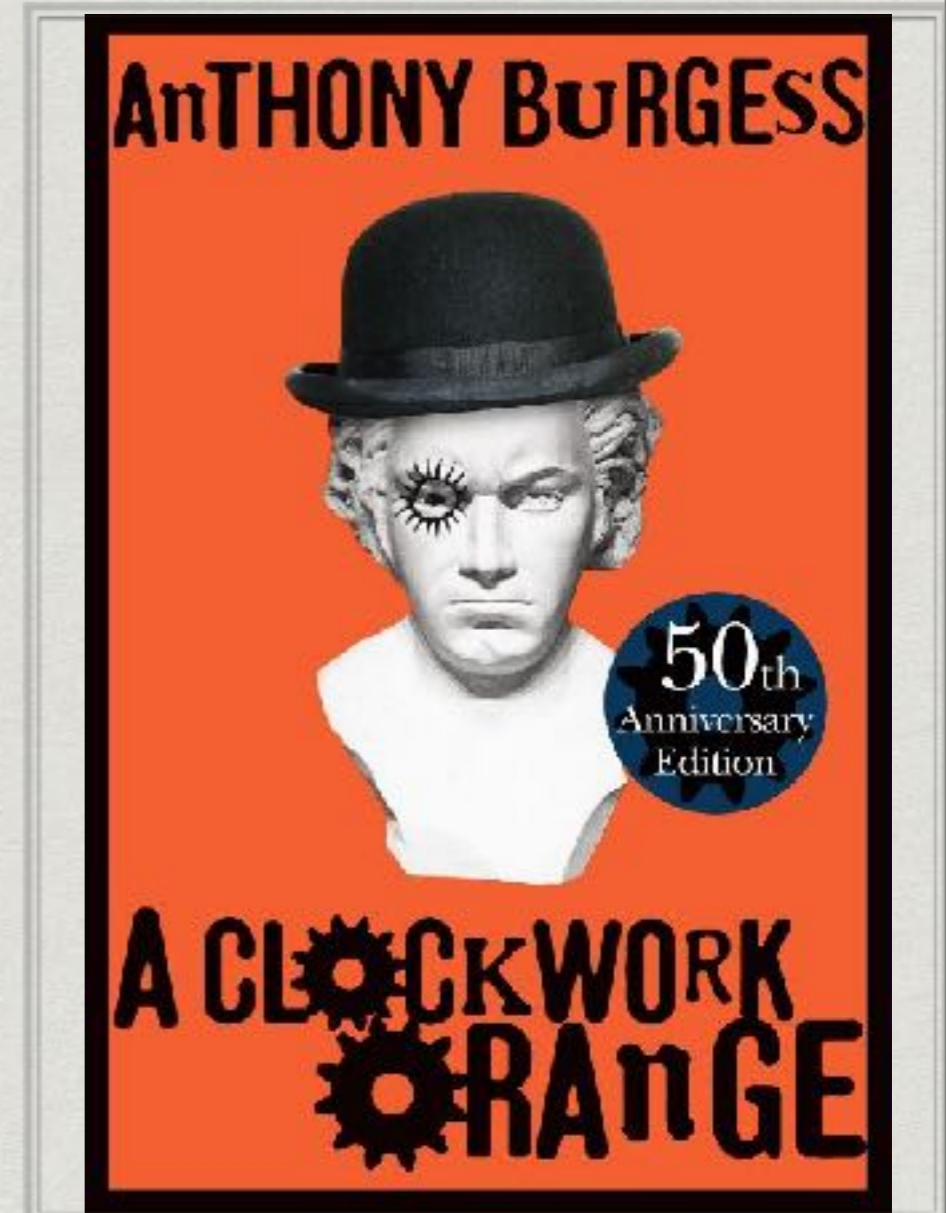
1962 novel
1971 film

"Morality Pill"

* Moral enhancement need not necessarily make you feel irresistibly compelled *("Automaton of kindness")*

* <u>Rather</u>: gently alter your underlying inclinations and impulses, shifting them toward the altruistic end of the normal human spectrum

* <u>Predispose</u> - empathy, kindness, and honesty

* <u>Buddha's Brain</u>: "like *Velcro for negative* experiences and *Teflon for positive* ones" [counterbalance obsolete evolutionary bias]

UNFIT FOR THE FUTURE

The Need for Moral Enhancement

Ingmar Persson AND Julian Savulescu
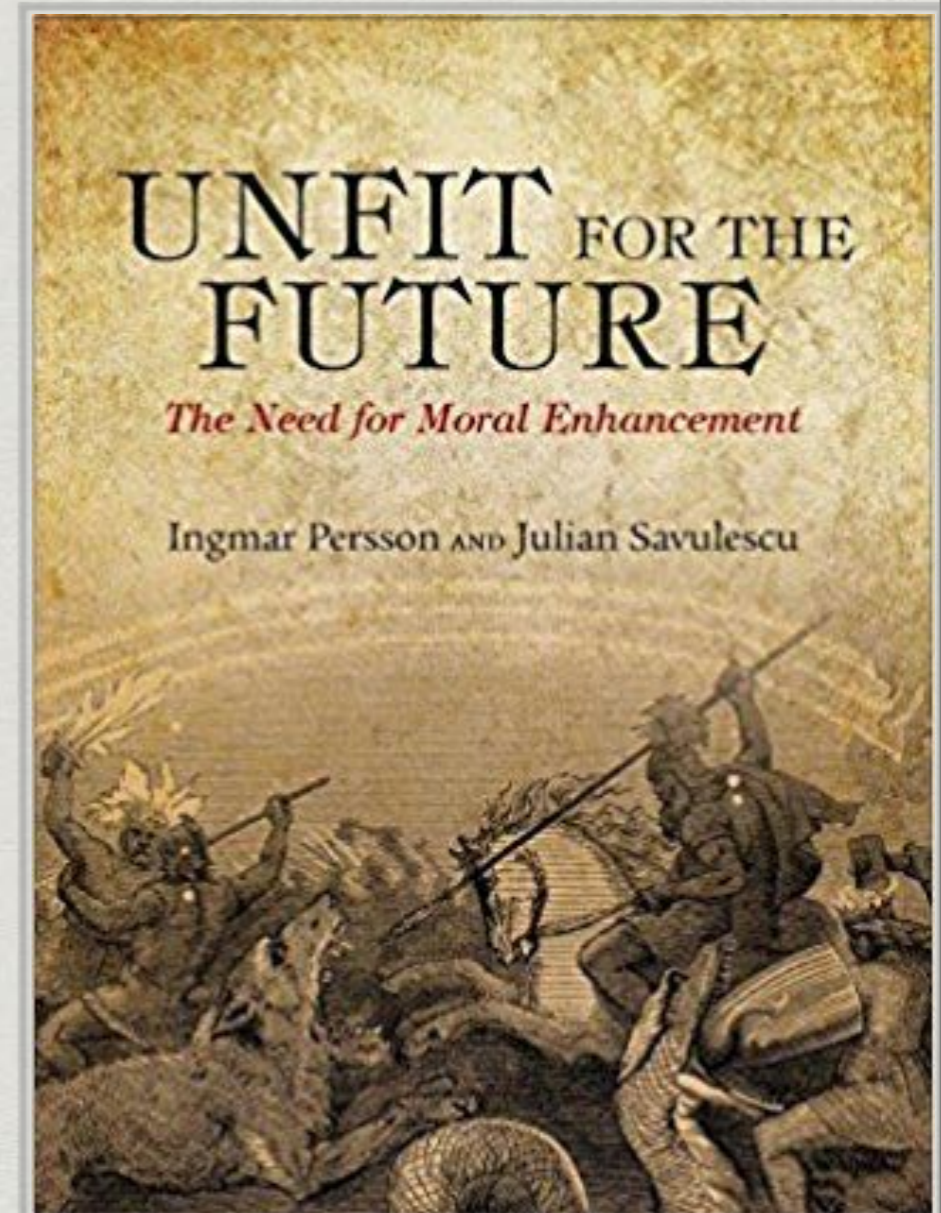
2012

