



PROJECT

Bioethics

frederickuu.org/fcc

DATE

6 sessions

CLIENT

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

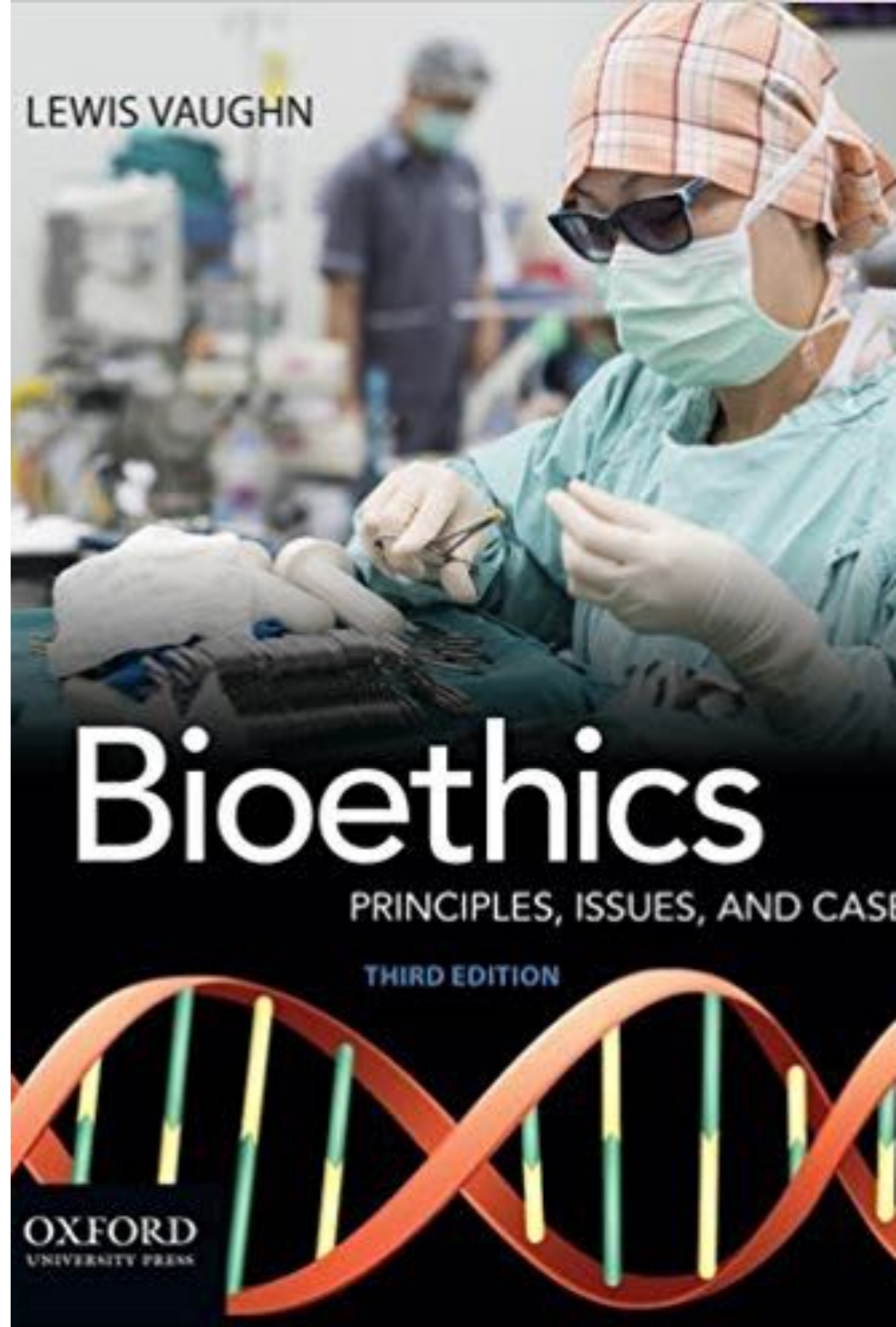
Covenant

- Use **“I” statements**: *speak from your own experience.*
- **Ask permission before sharing** other participants’ stories outside the group.
- **Lean-in/back**: be conscious of the level of participation that you bring to the conversation. 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



Check-in

- Further thoughts on previous sessions?
- “Show & Tell”
- <http://www.nytimes.com/learning/teachers/studentactivity/20081209a.pdf>
- <https://tricycle.org/magazine/artificial-intelligence-karma-robot-future/>



CONGRESSMAN
John K. Delaney
Representing the 6th District of Maryland

October 4, 2017

Dear Ms. Sturm,

As the founder of the Artificial Intelligence Caucus, I believe that Congress should hear from experts on the latest developments in AI and have a fact-based dialogue about the implications and benefits of these new technologies. This is how we should govern, by getting the facts and making sure that we can be proactive so that advances in automation benefit the greatest number of people.

[Watch my AI discussion here.](#)

On Tuesday, I had the opportunity to sit down and talk with Dr. Suchi Saria, computer science professor at Johns Hopkins University and Dr. Sebastian Thrun, founder of the Google X lab, former computer science professor at Stanford University and entrepreneur. We discussed their research, recent projects and how they believe AI will develop.

It was a pleasure to hear from these distinguished industry leaders and talk about the potential AI has to offer as we look towards the future. [You can view the full discussion here.](#)

Sincerely,
John

UPDATE MY PROFILE



For updates from our office like us on Facebook and follow us on Twitter.

facebook.com/congressmanjohndelaney/videos/vb.324527257655694/1355936774514732/

Speech Pathology (Barbara)

- * 2010 - first genetic links found: [nih.gov/news-events/news-releases/researchers-discover-first-genes-stuttering](https://www.nih.gov/news-events/news-releases/researchers-discover-first-genes-stuttering)
- * 2016 - mutations transplanted into mice that make them “stutter”: [nidcd.nih.gov/news/2016/mice-with-human-mutation-show-signs-stuttering](https://www.nidcd.nih.gov/news/2016/mice-with-human-mutation-show-signs-stuttering)
- * Complex genetic picture (not single-gene disorder)
- * Mice research may lead to treatments, which is significant research on etiology and treatment has been relatively stagnant for decades.
- * Ethics: Severe, chronic stuttering is known to be very debilitating socially, affecting employment, for example. The prevalence of chronic stuttering is higher among males in the general population, and significantly higher among prison populations. (*Who will be helped? Who will be used as “lab rats”?*)

Driverless Cars (Carrie Jean)

- * radiolab.org/story/driverless-dilemma (9/27/17)
- * Driverless cars may be single innovation that has most widespread impact on humanity to date.
- * MRI imaging of individuals answering the "trolley moral dilemma."
- * Different brain regions used for decisions to justify "killing 1 human to save 5" by pulling a lever vs. "pushing 1 person to their death w/ own hands."
- * If you pull lever, 9/10 vote for "**saving the 5** by killing the 1".
- * If you have to push the one to their death with own hands, almost no one votes for "killing 1 to save the 5" (except psychopaths & Buddhist monks).
- * Do we program driverless cars with a "global standard" to make 'trolley car' decision in the circumstance of an unavoidable crash? (What criteria?)



Why Stanford Researchers Tried to Create a 'Gaydar' Machine

[nytimes.com/2017/10/09/science/stanford-sexual-orientation-study.html](https://www.nytimes.com/2017/10/09/science/stanford-sexual-orientation-study.html)



Films that open our minds to biotechnologies

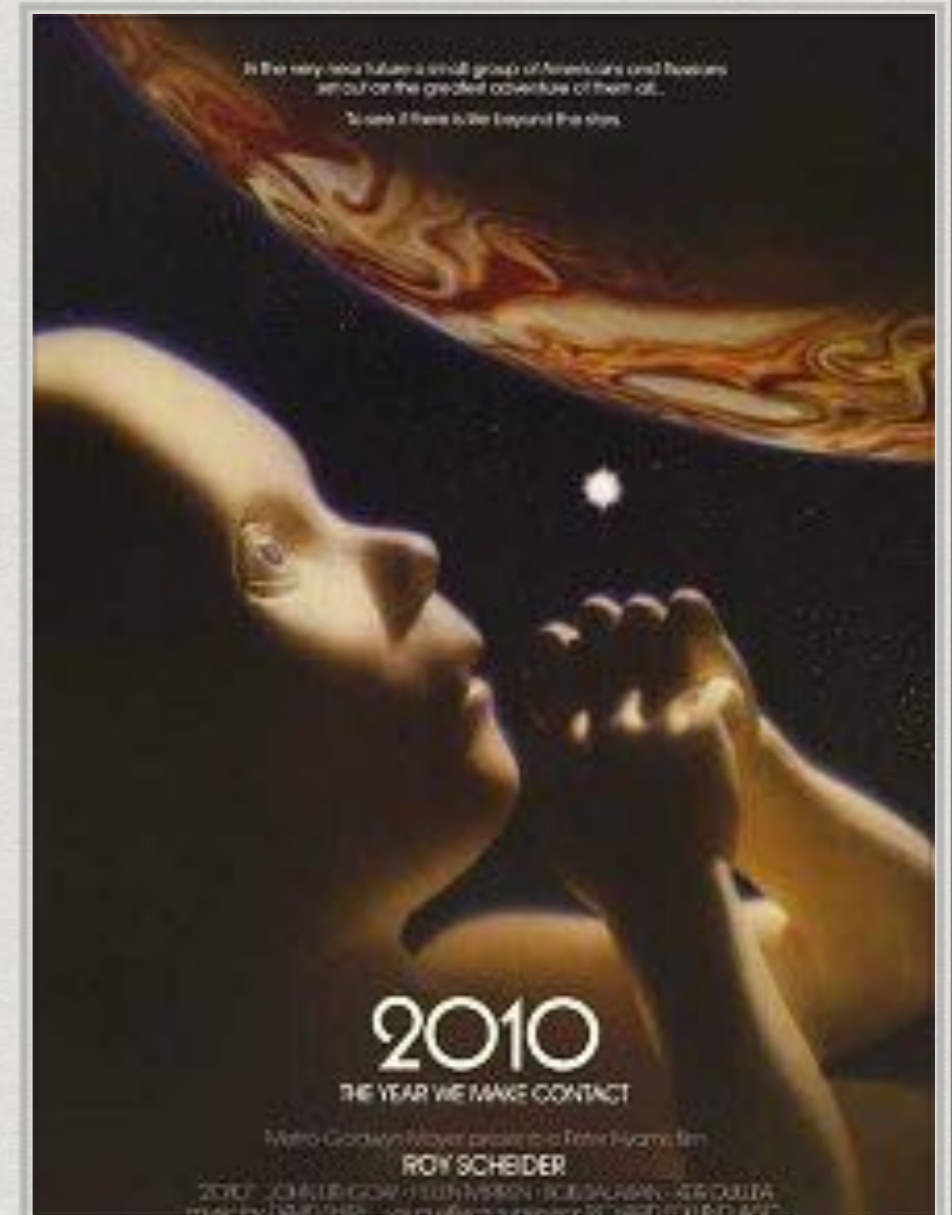
that will boost human physical & mental performance to unprecedented levels

- * directed by Stanley Kubrick.
- * partially inspired by Arthur C. Clarke's short story "The Sentinel" (concurrently novel, published soon after the film)
- * Voyage to Jupiter with sentient computer Hal after discovery of a mysterious black monolith affecting human evolution.
- * Themes: existentialism, human evolution, technology, artificial intelligence, and extraterrestrial life.



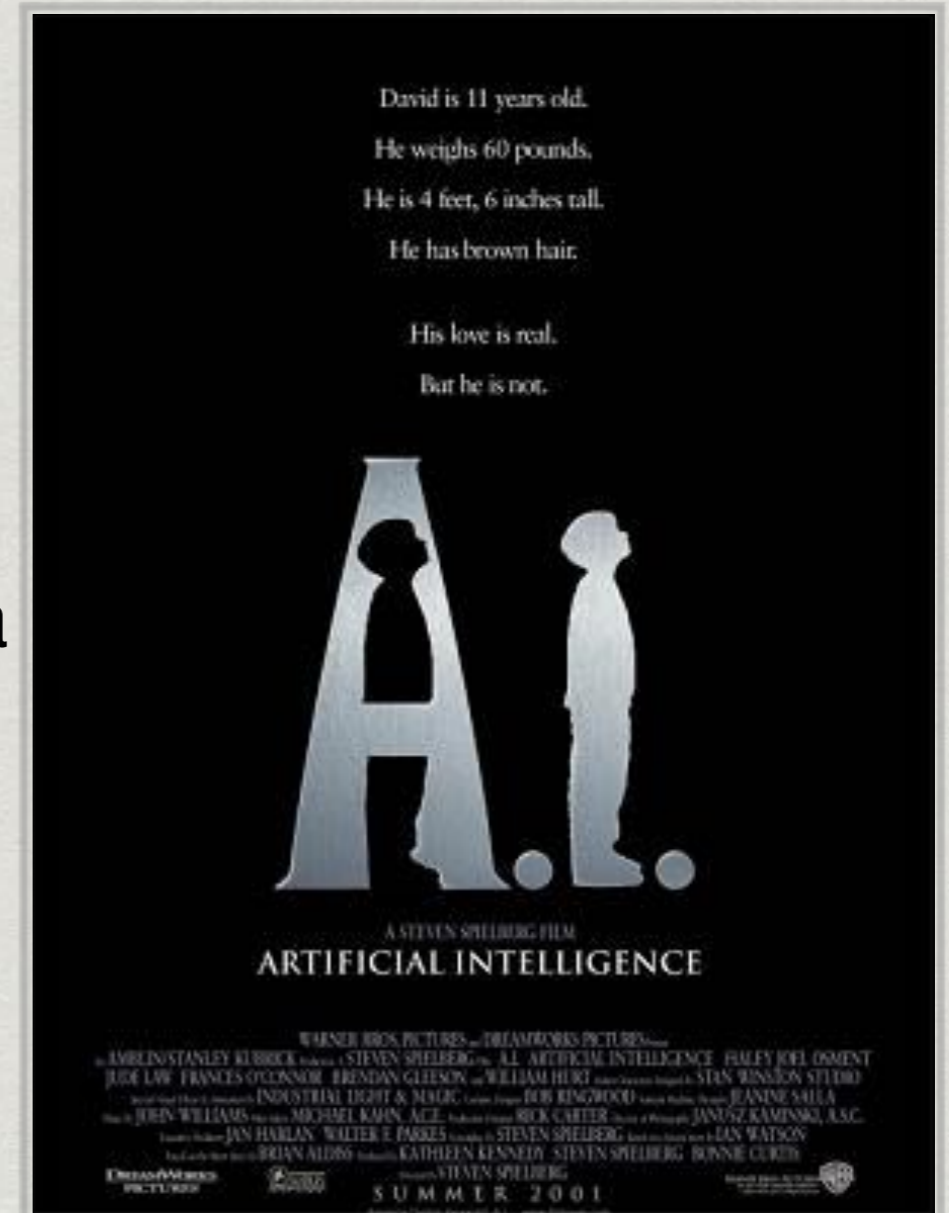
1968

- * based on Arthur C. Clarke's 1982 sequel novel *2010: Odyssey Two*.



