21A.216J Dilemmas in Bio-Medical Ethics
2005/4/13 (W), Week 10, Class 19

Readings
Brian Alexander. Rapture, ch 1-6

Class Business
Large paper topic will be given over the weekend—on stem cell, reproductive technologies and/or end of life care

Student Presentation
The ways that ideas in science are culturally constructed and change over time. How scientific and popular culture intersect.

Alexander: lay scienceman, writer

Chapter 1

- Rapture—the event that comes at the end of days, biblical Revelations, 144,000 individuals who are the chosen ones who will be saved and taken off earth, will not die, when Christ returns. For conservative Christians, the idea that some will be liberated and saved, who will not die and not suffer trials and tribulations of the end of the world. A very small movement of looking at science as something that will be a source of salvation—salvific
- Science as something that can solve Death and aging as a problem, or something that is "more perfect" through silicon, to avoid unavoidable evolutionary process
- Transubstantiation, that Jesus's body was transformed into something else (bread and wine at Last Supper become the literal body and blood of Christ), material body transformed into something spiritual, allusion.
- Different ways of preserving people—head only, full body. Viewing head as essential part
- Life extension field v mainstream science—the struggle to get themselves to be legitimate:
    - What's the different between science and science fiction? What's the difference between plausible and not plausible?
    - Is death a disease that can be cured?
    - If everyone lived forever, then there would be overpopulation (Elves in Lord of the Rings?)
    - Pseudo v Hard Science: there are certain achievable outcomes.
    - Entropy—fundamental law of nature, that everything will decay—artificial insemination.
    - Is Science a piecemeal—common body of knowledge today is false/impossible 200 years ago. What is possible?

    - Orthodox—what is the standard of research? How much debate there was and who were the players.
- Discovery of Genes—life extensionists saw it as a PLUS, the building block of life—death and aging in the genes—to "fix" something that is abnormal for unlimited control
- Science as a new religion? to allay social fears of death, aging—death is not valued. The fixation of prolonging the physical form—would science have developed in the same way say, in Buddhist form, where death is seemed as a cycle. Very American ideas of controlling the body—very situated discourse. How much of science is shaped by the society and how universal is science?
    - the extension of life—the treatment of those "problems"—will that be universally accepted?
- What's the difference between cosmetic procedures and life-threatening problems? in a culture where old-age or young-age revered? Framed in universal terms of value
    - The process of the Pope's decline—should we use extreme measures to stay alive? Meanwhile Terri Schiavo—her life prolonging, was she conscious or not, etc.? Why does it seem, in this particular culture, that death is the enemy, that death is something to be transcended? How does secularization affect this? The technical and sacred blend together to address clinical sciences. Medicine as with a soteriological function, to address moral crises. How technology is involved in more and more minute aspects of life.
- The fear of death—apparent on the death bed. Life is far removed from death. Seeing the signs of deteriorating health—the choice of life or death.
    - Quality of life or length of life—people who diet now don't do it for long term health but for immediate vanity. Cost-benefit—where the value was placed. It's worth being miserable now to live longer.
    - What is it that makes death such a concern? Americans as a culture of narcissist, cultivating and enhancing the body, achieving a certain ideal of beauty. Exercise for health, for appearance/vanity.
    - How are we defining life? an underlying issue
- The ultimate metaphor of medicine to control life; death, aging as a flaw; a question of entitlement that science can achieve.

Chapter 2

- Reason replacing religion; that scientific investigation can lead to tangible benefits
- Human beings viewed as mechanistic—privileging the head; the idea to understand all parts in order to; biological reductionistic, materialistic view
- HG Wells, the word of Rapture—time of when people could take control over things and nature, the coming of greater things. To achieve utopia.
- Life extension—old social systems fell and science and technology came to the forefront. Science started to take precedence as a means to improve their lives.

Religion as "the opium of the masses"—for Man to become God, to control biological destiny
- Social background—Galton, idea of Eugenic theory, heredity, something that could be controlled.
- How much proof do you need to believe anything?
- World views—Alexander is showing how this biological world view can become a belief system; how does that happen?
- Negating possibility of after life; technology to live forever so that you don't have to find out what happens after you die. Notions of post-death are cultural.