Mass Exodus into Virtual Reality

660 million people (~10% of humanity) spend an average of 13 hours/week / in video/online games.

Coming trends in "Synthetic Experiences"

1. **Lifelike Realism** - increasingly immersive and convincing *[scanning own face/body/quirks for avatar]*

2. **Seamless Access** - increased fluidity/ subtlety of intention translated into VR will ramp up realism & emotional impact

3. **Blurred Boundaries** - "Primary Reality" will be partially overlaid by elements of the virtual ("augmented reality")

Oculus Rift
(Bess 145)

Physical/Virtual Reality

* American science fiction action adventure film

* directed by Steven Spielberg

* based on Ernest Cline's 2011 novel

* youtube.com/watch?v=ixWL1BWi44U

March 29, 2018

Hybridization of physical/VR

* The Sublime and Scary Future of Cameras With A.I. Brains

Next Gen
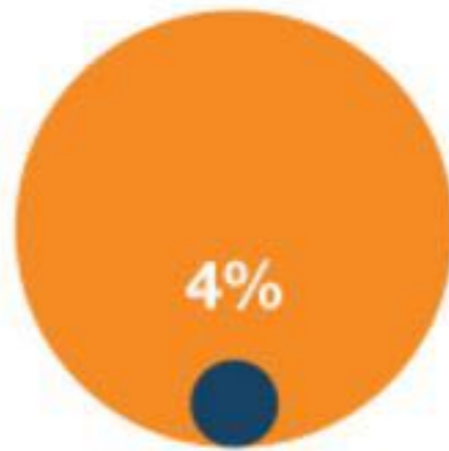
Future of Sex

Environmental impact compared

● Conventionally farmed beef   ● Lab-grown beef

55% — Energy use

4% — Greenhouse gas emissions

1% — Land use

Source: Environmental Science & Technology Journal

Future of Food

BESS 164-5

Wagner's Gesamtkunstwerk: "Total Artistic Work"

Future of the Arts (Bess 168)

Future of War

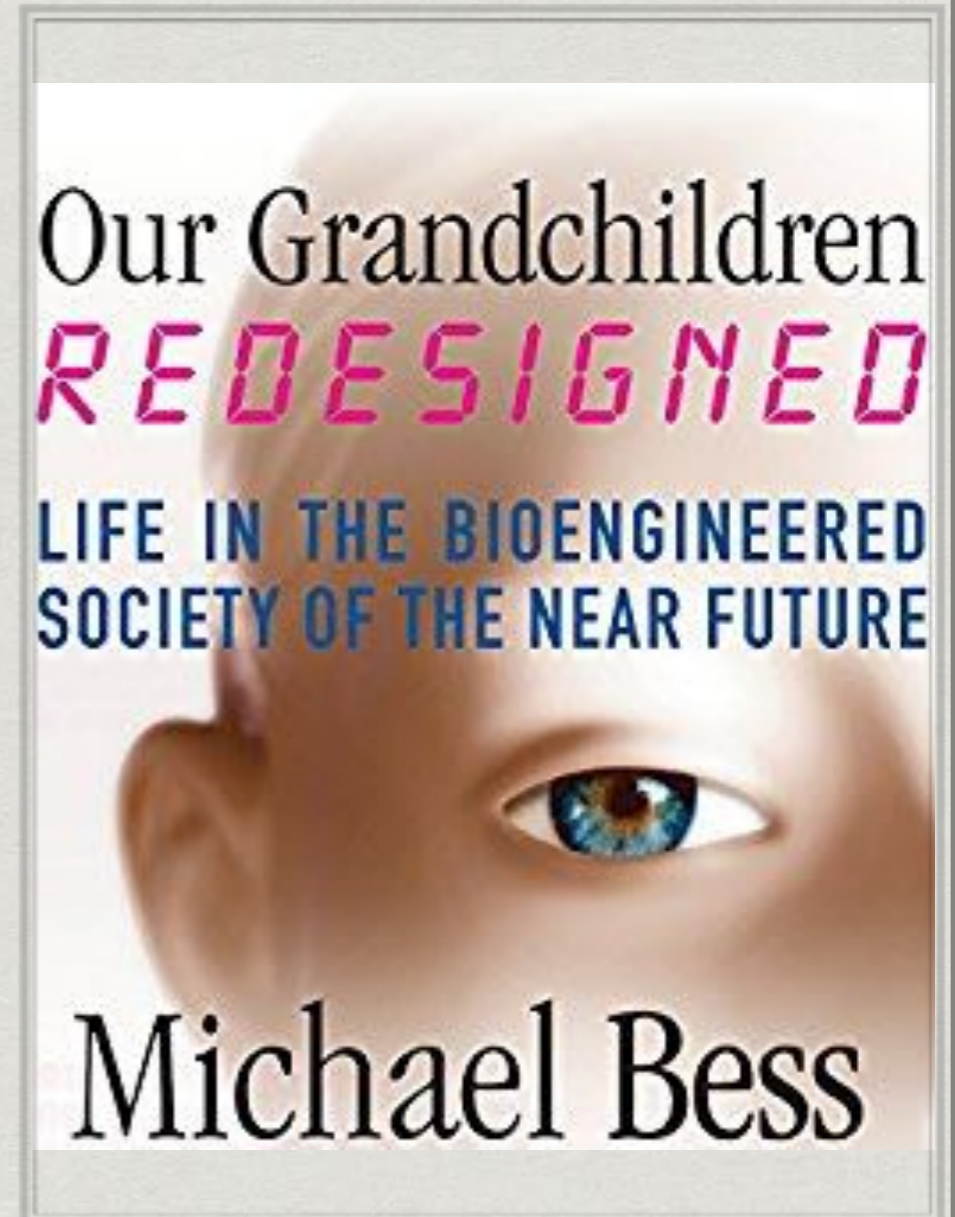wired.com/story/atlas-robot-does-backflips-now/