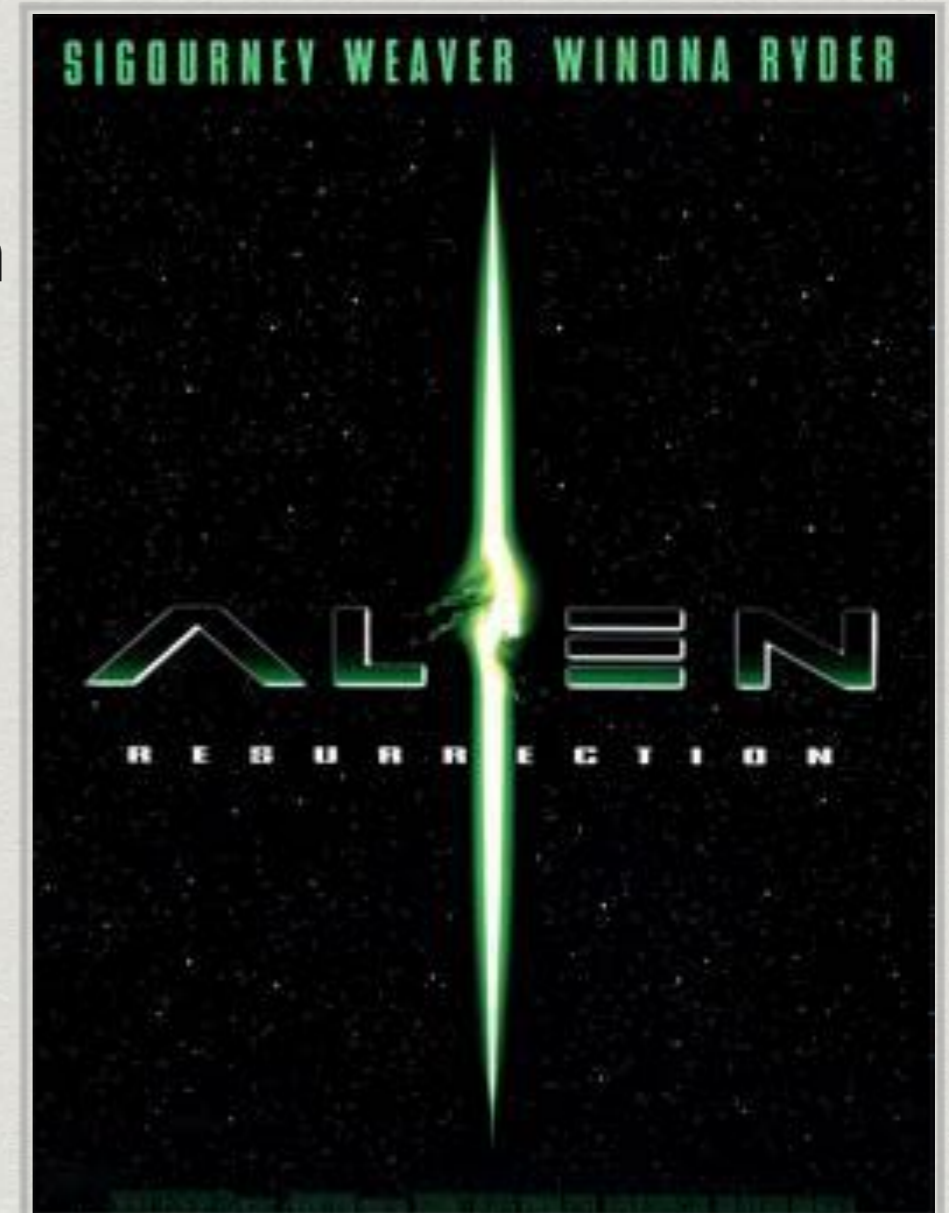
1984

- * directed by Steven Spielberg.
- * inspired by 1969 short story "Super-Toys Last All Summer Long" by Brian Aldiss
- * In a futuristic post-climate change society, a childlike android is uniquely programmed with the ability to love.



2001

- * written by Joss Whedon
- * fourth installment in the *Alien* film series, and final installment in the original series.
- * 200 years after the preceding installment *Alien 3* (1992), Ripley is **cloned** and an Alien queen is surgically removed from her body.
- * Military hopes to **breed Aliens** to study and research on a spaceship, using **human hosts** kidnapped and delivered to them by a group of mercenaries.
- * Aliens escape their enclosures, while Ripley and the mercenaries attempt to escape and destroy the ship before it reaches Earth.



1997

- * directed by James Cameron,
- * mid-22nd century: humans colonizing a lush habitable moon of a gas giant in the Alpha Centauri star system to mine a mineral that's a room-temperature superconductor.
- * Expansion of the mining colony threatens existence of indigenous humanoid tribe.
- * Title - genetically-engineered body with the mind of a remotely located human that is used to interact with the natives.
- * first film to gross more than \$2 billion
- * Sequels scheduled for release in 2020, 2021, 2024 and 2025.



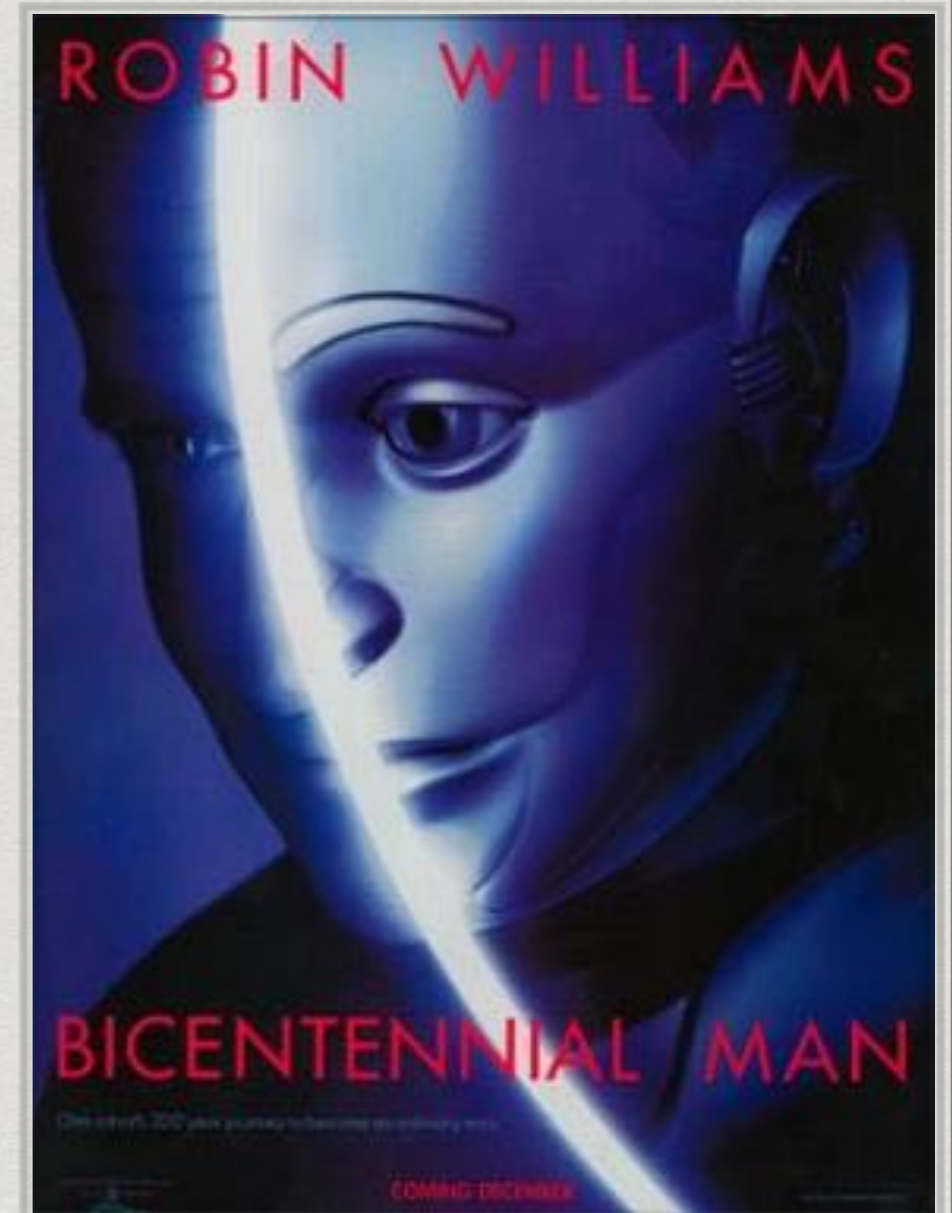
2009

- * Re-imagining of 1978 series
- * Distant star system, where a civilization of humans live on a group of planets known as the Twelve Colonies.
- * In past, Colonies had been at war with a cybernetic race of their own creation, known as the Cylons.
- * With unwitting help of human scientist, Cylons launch a sneak attack on Colonies, laying waste to the planets and devastating their populations.
- * Out of a population numbering in billions, ~50,000 humans survive, most aboard civilian starships.
- * Battlestar Galactica is only military ship that survived attack. Under leadership of a military Commander and new President (former Secretary of Education), small fugitive fleet of survivors goes in search of a fabled 13th colony known as Earth.



2003-2009
4 seasons

- * Based novel *The Positronic Man* by Isaac Asimov and Robert Silverberg (original novella published during U.S. bicentennial)
- * Themes: humanity, slavery, prejudice, maturity, intellectual freedom, conformity, sex, love, and mortality.
- * Main character lives to the age of 200



1999

- * directed by Ridley Scott
- * adaptation of 1968 novel *Do Androids Dream of Electric Sheep?* by Philip K. Dick.
- * dystopian Los Angeles of 2019 in which genetically engineered replicants (visually indistinguishable from adult humans) manufactured by a powerful Corporation to work on off-world colonies.
- * Those that escape and return to Earth are hunted down and "retired" by special police operatives known as Blade Runners.
- * Burnt-out expert Blade Runner reluctantly agrees to hunt down group of recently escaped replicants.
- * Deckard meets a female advanced replicant who causes him to question his mission.



1982

- * A new Blade Runner discovers a dark secret that could bring an end to humanity.
- * Discovery leads him to a former blade runner who disappeared 30 years ago.



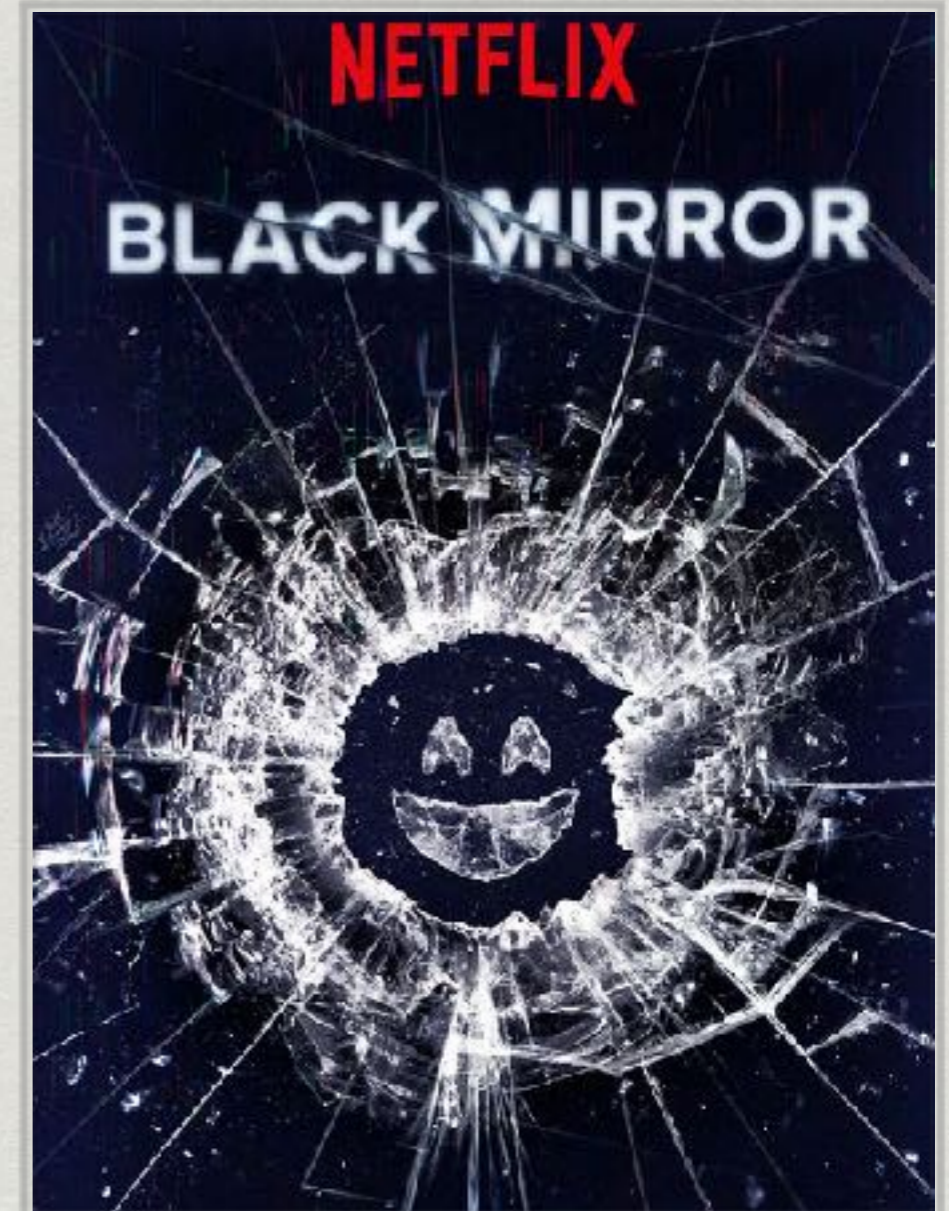
October 6, 2017

- * Research team's attempts to perfect a system that directly records the sensory and emotional feelings of a subject,
- * Company's management tries to exploit the device for military ends.



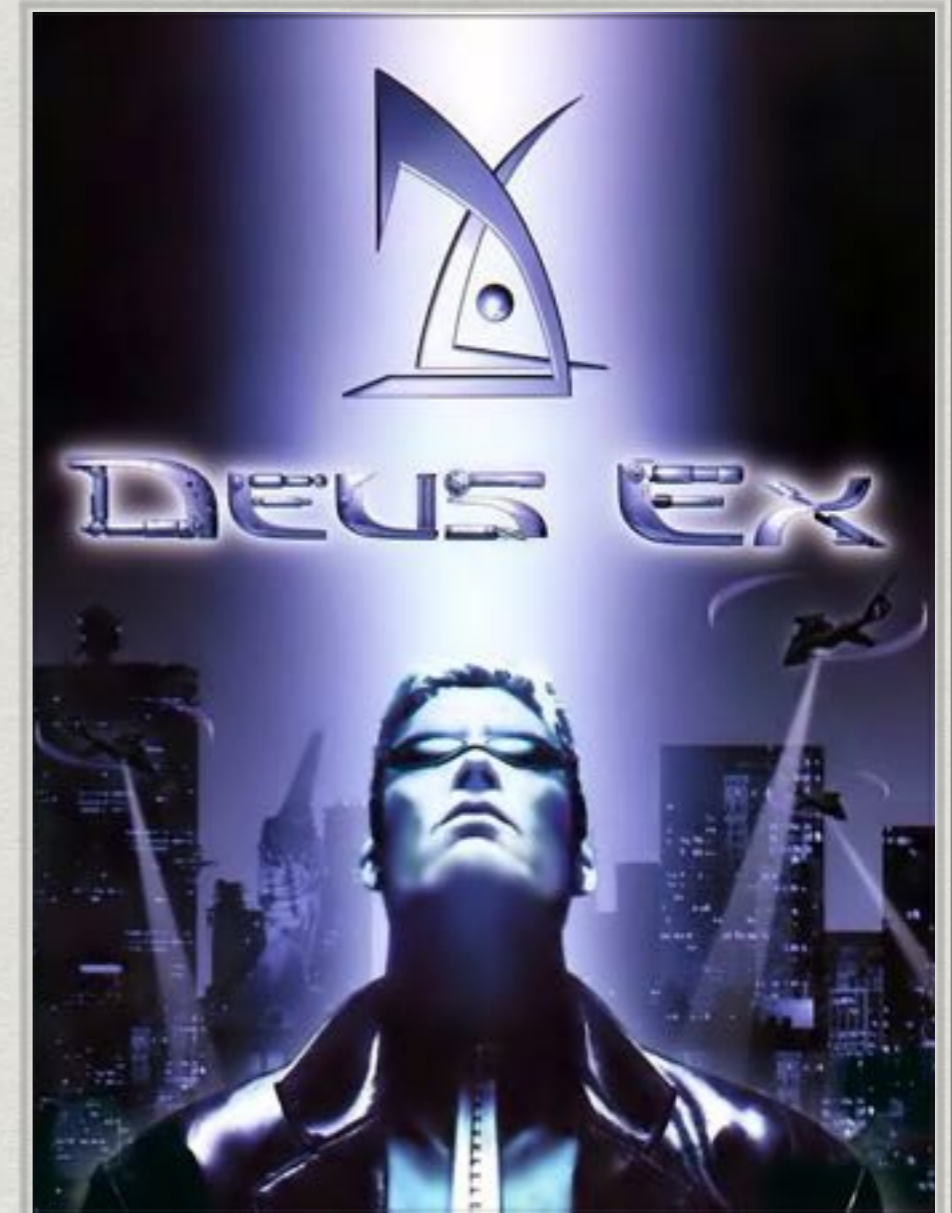
1983

- * British-American science fiction anthology TV series
- * Modern society, particularly with regard to the unanticipated consequences of new technologies.
- * inspired by *The Twilight Zone*
- * highlight topics related to humanity's dependency on technology
- * "The way we live now – and the way we might be living in 10 minutes' time if we're clumsy."
- * vulture.com/2016/10/every-black-mirror-episode-from-worst-to-best.html