Chapter 3
- Scientific training—not totally off the wall; influenced by fields of biology

Chapter 4
- HGH—human growth hormone; miracle drug; metaphors of evangelism; only available to certain people—can we put a price on people's life?
- majority of life extensionists, culture of privileged;
- different set of ethics; to actively extend your life, to improve quality of your life, not everyone is seeking it out
- Issues of choice—

Chapter 4. Lazarus Long
- Religious, social conventions—story of every ethically problematic issue:
  - eugenic family
  - jealousy of noneugenic families
  - noneugenic families gone straight to biomedical treatments
  - a lot of ideas out there
- How the progress of science meets what society wants?
- Death as the ultimate tragedy? – that view, to transcend it, not through religion but biological improvement
- Leary—got fired by Harvard for pursuing research on psychedelic drugs; what is considered mainstream or fringe science—what do these outside organizations have against these? What made it so objectionable? Mainstream popular beliefs of what is ethical. (He was dropping acid with his students—it's illegal; hanging out with cryonics people.)
- Possibility of computers to extend life, digital culture to promote a new identity, a new life; MOSH—mostly original substrate humans. Virtual reality to expand reality. a MATRIX reality. Artificial intelligence. What is it that makes us human? Can consciousness transfer to a computer and would that still be human?
  - Chimeras—boundaries to species; what happens with technology in the future
  - Would you download yourself onto a chip to exist for all of eternity for all of eternity? At what point will computers become human?

    - Human head transplanted onto monkey; ick factor; talk about informed consent! If you can't consent is that ethical?
- Max Boer—make your own virtual reality, Star Trekkie device, to hold everything you hold dear, not only sense, perceptions, but also memories of your house
- Very self-centered view of death;
- Marvin Mintsky—look him up
- Chapter 1—head only preserved and defrosted; all that's important is the head
- This is actual CULTURE—even as we laugh; it's definitely a subculture, slightly fringe, who are interested in these technologies.
- Claim of being Raellians.

Chapter 5

- DNA as a technology—active use; to actually make stuff
- Mainstream science centers at MIT, Harvard, CalTech, etc., that have pursued this, to put biotechnology at the forefront. What is possible, what is not possible. Were life extensionists visionary?
- What is considered as orthodox (science, religion), you need heterodox in order to define the orthodox, to shape one's identity, questions of power and knowledge, practice.
- Biotechnology is uniquely created as for-profit enterprise—merged with universities.
- What made William Hasseltine pursue what he did—pursue MD to eliminate suffering. Basic science v medicine—real impact vs everyday impact
    - altruistic endeavor and well-intentioned, very moral
    - campaign of improving people's lives
    - privilege the body, ignoring the social concerns that might arise
- Biology as church, scientists as popes; putting science as a position of power to take control of humanity
- Rapid biological development: cloning (Chapter 6)—cloning dolly, IVF, etc. to become mainstream practices. The rise of biotech firms; historical factors leading to companies; the commercialization of biotechnological research
- How much in biotechnology can be controlled by market forces? Who will give you money to do it? Federal, top-down control to ensure quality or market forces.
    - Federal—top-down; costs money; has to come with somewhere
    - How interest groups—divisions between these institutions is murky;
    - private money v public money—the cost to develop a drug is so huge; it has to be market-based, what is desire, what is demanded, in order to produce that. Nonprofit biotechs exist—research groups to research medicines that have less demand for diseases that aren't as frequent
    - 500-800 million dollars to get a drug onto the market. Rare diseases—what about those? relying on market forces; underprivileging those. Government programs—NIH—to give companies they need to market drugs. Orphan drugs—the drugs that no big biotech company is willing to work on.

- Does the Reach toothbrush actually do anything better? self-marketing, how to sell your own idea.
- FDA—class 1, 2, 3; legislation—to go through FDA; how to prove'. What do you define as the problem? Taken as a fact—how you are posing the problem? How you push your agenda—how you are posing the problem, power issues?
- Back to question of access—how much is it going to cost, how will it get distributed—are there more problems? could this money be spent elsewhere?
- commodified human bodies; disadvantaged—egg harvesting—surplus embryos taken from IVF clinics; save for later. Researchers are asking if those embryos can be donated as research
- how developments in science are slowly supporting the agenda of life extensionists?

Executive Summary

- How much federal control?
- The argument was not compelling, appearing compelling—what background are they coming from; how this changes between administrations