Imagine thousands of these with firepower

Super-intelligent robots, transmogrified citizen-soldiers (rogue nations?!)

Humane Values in a World of Moderate Enhancements

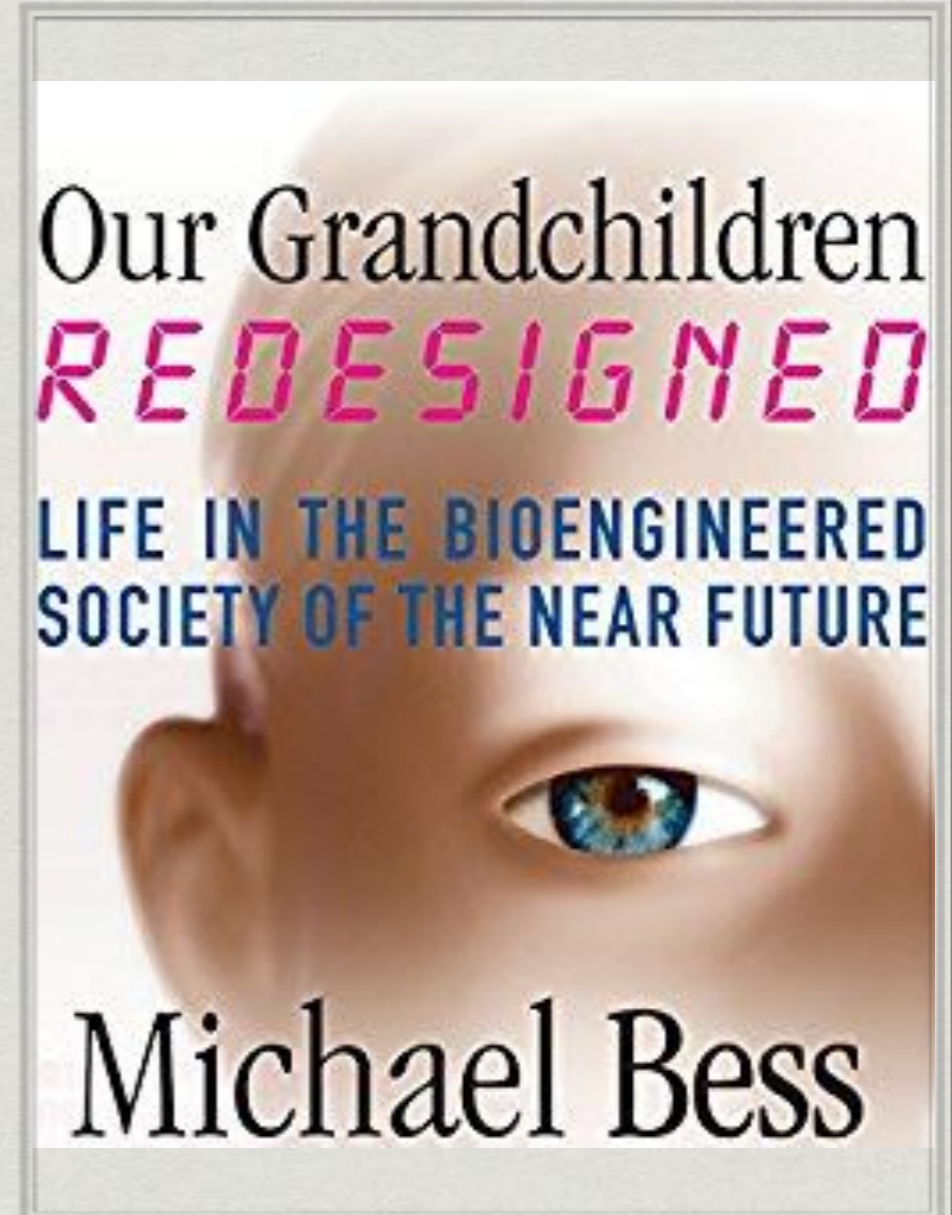Can we reap many of the benefits while diminishing the dangers?

7 Cautions

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LIFE IN THE BIOENGINEERED SOCIETY OF THE NEAR FUTURE

Michael Bess

Beacon Press
2015

Humane Values in a World of Moderate Enhancements

1. Radical Inequality: will the most effective enhancement technology be prohibitively expensive & accessible only to rich?