2011 -

- * Live Action Role-Playing video game
- * Cyberpunk-themed dystopian world of 2052
- * Anti-terrorist agent given superhuman abilities by nanotechnology fights hostile forces in a world ravaged by inequality & deadly plague.
- * Combines first-person shooter w/ stealth elements, adventure, & role-playing, allowing for tasks to be completed in a variety of ways, with differing outcomes.
- * Repeatedly named "Best PC Game of All Time" in 2011 surveys.
- * Sequel, *Deus Ex: Invisible War* (2003);
Prequels: *Deus Ex: Human Revolution* (2011), *Deus Ex: The Fall* (2013), & *Deus Ex: Mankind Divided* (2016)



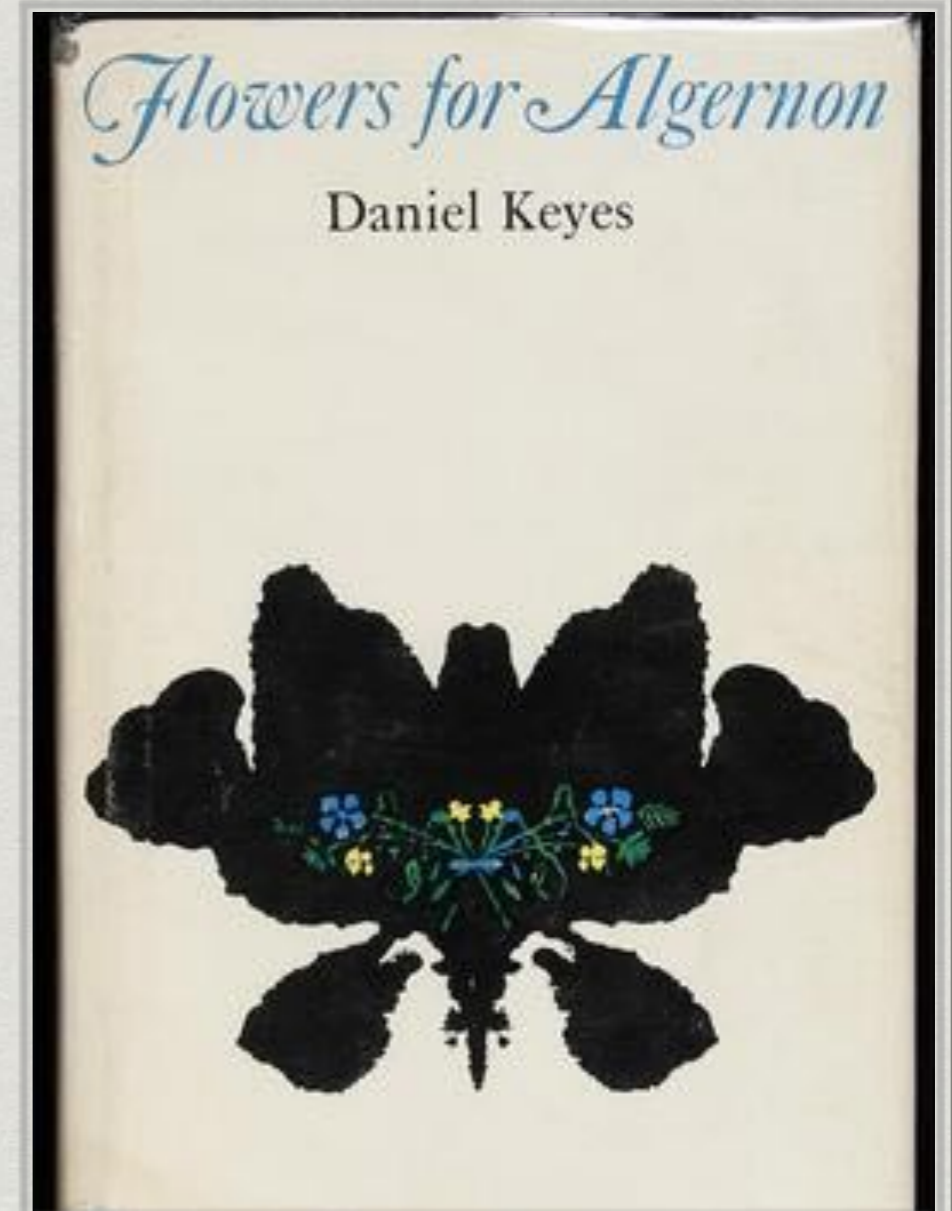
2000

- * A programmer, who works for the dominant search engine company, wins an office contest for a one-week visit to the luxurious, isolated home of the CEO,
- * Only other person there is the CEO's servant, who does not speak English.
- * The CEO has built a humanoid robot named with artificial intelligence, who has already passed a simple Turing test
- * The CEO wants the programmer to judge whether Ava is genuinely capable of thought and consciousness, and whether he can relate to her despite knowing she is artificial.



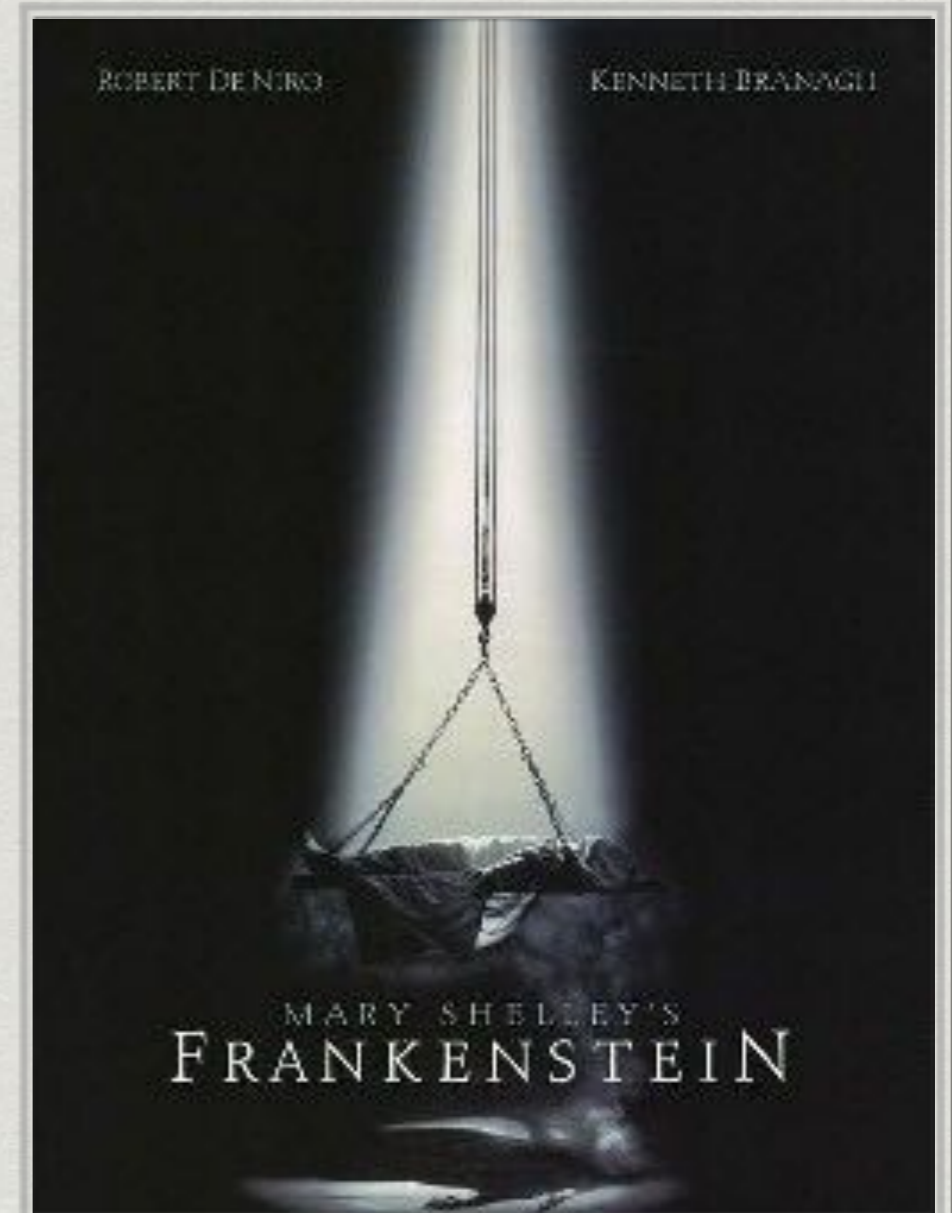
2015

- * Short story, expanded to novel by Daniel Keyes.
- * Laboratory mouse undergoes surgery to increase intelligence by artificial means.
- * Series of progress reports written by the first human test subject for the surgery
- * Themes: treatment of mentally disabled
- * *Charly* (marketed and stylized as CHARLY): 1968 film adaptation



1958/1966

- * Film adaptation of *Frankenstein; or, The Modern Prometheus*, novel by Mary Shelley (1797-1851)
- * Published in 1818, when she was 20
- * Young scientist creates a grotesque but sentient creature in an unorthodox scientific experiment.



1994

- * 2035: humanoid robots serve humanity, protected by Three Laws of Robotics.
 1. A robot may not injure a human being or, through inaction, allow a human being to come to harm.
 2. A robot must obey the orders given it by human beings except where such orders would conflict with the First Law.
 3. A robot must protect its own existence as long as such protection does not conflict with the First or Second Laws
- * Chicago police detective, hates and distrusts robots b/c one of them rescued him from a car crash but left a 12-year-old girl to die because her survival was statistically less likely than his.
- * Critical injuries repaired with cybernetic left arm, lung, and ribs, personally implanted by the co-founder of U.S. Robots and Mechanical Men (USR)



2004

- * Industrialist and master engineer, builds a powered exoskeleton
- * becomes a technologically advanced superhero



2008

- * Scientist experiments on a simple-minded gardener



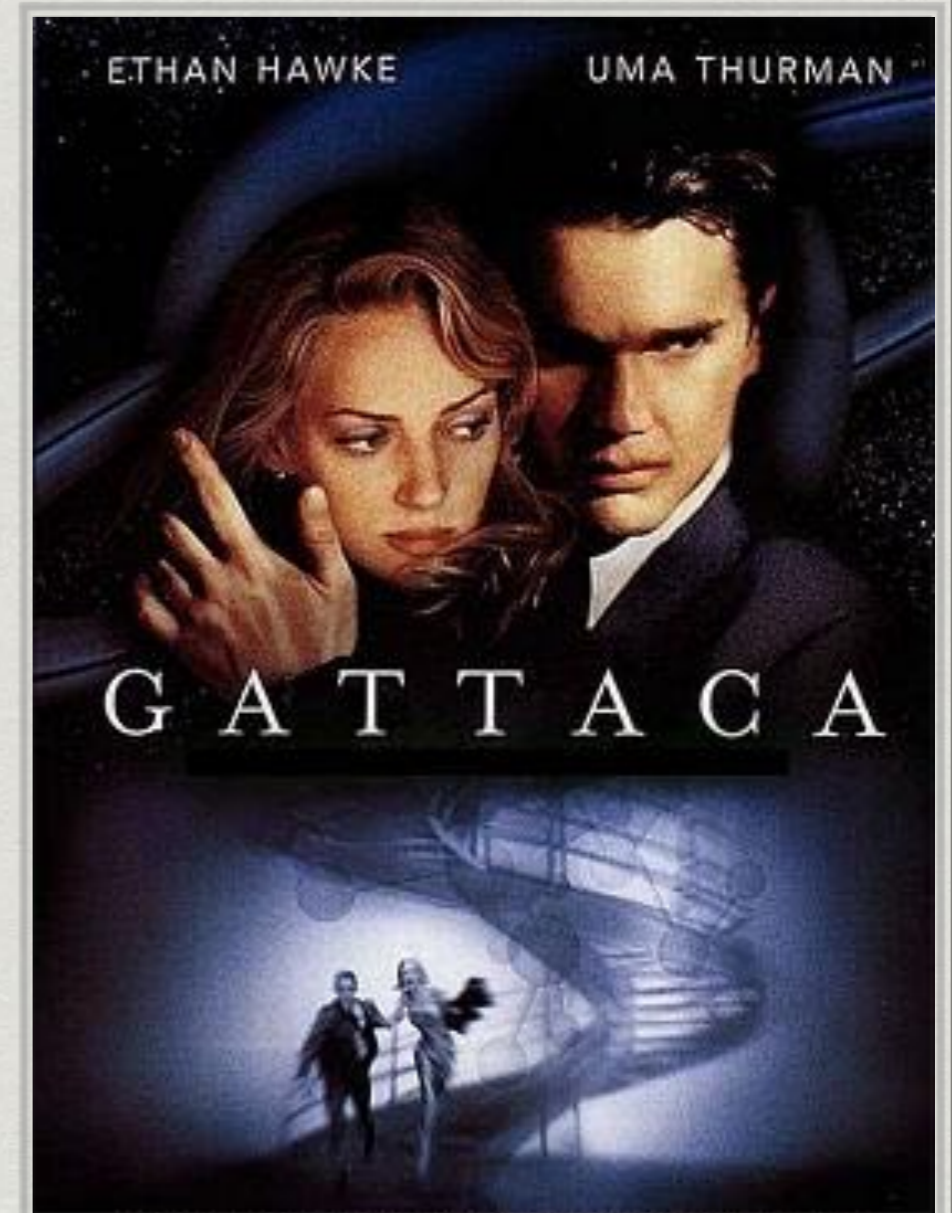
1992

- * Dystopian future in which reality as perceived by most humans is actually a simulated reality called "the Matrix," created by sentient machines to subdue the human population, while their bodies' heat and electrical activity are used as an energy source.
- * Computer programmer Neo learns this truth and is drawn into a rebellion against the machines, which involves other people who have been freed from the "dream world."
- * Allusions:
 - * Plato's Allegory of the Cave,
 - * Jean Baudrillard's *Simulacra and Simulation*,
 - * Lewis Carroll's *Alice's Adventures in Wonderland*.



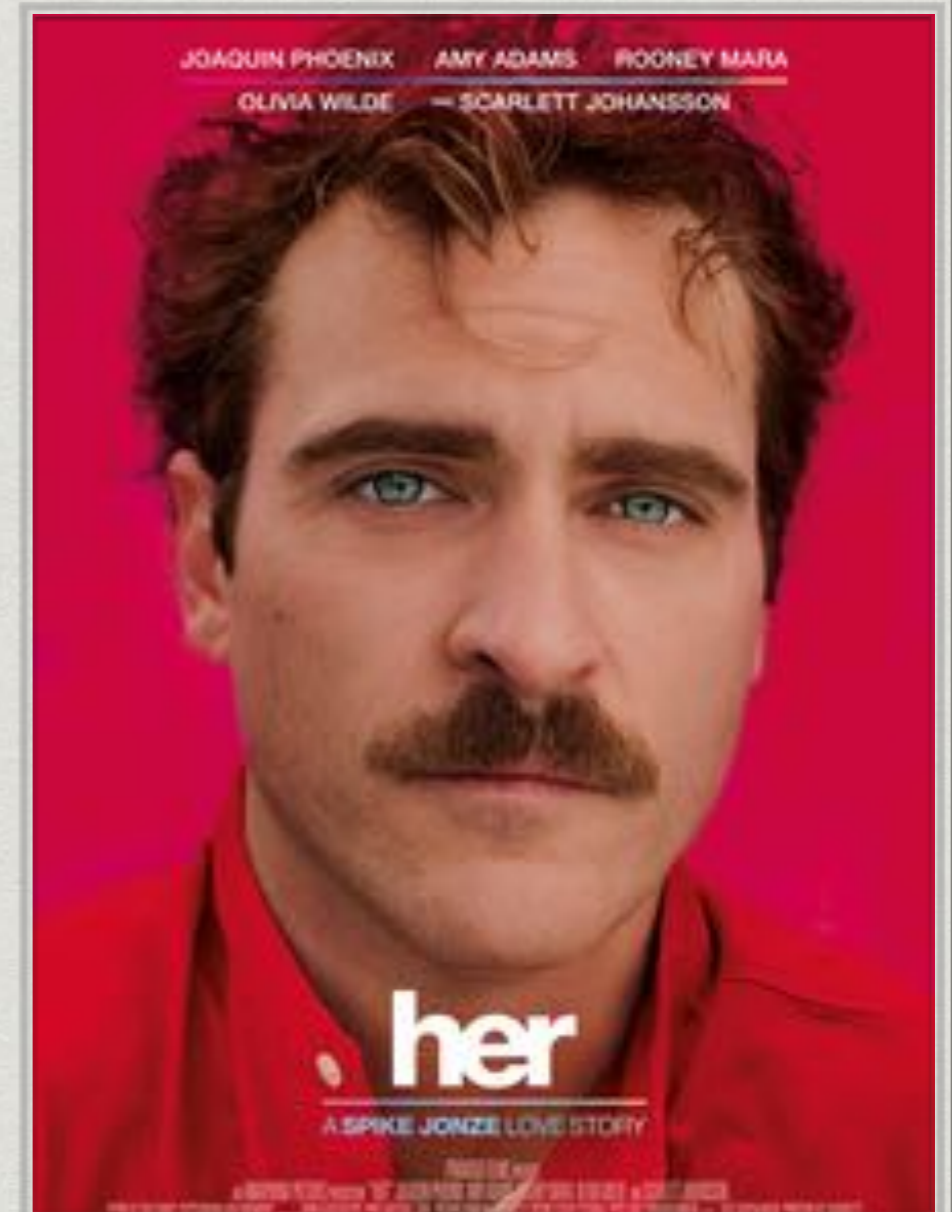
1999

- * Future society driven by eugenics, where children are conceived through genetic manipulation to ensure they possess “best” hereditary traits of their parents.
- * Vincent Freeman(!), conceived outside eugenics program, struggles to overcome genetic discrimination to realize his dream of traveling into space.
- * Title - letters G, A, T, and C, which stand for guanine, adenine, thymine, and cytosine, the four nucleobases of DNA.



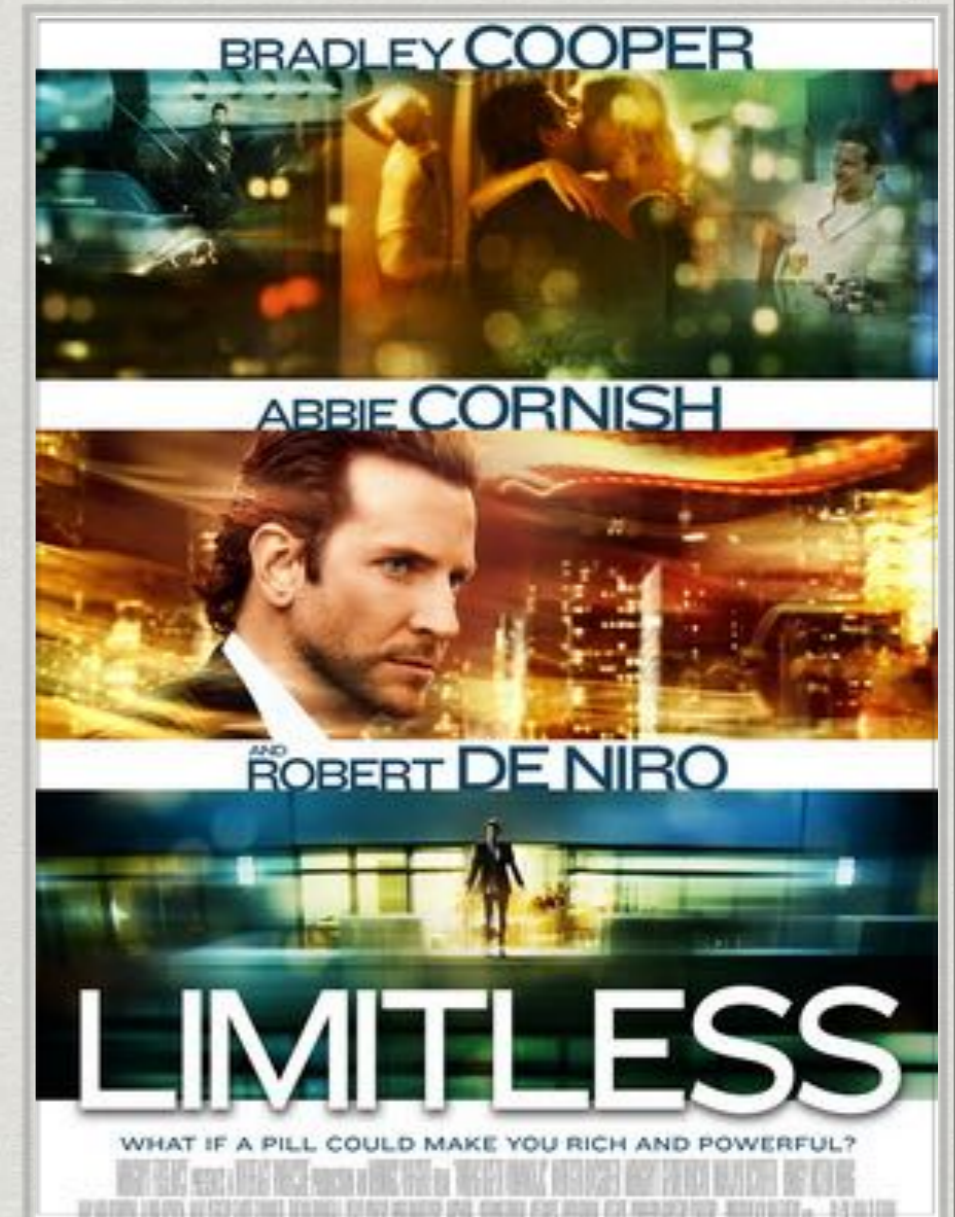
1997

- * Theodore Twombly (Joaquin Phoenix) - develops a relationship with Samantha (Scarlett Johansson), an intelligent computer operating system, personified through a female voice.



2013

- * Based on novel *The Dark Fields* by Alan Glynn
- * Struggling writer introduced to a nootropic drug, which gives him the ability to fully utilize his brain and vastly improve his lifestyle.
- * TV series of the same name, covering events that take place after the film, debuted 2015 (one season)



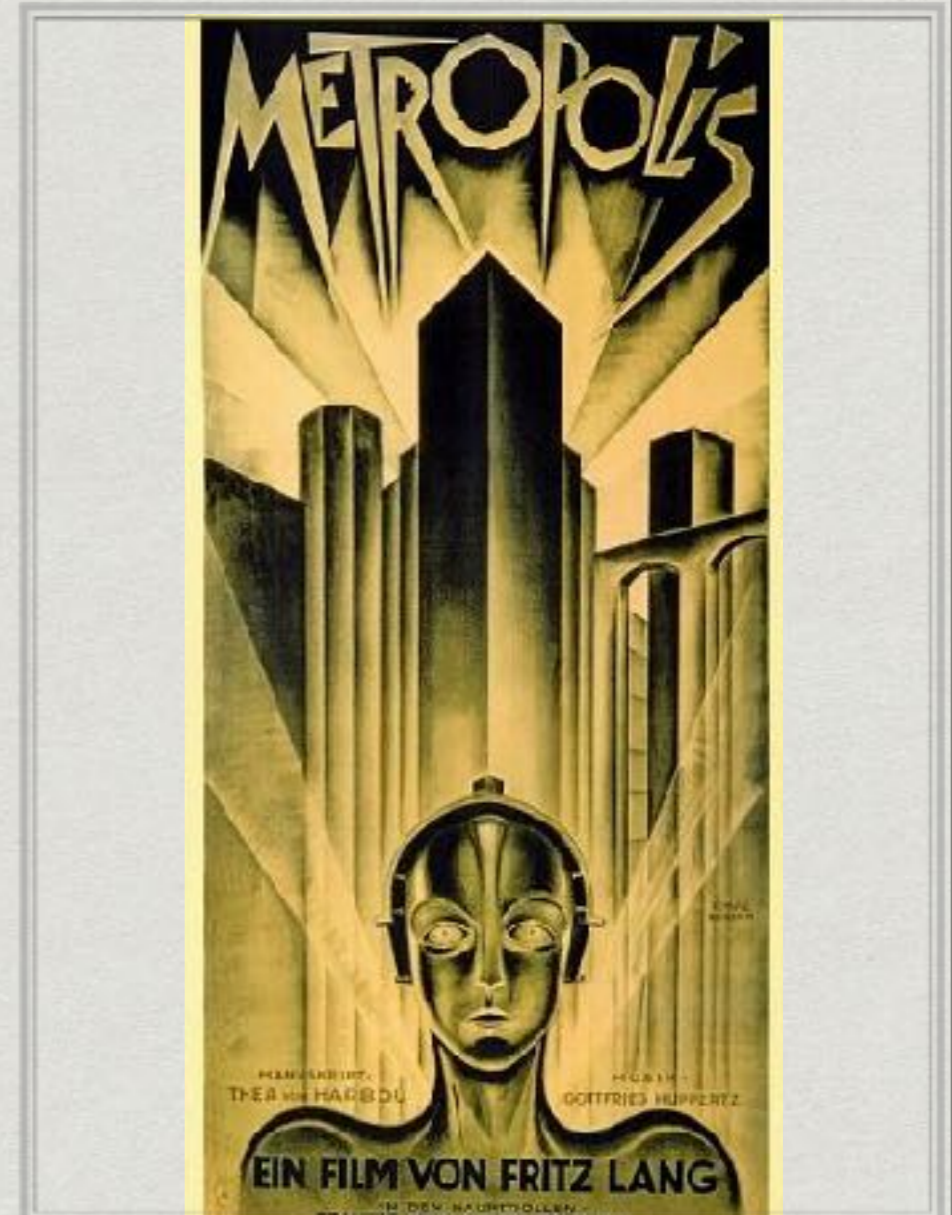
2011

- * "The Measure of a Man" - Season 2, Episode 9 of *Star Trek: The Next Generation*.
- * 24th century starship
- * Rights of android officer threatened by a scientist who wishes to dismantle him in order to produce replicas of him.
- * Captain Jean-Luc Picard fights in court for Data's right of self-determination in order not to be declared mere property
- * Themes slavery and rights of AI
- * Similar subjects follow-up episode, "The Offspring"



1989

- * German expressionist epic science-fiction drama film directed by Fritz Lang.
- * Futuristic urban dystopia, following the attempts of wealthy son of the city's ruler, and a poor worker, to overcome the vast gulf separating the classes of their city.



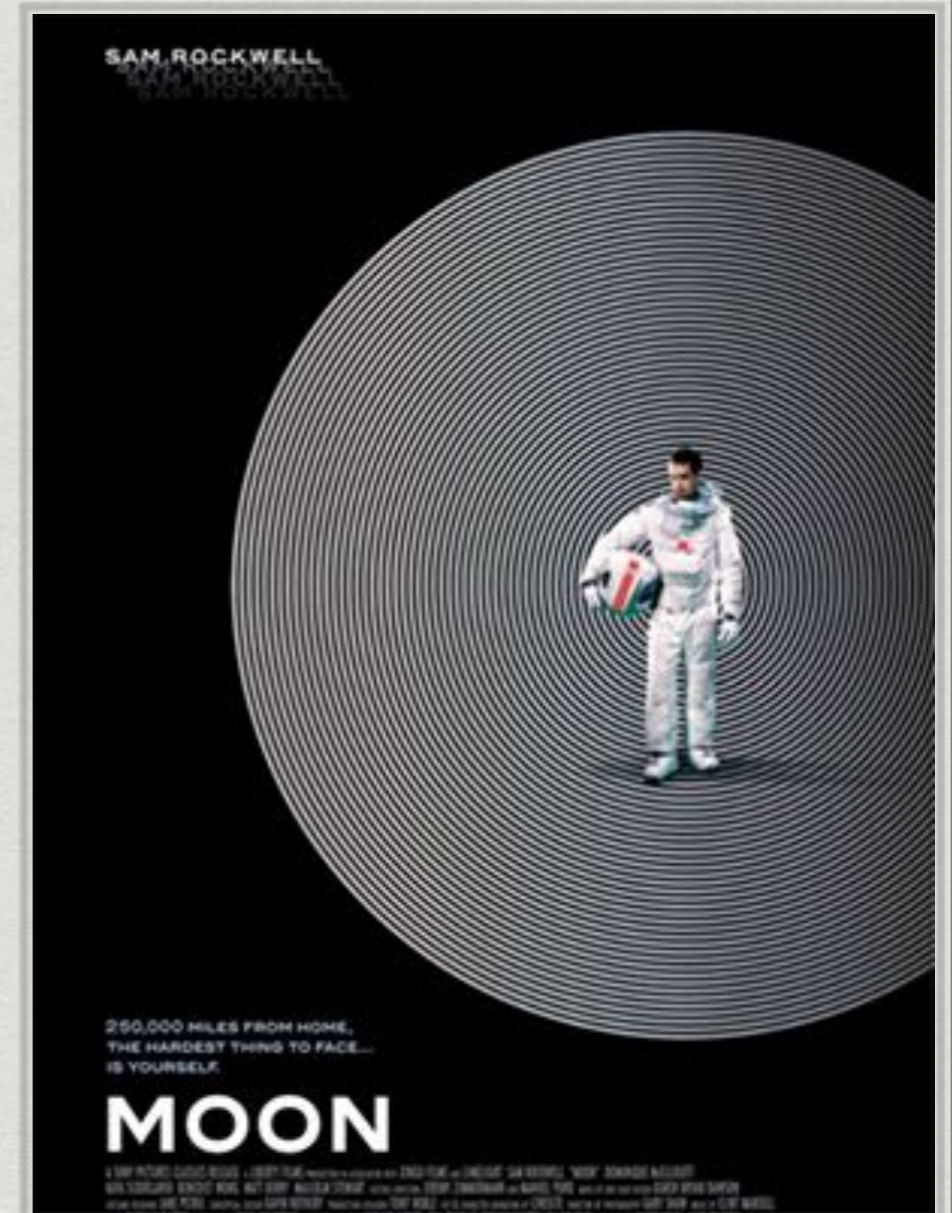
1927

- * directed by Steven Spielberg and loosely based on the short story of the same name by Philip K. Dick.
- * set primarily in D.C. metro in 2054, where "PreCrime", a specialized police department, apprehends criminals based on foreknowledge provided by three psychics called "precogs".
- * Can free will exist if the future is set and known in advance?
- * Role of preventive government in protecting its citizenry, the role of media in a future state where technological advancements make its presence nearly boundless, the potential legality of an infallible prosecutor



2002

- * A man experiences personal crisis as he nears end of a three-year solitary stint mining helium-3 on the far side of the Moon.
- * Kevin Spacey voices Sam's robot companion, GERTY.