1. Bio-stratisfied Caste System?

2. <u>Or</u>: System of Universal Access - "basic package" of enhancement technologies available to all citizens *(none compelled, but all have options)*
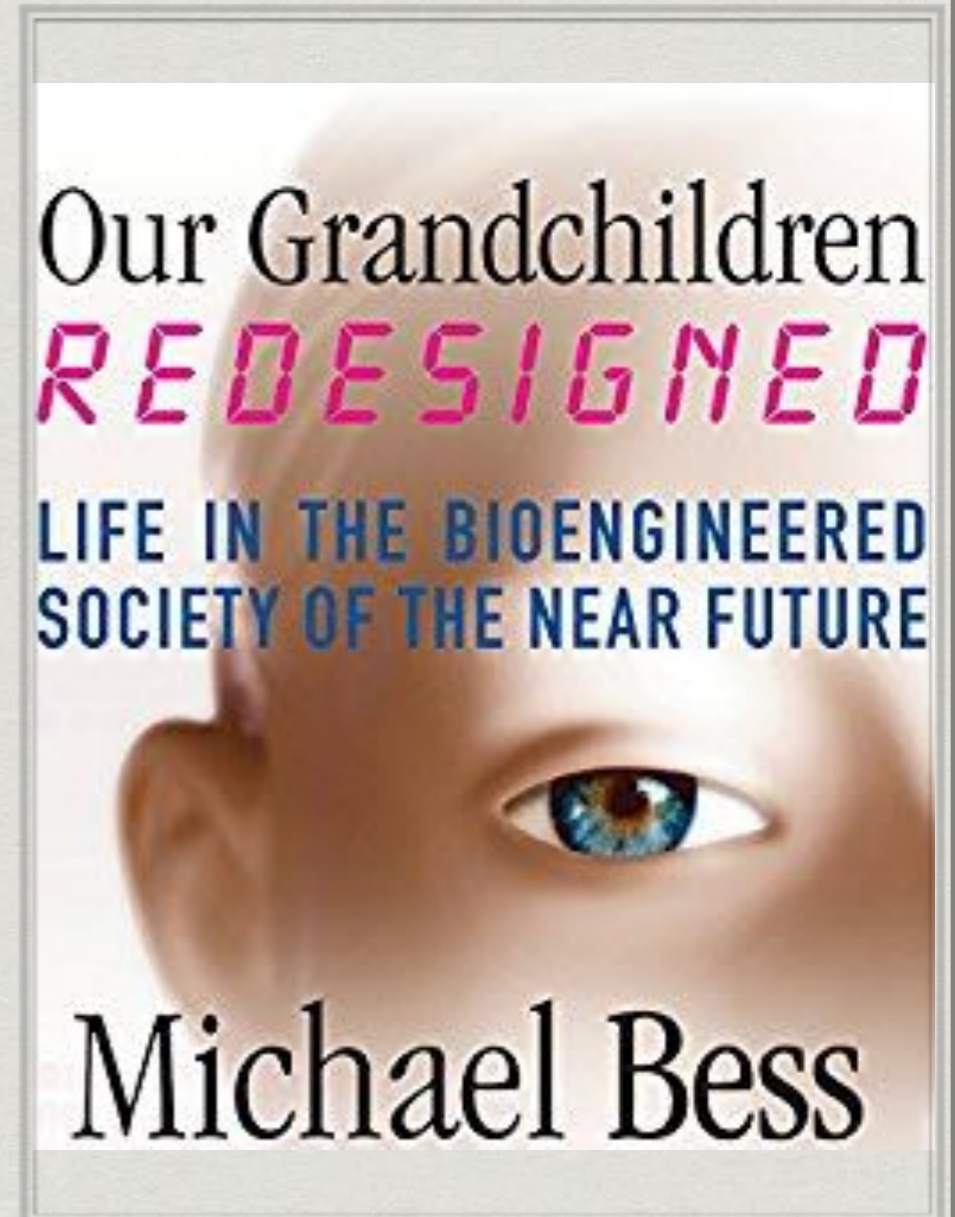
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Humane Values in a World of Moderate Enhancements

2. Species fragmentation

* "Counter-clustering" strategies

* Aggressively promote ethos of tolerance and respect across clusters

* New technologies might allow individuals to place themselves temporarily "in the shoes" of a person from a separate enhancement cluster, experiencing the world from that person's perspective
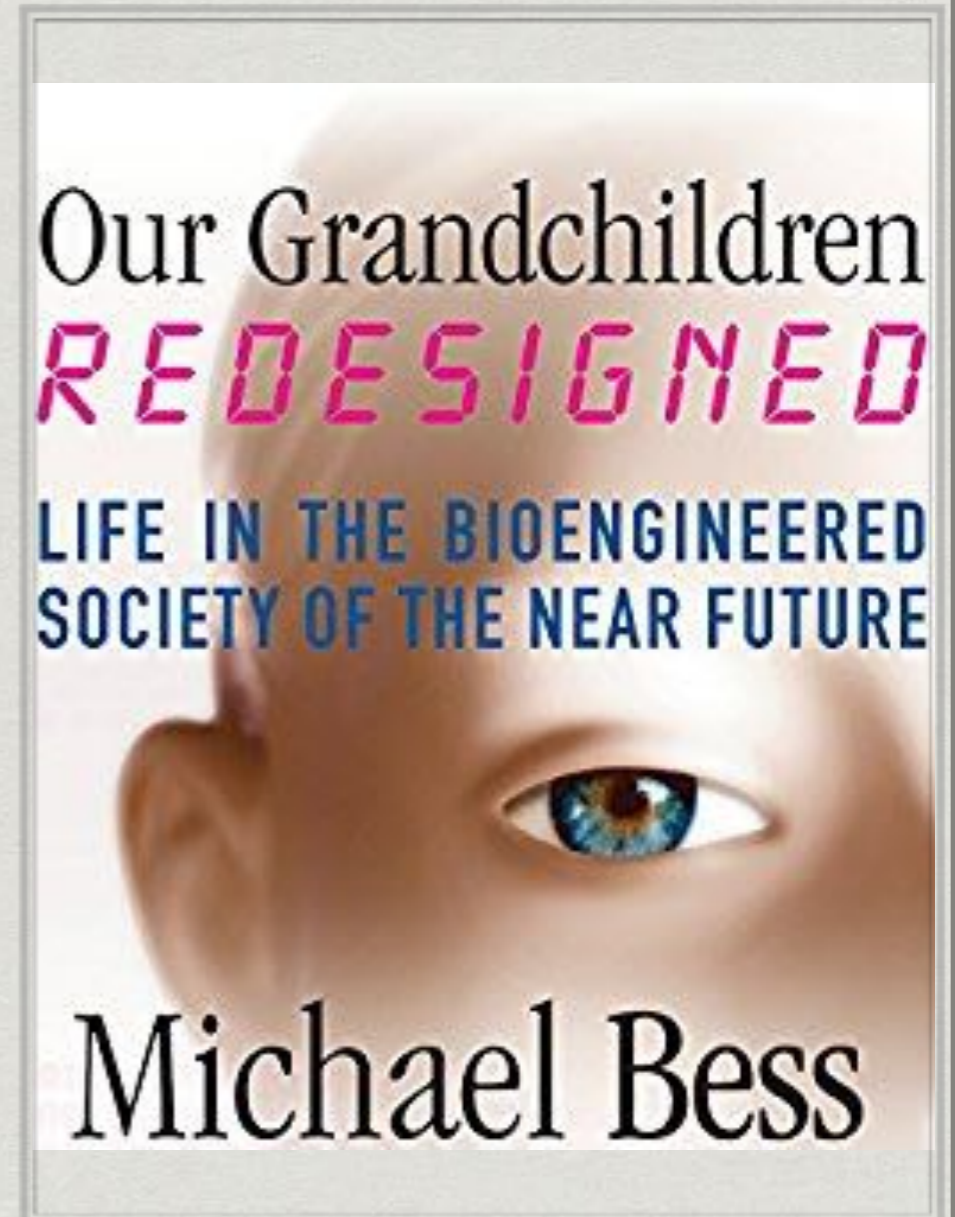
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Humane Values in a World of Moderate Enhancements