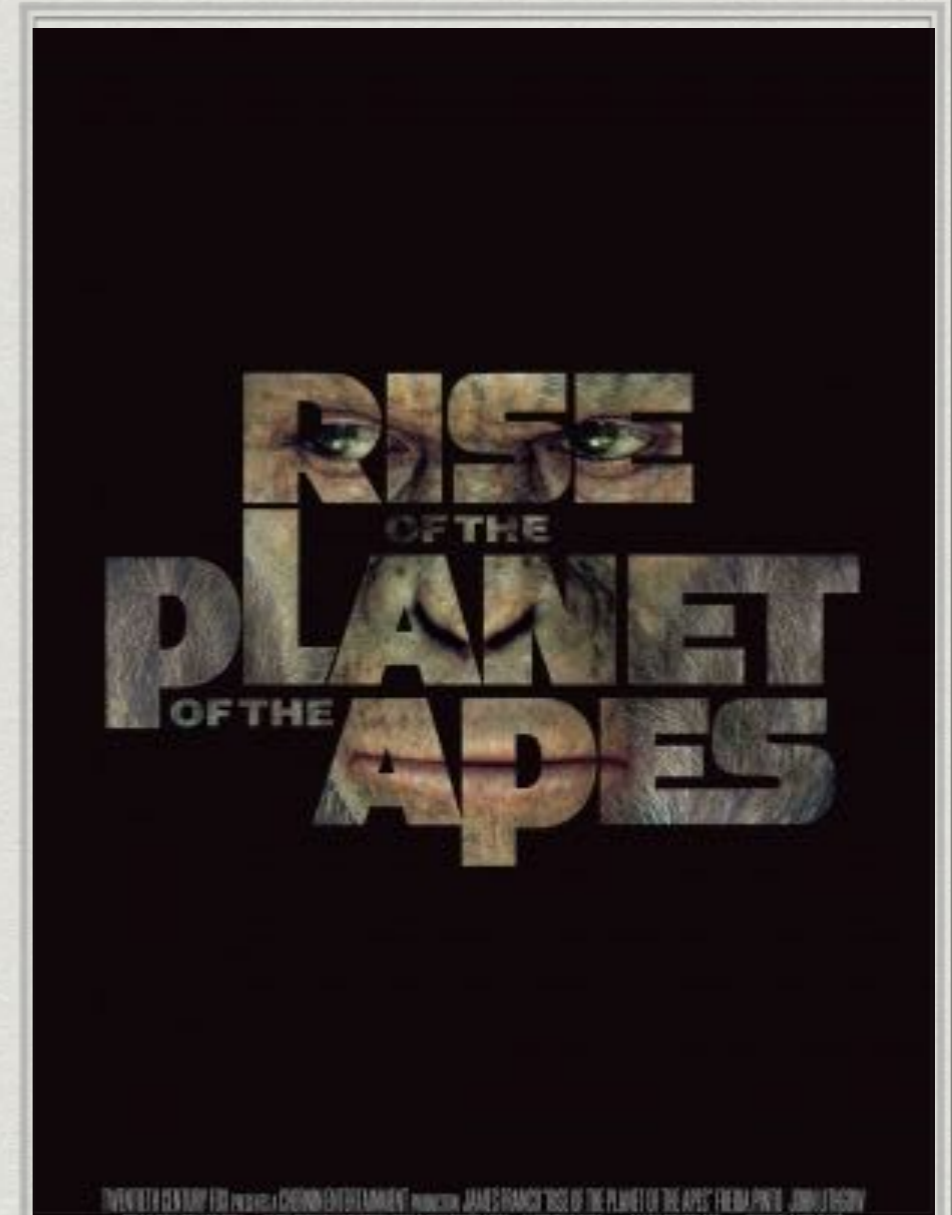
2009

- * dystopian romantic drama film based on Kazuo Ishiguro's 2005 novel of the same name
- * Medical breakthrough in 1952 has permitted human lifespan to be extended beyond 100 years.
- * Second act - the now-teenagers rehoused in cottages on a farm in 1985.
- * Meet former pupils of schools similar to theirs; revealed that they are all clones.
- * Rumours of temporary reprieve from organ donation for donors who are in love and can prove it.



2010

- * Scientist at biotech company testing viral-based drug on chimpanzees to find a cure for Alzheimer's. Given to a chimp named Bright Eyes, greatly increasing her intelligence.
- * During presentation for drug, Bright Eyes forced from cage, goes on a rampage, and shot to death.
- * Assistant discovers reason for Bright Eyes' rampage was that she had recently given birth to an infant chimp.
- * Three years later, Will introduces that infant to redwood forest
- * Five years later, Caesar reaches adolescence and sees a dog on a leash like his own, he questions his identity and learns of his origins.



2011

- * Crime-ridden Detroit, Michigan, in near future
- * Police officer murdered by gang of criminals and revived by a megacorporation as a superhuman cyborg law enforcer
- * Themes: media influence, gentrification, corruption, authoritarianism, greed, privatization, capitalism, identity, dystopia, and human nature.



1987 / 2014

- * High school student turns to crimefighting after developing spider-like super powers.



2002

- * Experiments in genetic engineering being done by a young scientific couple, who
- * Attempt to introduce human DNA into their work of splicing animal genes.



2009

- * FBI agent ventures out into real world to investigate the murder of surrogates (humanoid remote controlled robots).
- * Mysterious murder of a college student linked to the man who helped create a high-tech surrogate phenomenon that allows people to purchase remote-controlled humanoid robots through which they interact with society.
- * These fit, attractive, remotely-controlled robots ultimately assume their life roles, enabling people to experience life vicariously from the comfort and safety of their own homes.



2009

- * Former astronaut has superhuman strength due to bionic implants
- * Employed as a secret agent by U.S. government
- * based on Martin Caidin novel *Cyborg*
- * Five seasons
- * Spin-off: *The Bionic Woman* (1976 - 1978)
- * Three television movies featuring both bionic characters (1987 - 1994)



1973-1978

- * U.S. Army captain sent into a computed reality to find a bomber



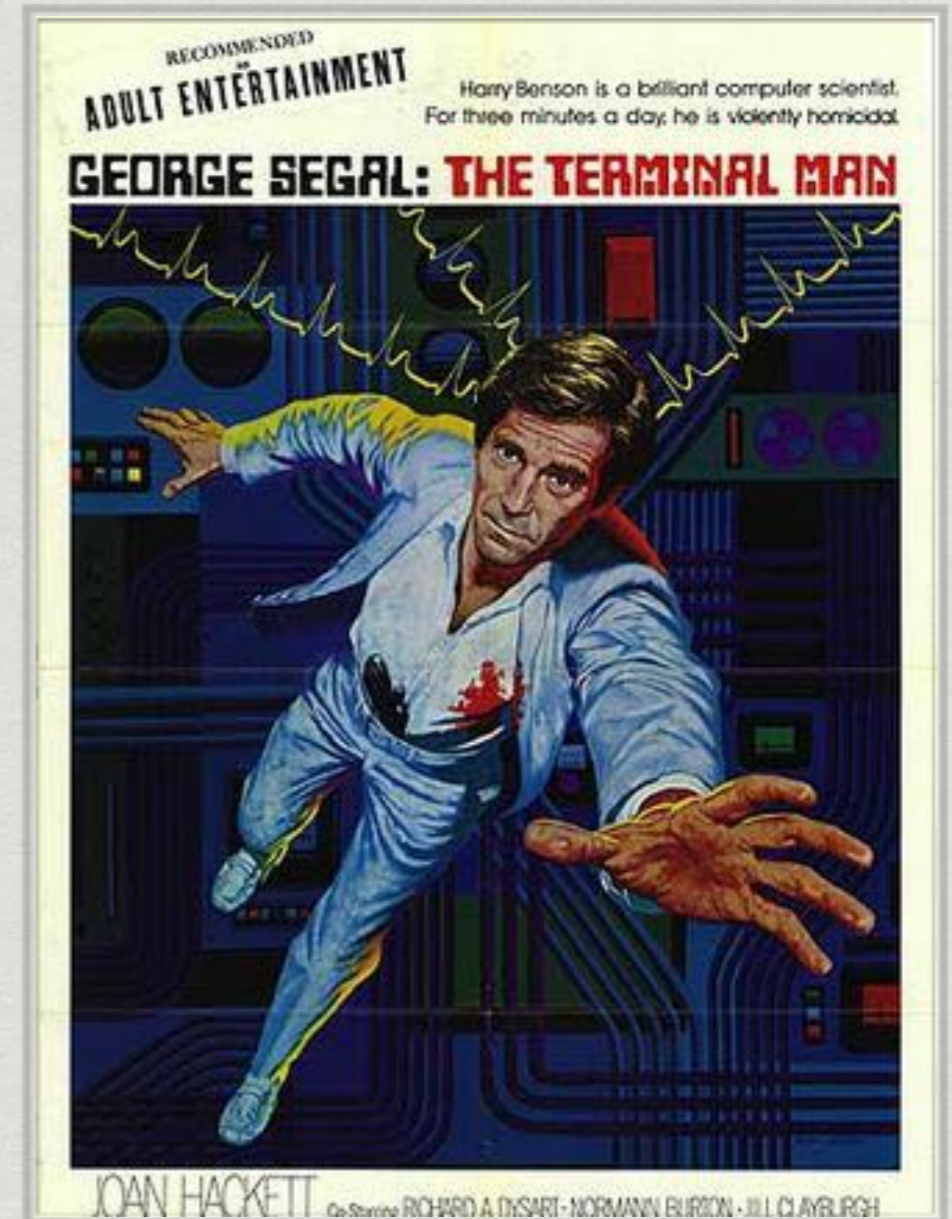
2011

- * directed by Kathryn Bigelow
- * written by James Cameron and Jay Cocks
- * Last two days of 1999, black marketeer of recordings that allow a user to experience the recorder's memories and physical sensations,
- * Attempts to uncover the truth behind the murder of a prostitute.



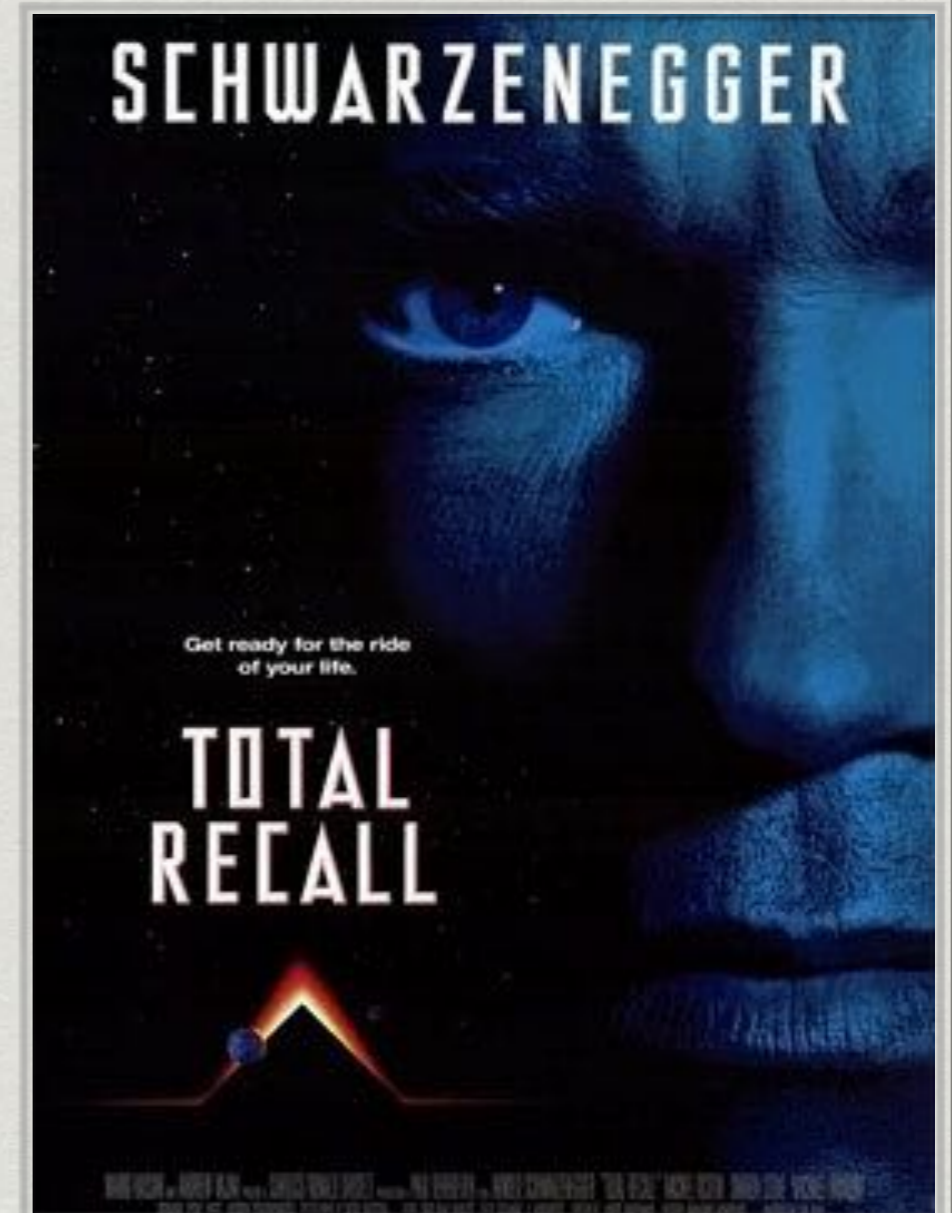
1995

- * based on the 1972 novel of the same name by Michael Crichton
- * Dangers of mind control and the power of computers.



1974

- * directed by Paul Verhoeven
- * loosely based on the Philip K. Dick short story "We Can Remember It for You Wholesale"
- * Construction worker having troubling dreams about Mars and a mysterious woman there.
- * What is the dream & what is reality?



1990

- * Unlike first film, set on a dystopian Earth, (not Mars) and has more political themes.



2012

- * Documentary about Ray Kurzweil



2009

- * Trash compactor robot in a deserted world is left to clean a largely abandoned city.
- * Visited by a probe sent by the Axiom ship, whom he falls in love with and pursues across the galaxy.
- * Themes: Criticizes consumerism, corporatism, nostalgia, waste management, human environmental impact and concerns, obesity, and global catastrophic risk.



2008

J I M C A R R E Y

LIVE



DRY 0 10,909

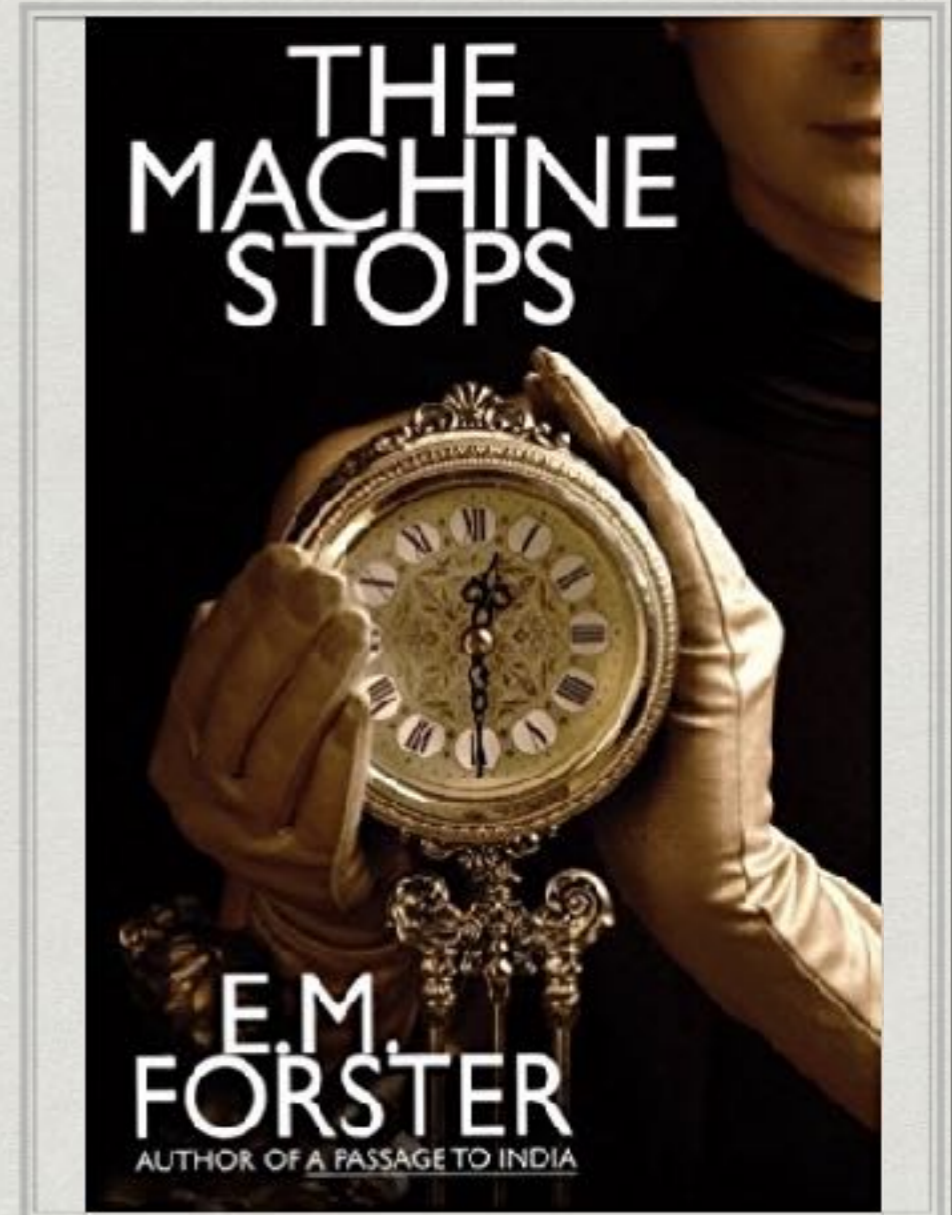
the **TRUMAN** show

ON THE AIR. UNAWARE.