3. New Kinds of Suffering

✳ Create governmental ethics board to establish clear guidelines for humane modification of animals *(personhood of "augmented orangutans")*

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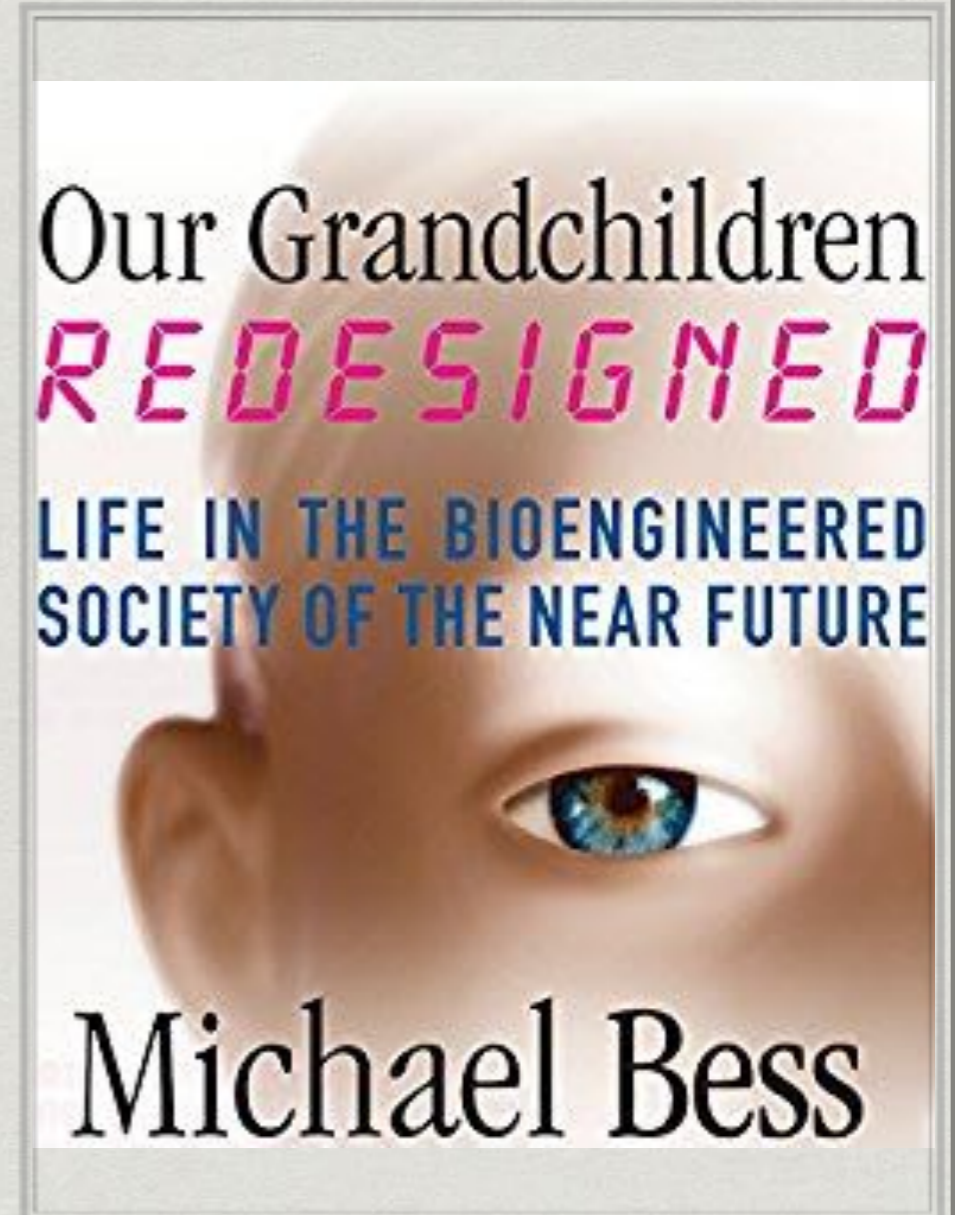REDESIGNED
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4. Defending Mental Privacy

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LIFE IN THE BIOENGINEERED
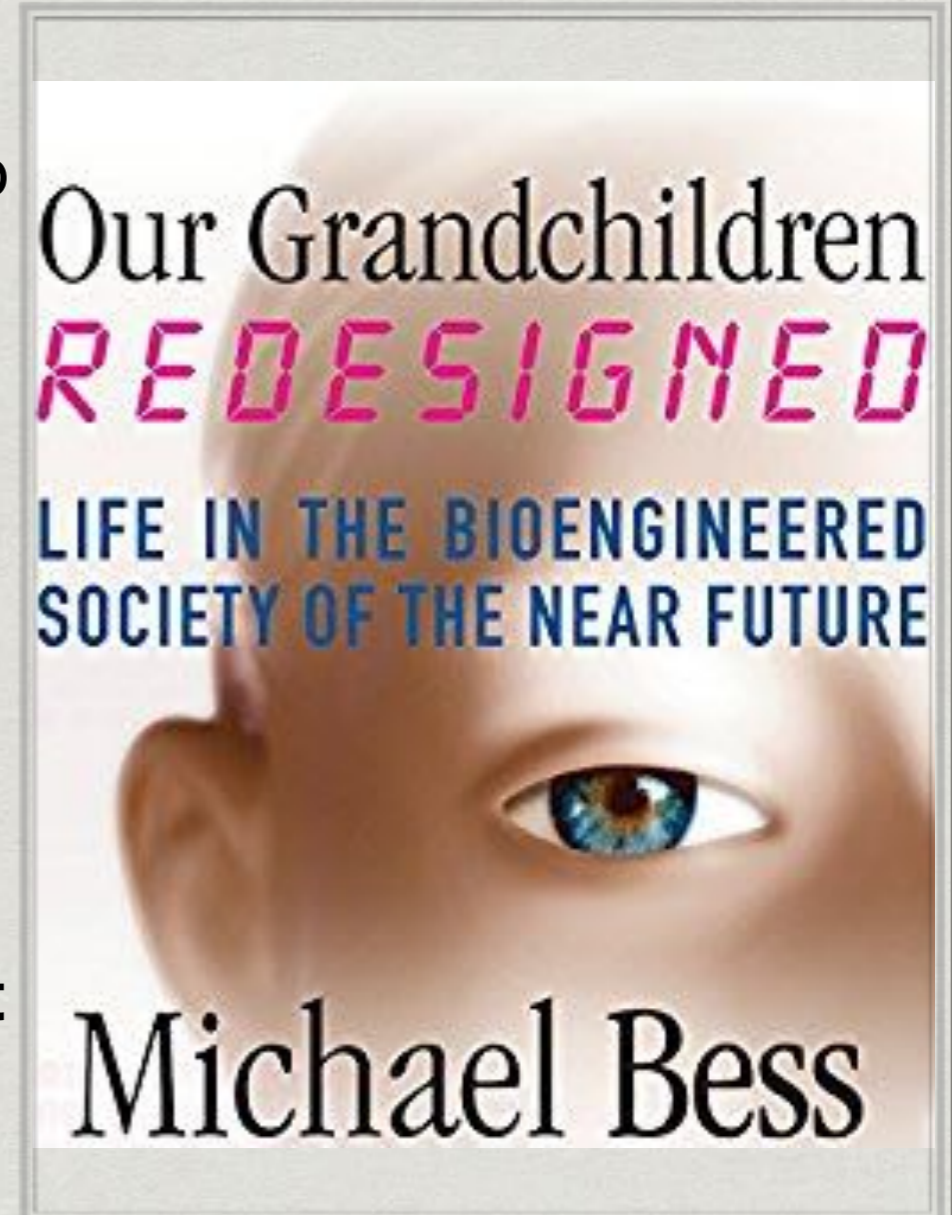SOCIETY OF THE NEAR FUTURE

Michael Bess

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2015**

Humane Values in a World of Moderate Enhancements

5. Commodification - Enhancement technology blur the boundary between person & product

∗ Are you a human *being* with inherent worth and dignity—or just another product struggling to keep up the pace of performance amid a seething market of rival products

∗ Instead of "What does this allow me to do that I couldn't do before?" <u>Ask</u>: **"How does this new capability contribute to my overall quality of life?"**

∗ Instead of "What shall I do next with my newfound powers?" <u>Ask</u>: **"Do I really need these, and what are their indirect or hidden drawbacks?"**
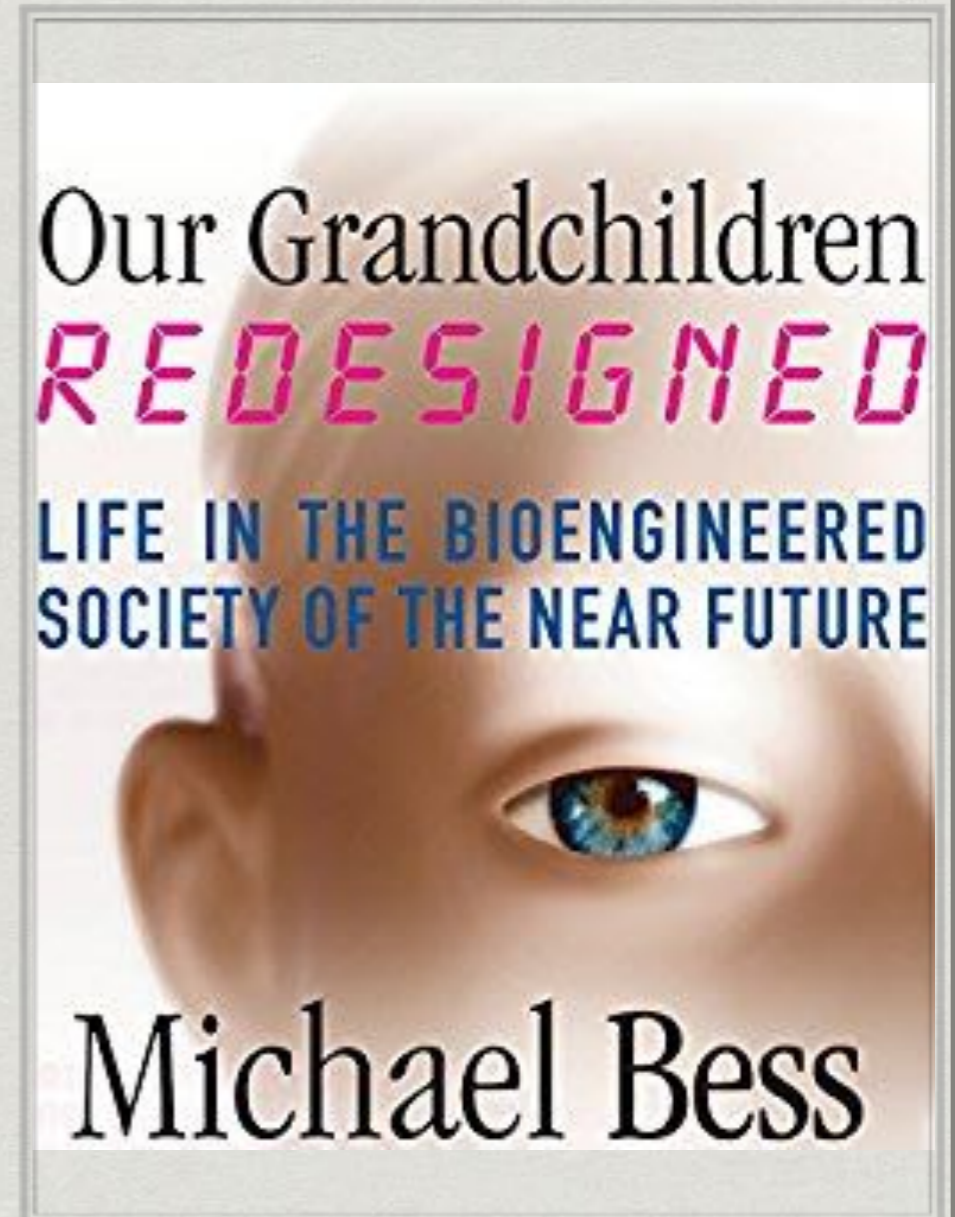
∗ Value the uniqueness of each person