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IN THEATRES JUNE 1

- * Science fiction short story (12,300 words)
- * Set in a world where humanity lives underground and relies on a giant machine to provide their needs, predicted technologies such as instant messaging and the Internet.

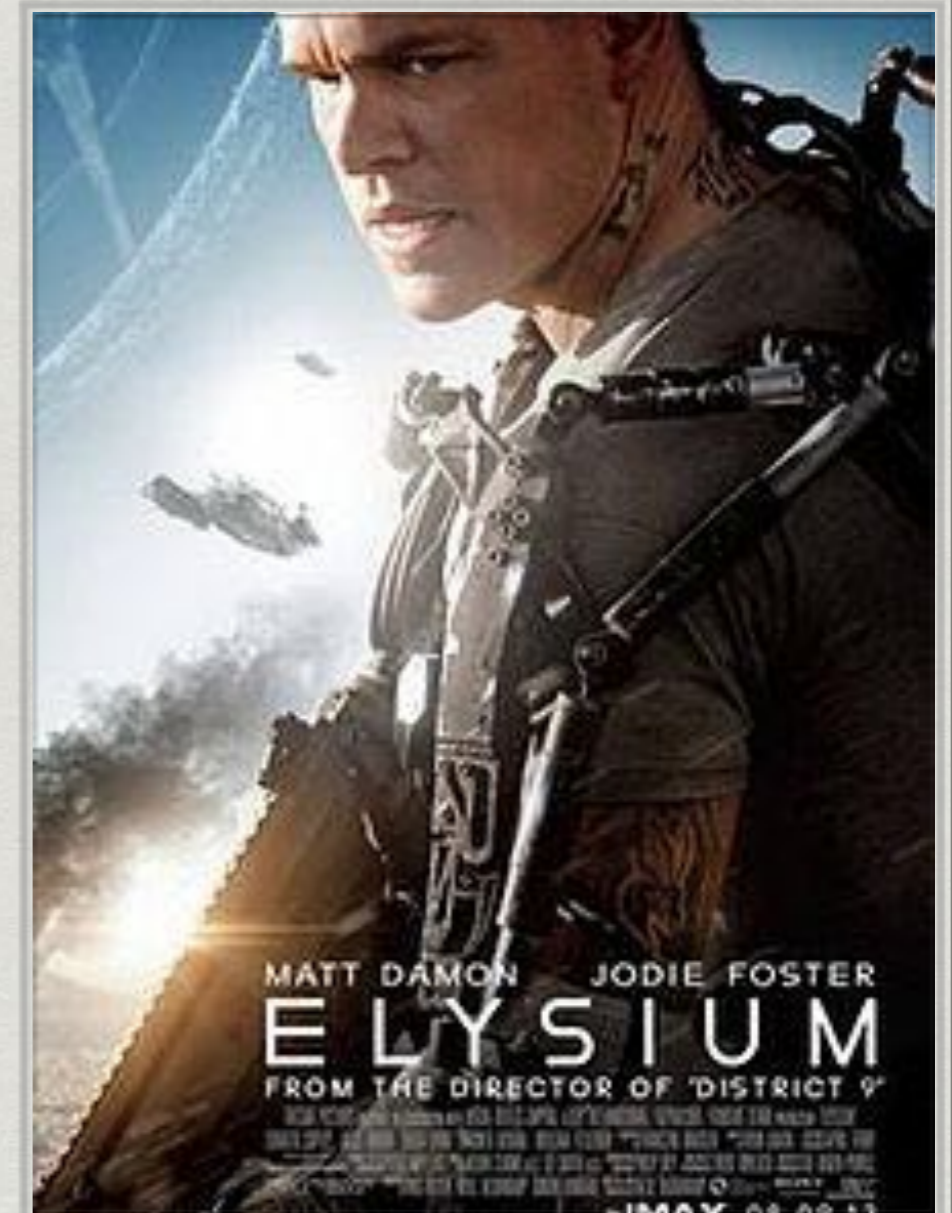


1909

- * 2018 stop-motion animated comedy film written, produced and directed by Wes Anderson.
- * Set in a dystopian near-future Japan, the film follows a young boy who goes in search of his dog after the whole species is banished to an island due to an illness outbreak.



- * 2013 American science fiction action film
- * Takes place on both a ravaged Earth, and a luxurious space habitat
- * Explores political and sociological themes such as immigration, overpopulation, health care, worker exploitation, the justice system, and social class issues.



2013



Westworld (2016 -)

technologically advanced Wild West-themed amusement park populated by android hosts

* *Session #1: Contemporary Issues: Revolutionary genome-editing technology CRISPR*

* *Session #2 (9/26): Contemporary Issues: Biotechnologies that will boost human physical & mental performance to unprecedented levels*

* *Session #3 (10/3): Biotech, part 2*

* **Session #4 (10/10): Moral Reasoning**

* Paternalism & Autonomy: Before class, please read "Ch. 3" ("pages 91-93").

* Truth-telling & Confidentiality: read "Ch. 4" ("pages 152-153")

* Informed Consent: Before class, read "Ch. 5" ("pages 206-207").

* **Session #5 (10/17): Human Research**: read "Ch. 6" ("pages 254-258")

* Reproductive Technologies: Before class, read "Ch. 8" ("pages 425-427").

* **Session #6 (10/24): Genetic Choices**: read "Ch. 9" ("pages 557-558")

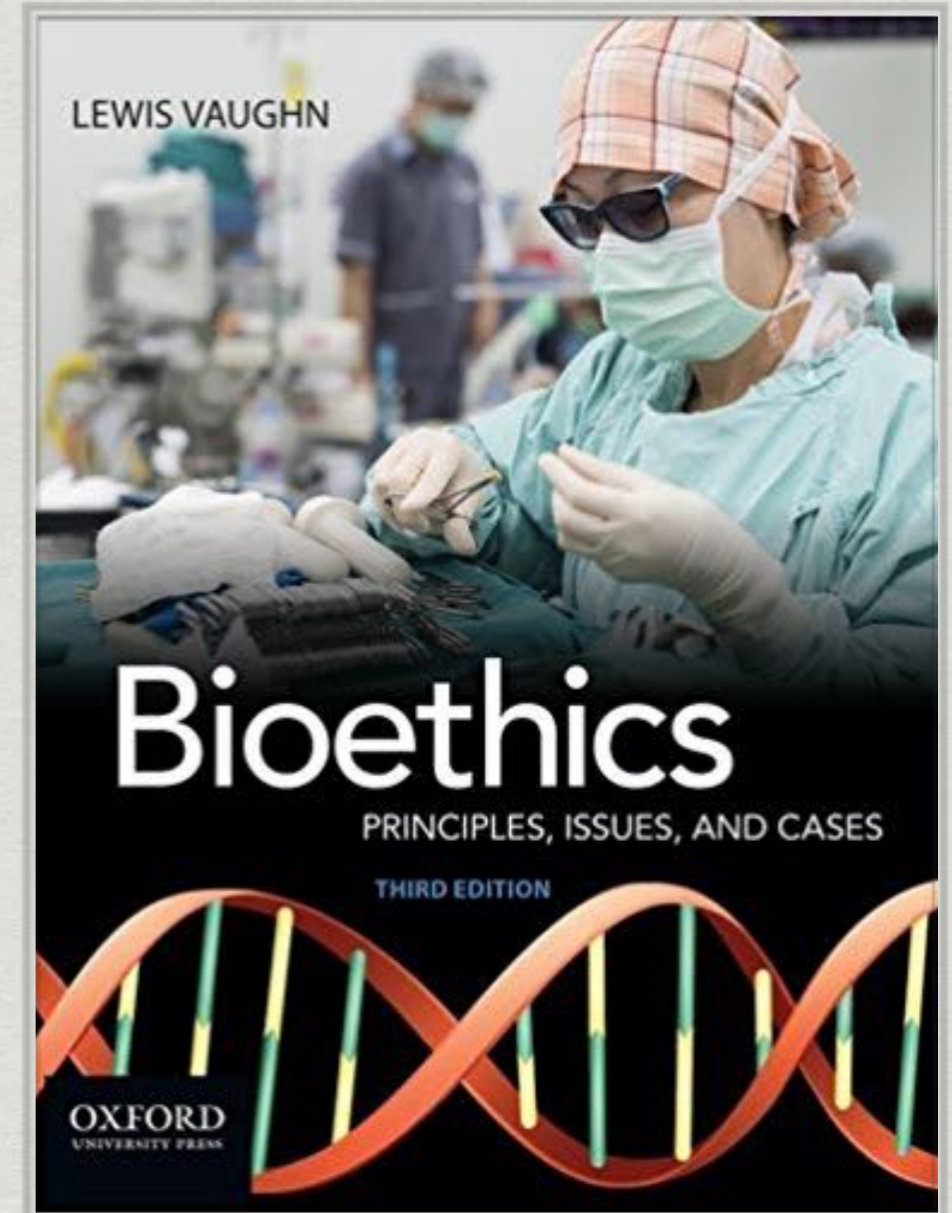
* Dividing Up Health Care Resources: read "Ch. 11" ("pages 732-735")

Bioethics

Applied ethics, focused on

- * health care
- * medical science
- * medical technology

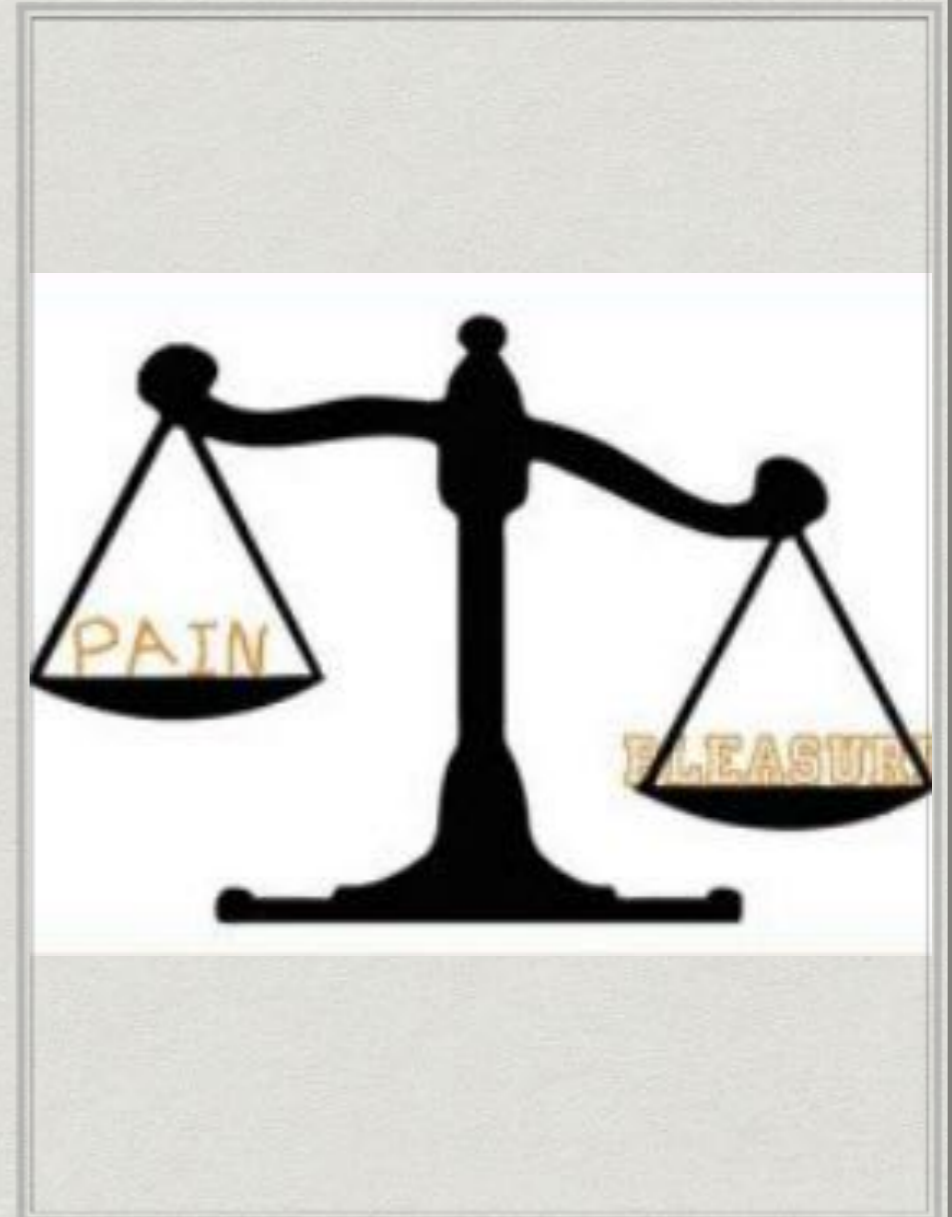
[p. 5]



2017

Utilitarianism

- * Actions are right in proportion as they tend to promote happiness (“intended pleasure and the absence of pain”)
- * Wrong as they tend to produce unhappiness (“pain and the privation of pleasure”)
- * Classic: maximizing the total quantity of net happiness, not ensuring that it is rationed in any particular amounts among the people involved.



John Stuart Mill
(1806-1873)

Deontological Ethics

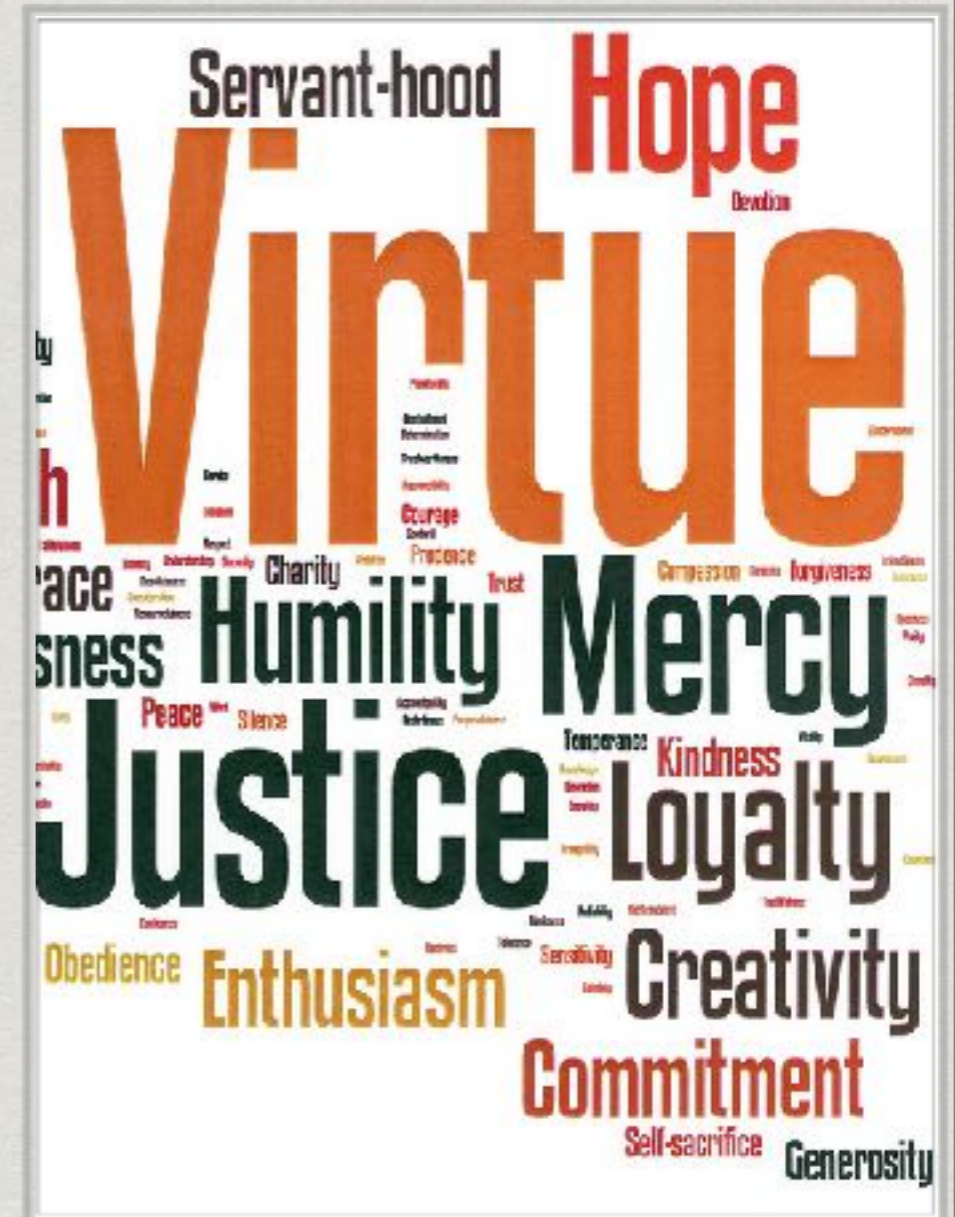
- * Greek: δέον/deon, “obligation, duty”
- * Categorical Imperative
- * Judges morality of action based on rules



Immanuel Kant
(1724 - 1804)

Virtue Ethics

* Habit



Aristotle
(384-322 BCE)

ANARCHY,
STATE,
AND
UTOPIA



Robert Nozick

ORIGINAL EDITION

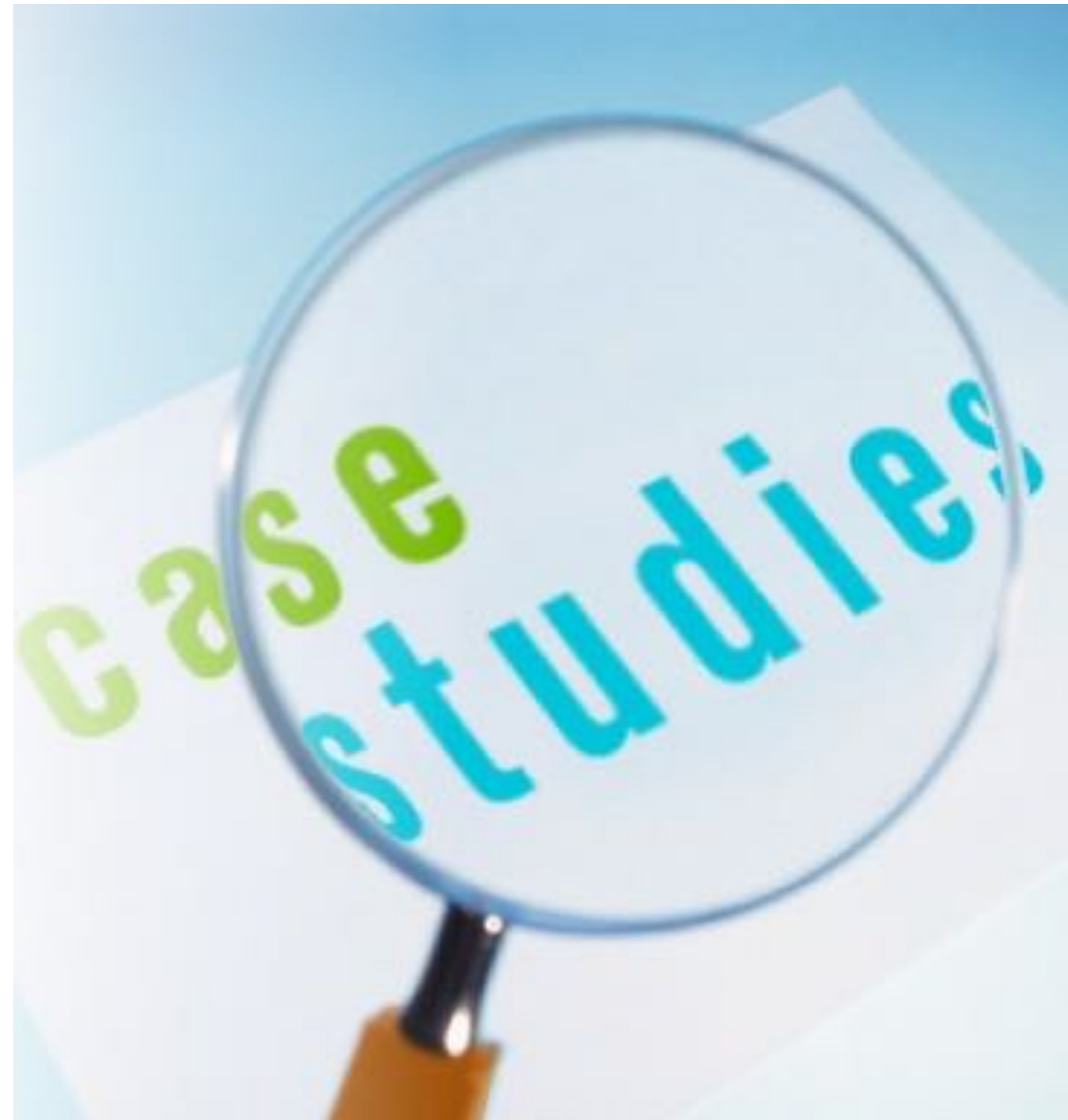
JOHN RAWLS



A THEORY OF
JUSTICE

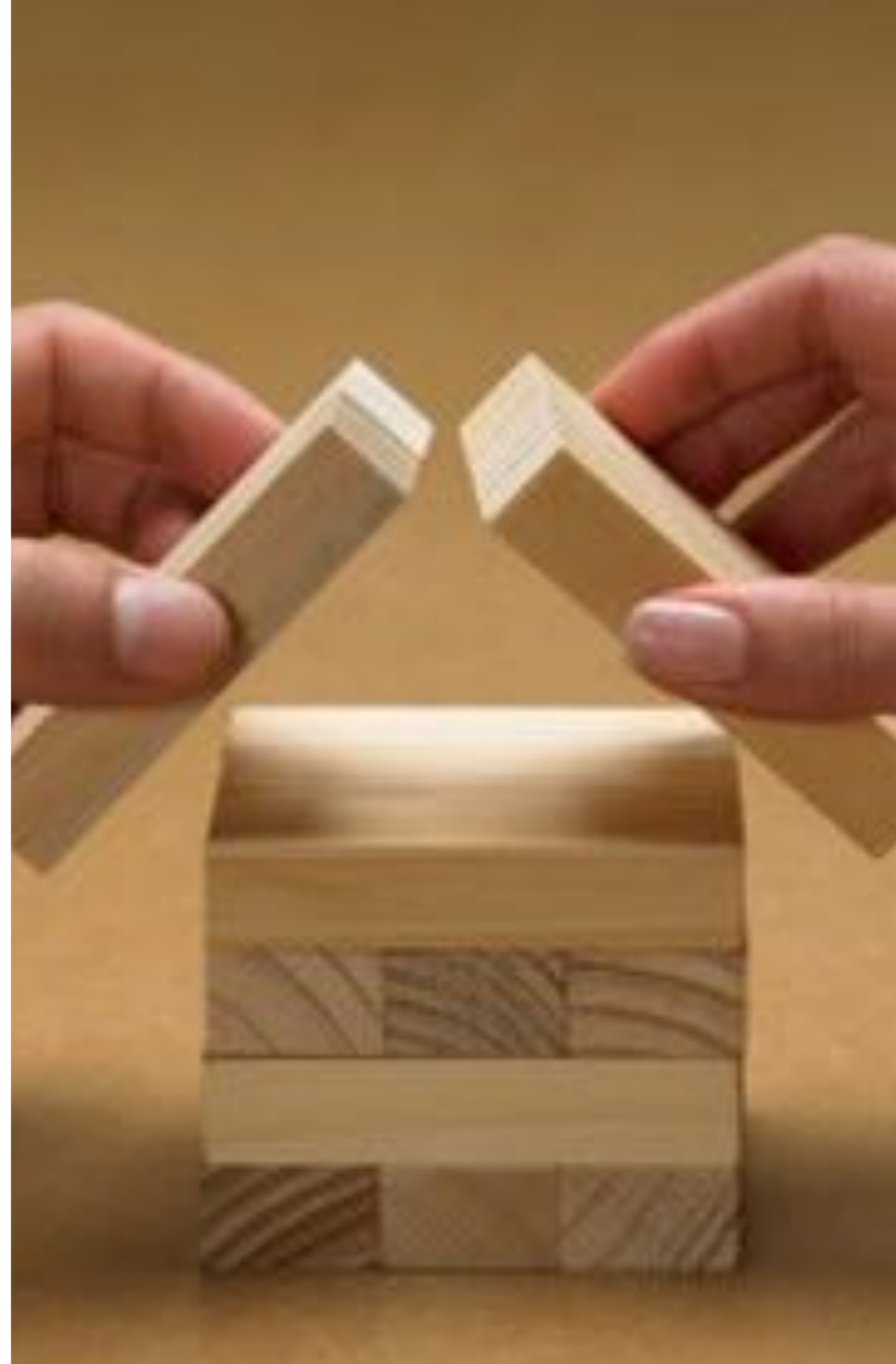
Three Steps

- **Define** the situation (*What's happening? Cast of characters? Chronology?*)
- **Analyze** the case (*Basic issues and values?*)
- **Alternatives** available (*Motives behind each? Consequences?*)



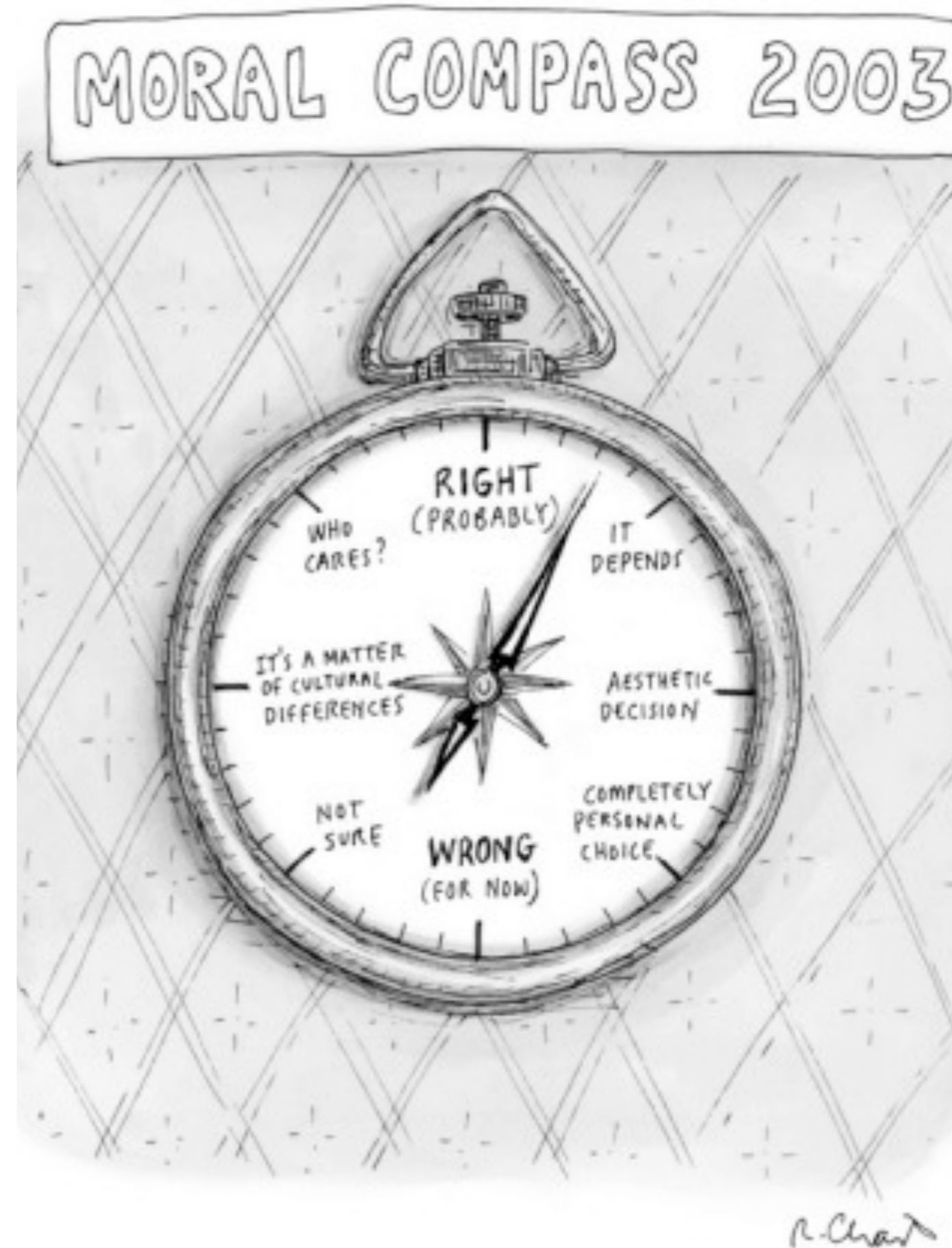
“BYOE” Journal

- Are you **consistent** in your ethical framework/approach as case studies change? (*Why or why not?*) (*Is consistency a virtue or vice?*)
- Is there a pattern/logic/reason/emotion **underneath** your reactions/decisions?
- Do you find yourself **changing** from your initial “gut” reaction through the discussion process. (*Why or why not?*)



Credo: Ethics

- Carl's Touchstones: Pluralism / Pragmatism / Progressivism
- **No Perfect Past** To Which We Can Return (*stories of exemplary lives and communities can nevertheless inspire us*)
- **No Perfect Future** (*choose love and hope anyway*)
- **No Single, Perfect Way** (*look for touchstones such as tradition, reason, and experience*)



Humanism

“I spell my God with two o’s and my devil without a ‘d’”

—Cyrus Bartol, *Radical Problems* (1872)
[Unitarian minister and member of the Transcendental Club]

NEW YORK TIMES BESTSELLER

Finding purpose, compassion, and community

good
without

Good

What a Billion Nonreligious
People *Do* Believe

Greg M. Epstein

HUMANIST CHAPLAIN AT HARVARD UNIVERSITY

“A timely manifesto for a misunderstood and maligned school of thought.”