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Humane Values in a World of Moderate Enhancements

6. Mechanization of the Self

* <u>Educate the public</u>

* <u>Resist medicalization</u> - "old-fashioned character building" *(introspection, self-discipline, hard work)* instead of quick fix

* Beware <u>"moral enhancement"</u> - partial hijacking of "free will," only "preapproved options," and undercutting morally meaningful actions
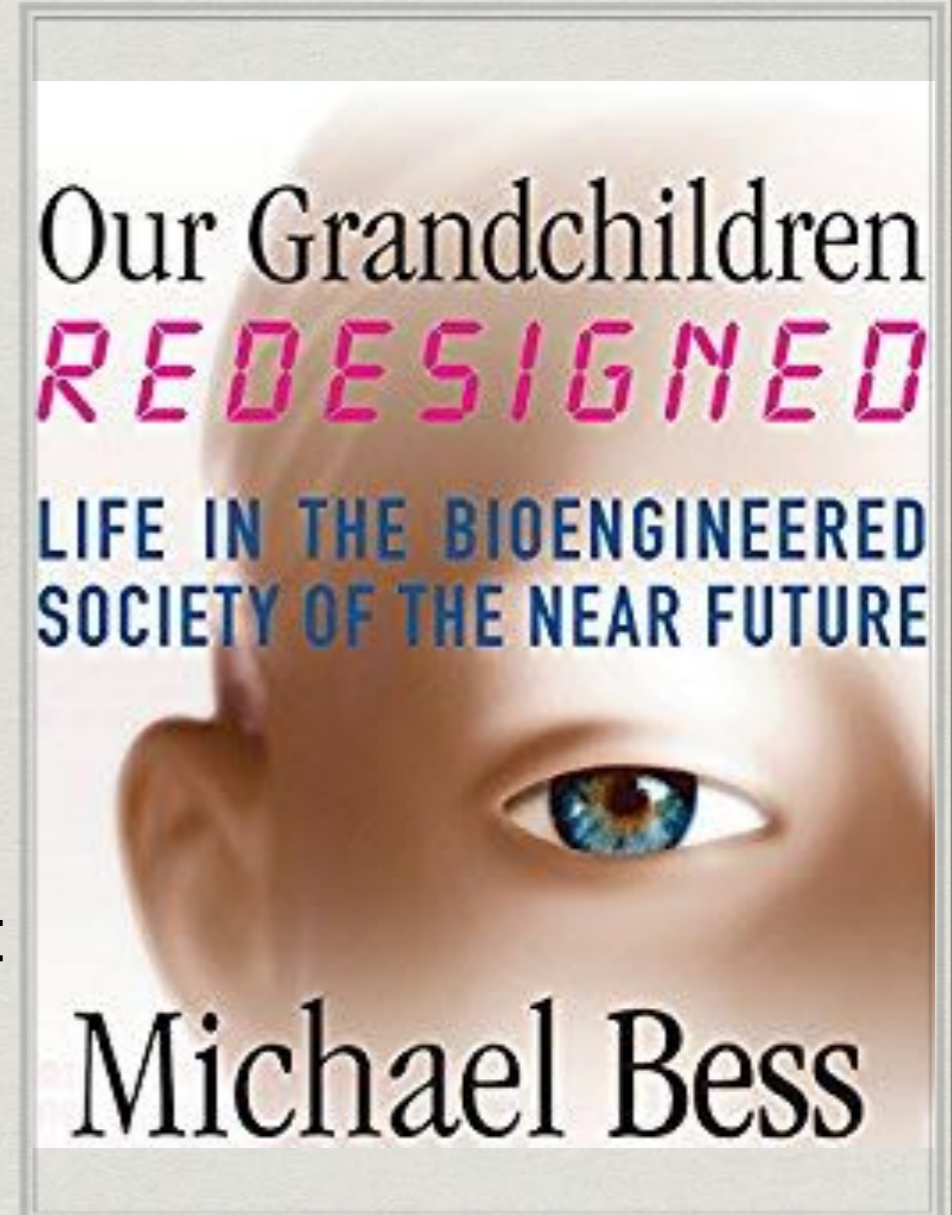
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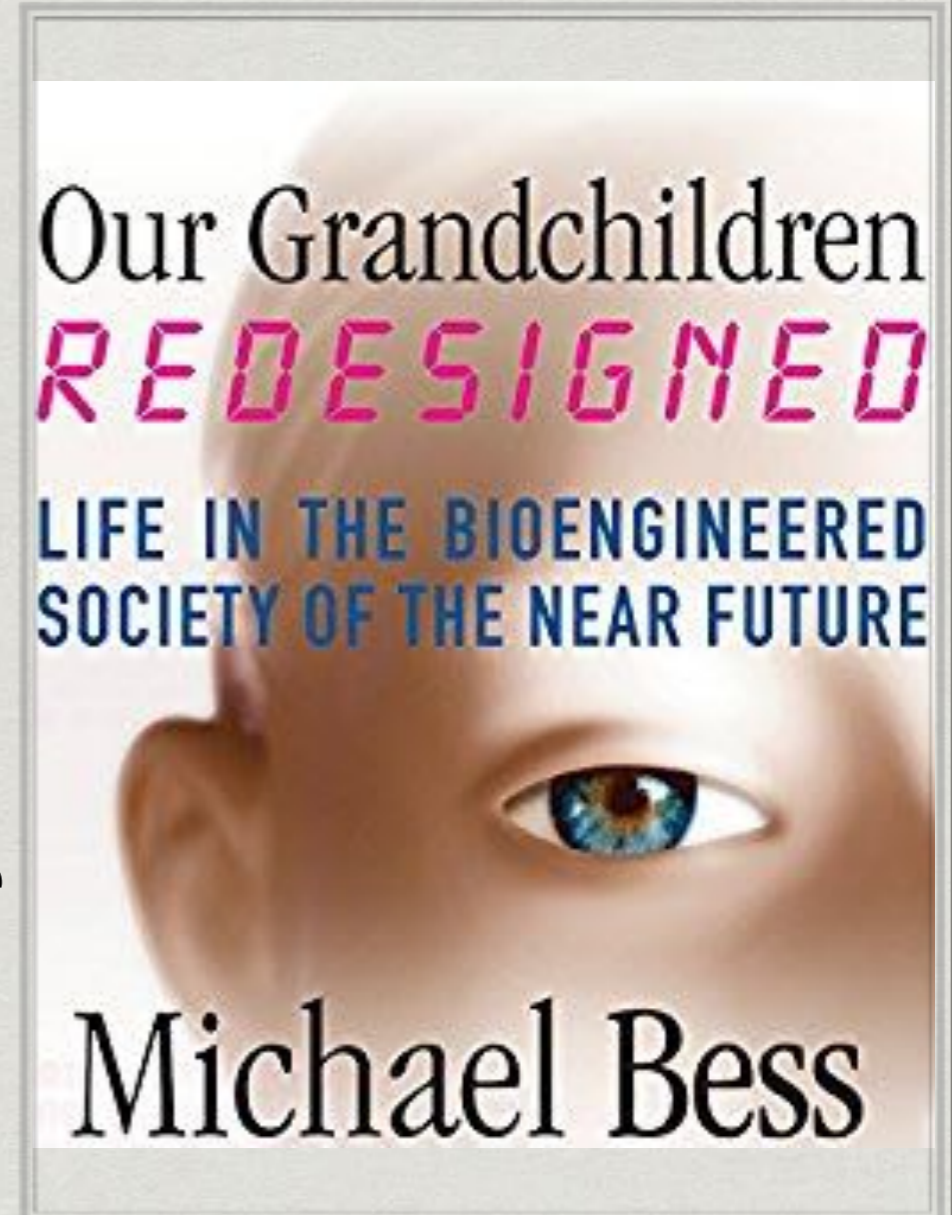
7. Disconnection from Primary Reality