—Kirkus Reviews

Liberal Turn in Theology

(Latin *liber*, “free”)

- *from* authority in hierarchy/community/tradition
- *to* reason/experience with 18th-c. Enlightenment.
- Friedrich Schleiermacher (“father of Liberal Theology”), *On Religion: Speeches to Its Cultured Despisers* in 1799



7 DEADLY SOCIAL SINS

POLITICS *WITHOUT* PRINCIPLE

WEALTH *WITHOUT* WORK

COMMERCE *WITHOUT* MORALITY

PLEASURE *WITHOUT* CONSCIENCE

EDUCATION *WITHOUT* CHARACTER

SCIENCE *WITHOUT* HUMANITY

WORSHIP *WITHOUT* SACRIFICE

- Gandhi

Conveyer Belts

Egocentric —> Ethnocentric —>

Geocentric —> **Cosmo-centric**



Hubble Deep Field

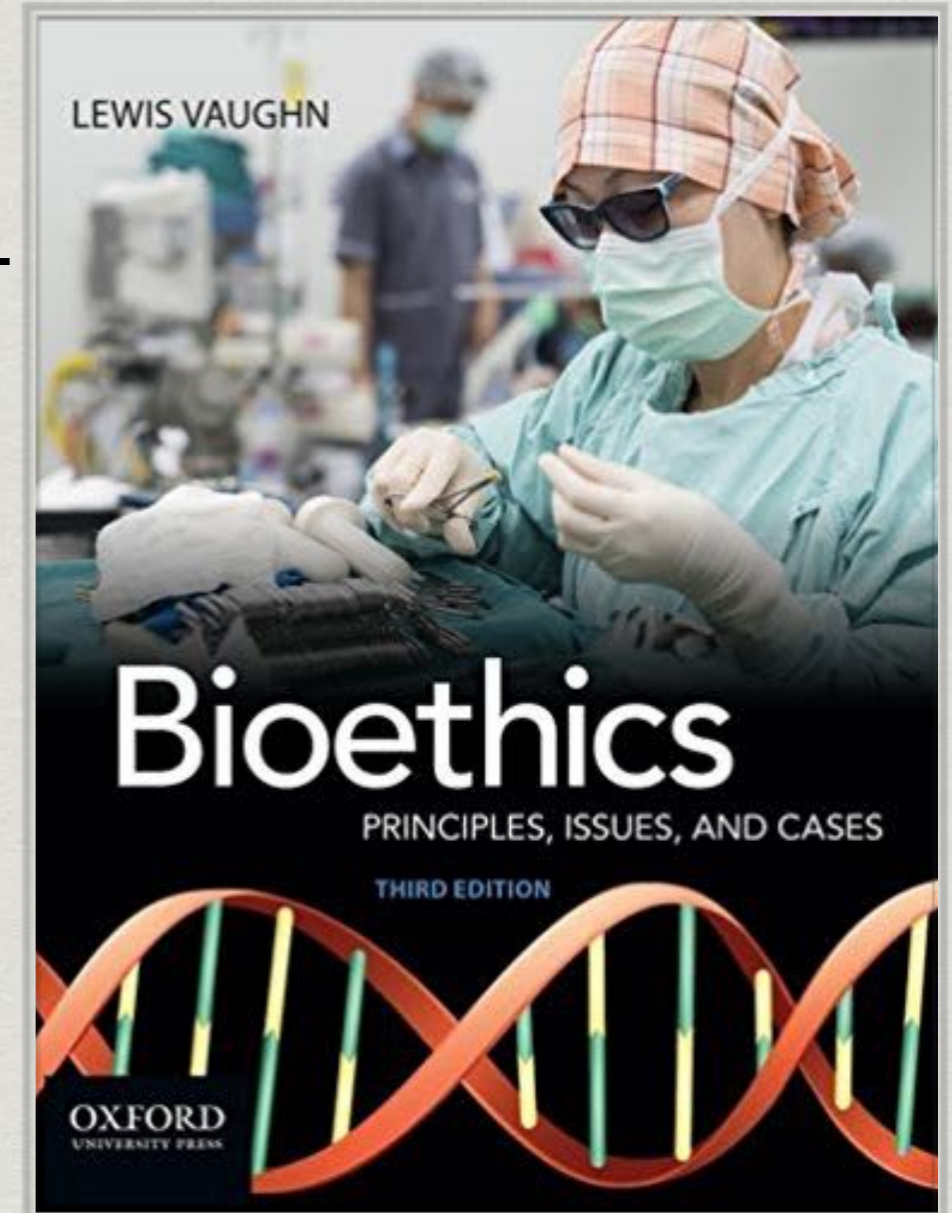
Paternalism & Patient Autonomy

Autonomy

- * rational capacity for self-governance or self-determination.
- * Individual's power to deliberate about available options, choose freely among those possibilities, and act accordingly.

Paternalism

- * overriding a person's actions or decision-making for their own good.



2017

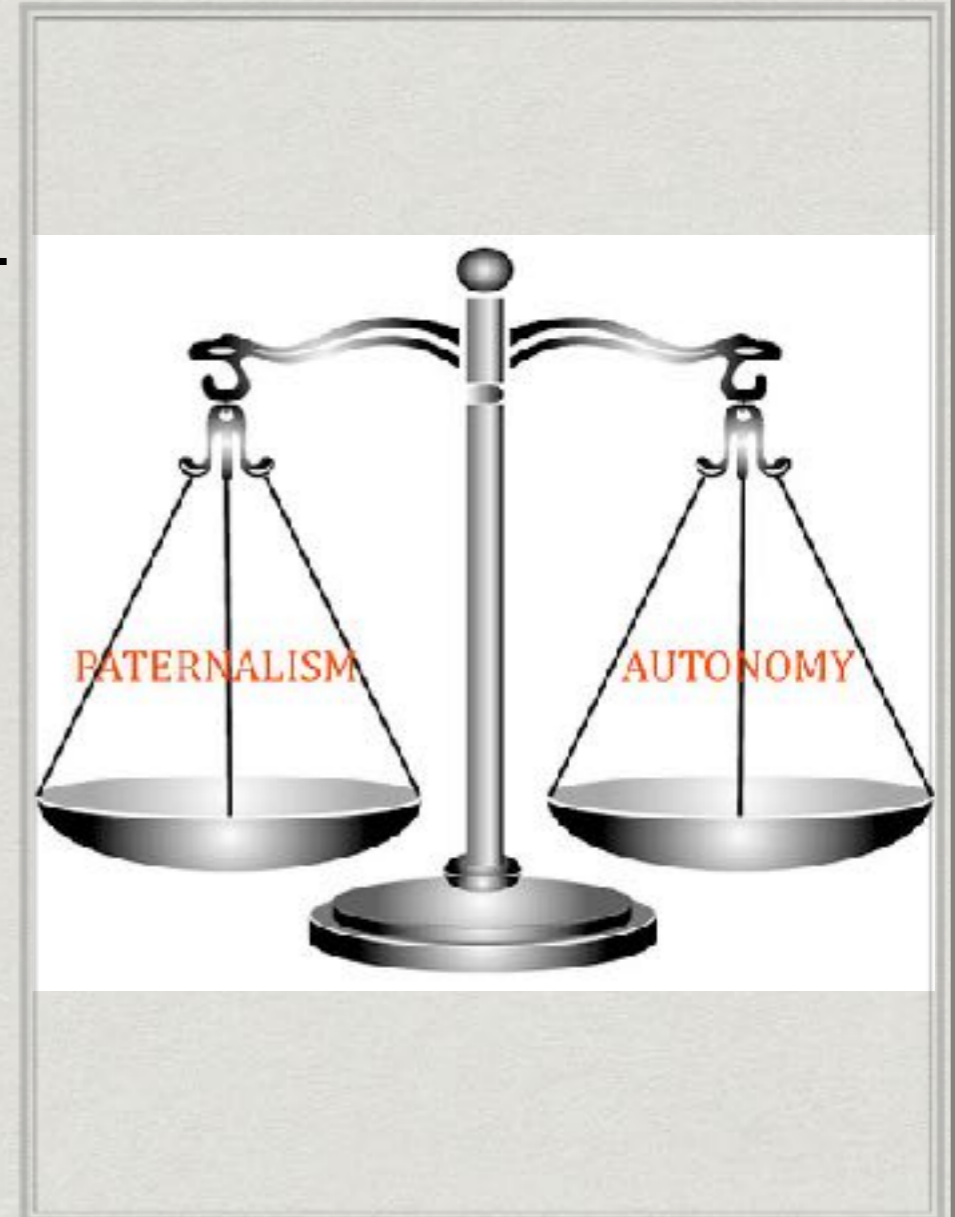
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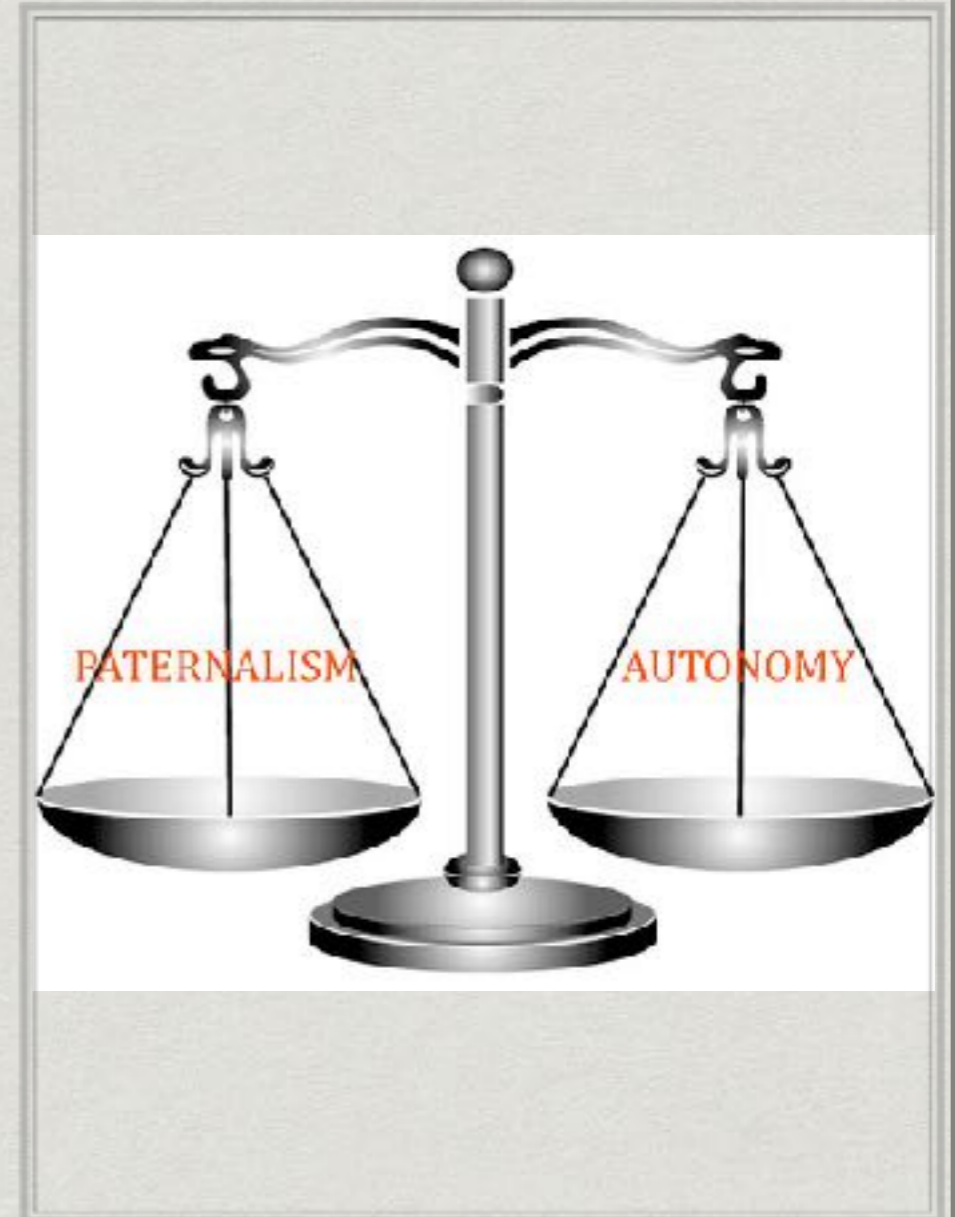
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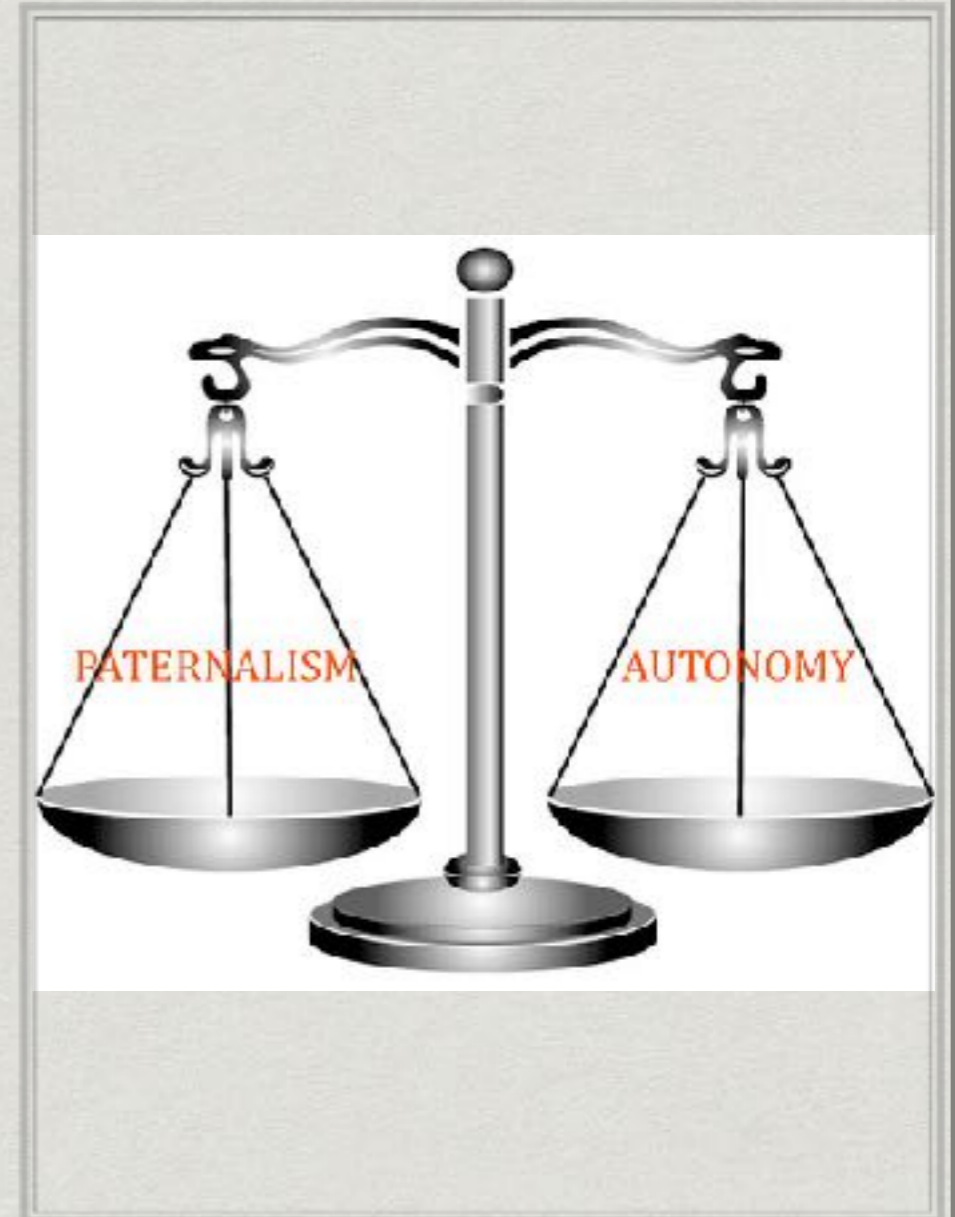
Paternalism & Patient Autonomy

- * Until late 1980s: right of competent patients to turn down treatments ordered by physicians was unsettled [p. 83]
- * Later court rulings: bedrock principle that a competent patient has a right to reject recommended treatments, even life-saving ones.



Paternalism & Patient Autonomy

- * Traditional nursing: physicians ultimate authority
- * Others: nurse's ultimate responsibility is to be an advocate for patients



Elizabeth Bouvia (1958 -)

- * 1983: Age 26, admitted herself into the psychiatric ward of Hospital in California.
- * Almost totally paralysed by cerebral palsy and had severe degenerative arthritis, which caused her great pain.
- * Alienated from her family and husband, and had been entertaining thoughts of suicide.
- * Requested hospital authorities to allow her to starve to death. They refused and ordered her to be force-fed.
- * Bouvia contacted the American Civil Liberties Union, which assigned her a lawyer.



Elizabeth Bouvia (1958 -)

- * Court upheld hospital's decision and ordered force-feeding to continue
- * Bouvia tried to resist the force-feeding by biting through the feeding tube. Four attendants would then hold her down while the tubing was inserted into her nose and liquids pumped into her stomach.
- * Some physicians: called this battery and torture,
- * Others: hospital was right to err on the side of continued life



Elizabeth Bouvia (1958 -)

- * Appealed lower court ruling and lost.
- * In addition to the force-feeding, she was hooked up to a morphine drip to ease the pain of her arthritis.
- * Eventually, she appealed again and court ruled in her favour that the force-feeding constituted battery
- * After the court case, Bouvia decided that she would live.
- * In 1998, she appeared on *60 Minutes*, saying that she was still in pain and had felt great pressure to continue living; she expressed the hope that she would soon die of natural causes. [88-89]