* <u>Wendell Berry</u> - "a long time in one good place"

* Community

* <u>Tools you choose to use</u> - how is the device bending you to its own demands and purposes?

* Way you earn your daily bread & consume it

* Be here now

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SOCIETY OF THE NEAR FUTURE
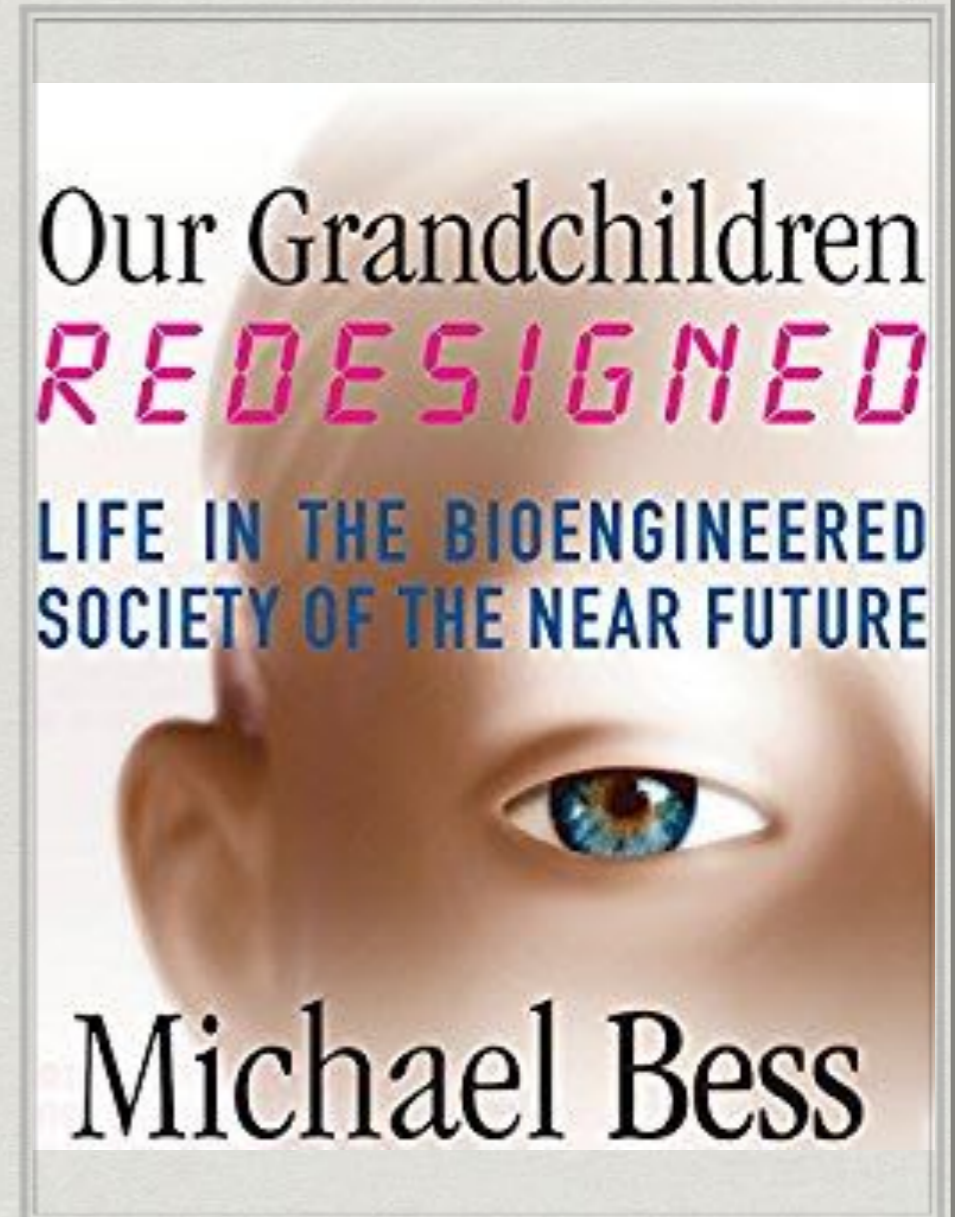
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Practical Steps

1. Mandate basic education in interdisciplinary field of "Science, Technology, & Society"

2. Build "Bioethics Coalitions" across the left-right divide

3. Create a strong governmental agency for technology assessment

4. Adopt precautionary principle in crafting bioenhancement legislation: *"When the suspects risks are catastrophic in nature, it is better to err on the side of caution, even if the state of our present knowledge is imperfect"*

5. Strengthen international cooperation in government technology

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2015

Companion Website

* ourgrandchildrenredesigned.org

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＊ *Session #1: <u>Contemporary Issues</u>: Revolutionary genome-editing technology CRISPR*

＊ *Session #2: <u>Contemporary Issues</u>: Biotechnologies that will boost human physical & mental performance to unprecedented levels*

＊ *Session #3: Biotech, part 2*

＊ **Session**: Moral Reasoning

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