

Anthropology of Science

- Food for thought:
 - Is there a culture of science?
 - Who is in that culture?
 - Is there more than one?
 - What are the boundaries of science?

- 1. Anthropology of science:
 - a. Uses ethnographic method to study science
 - b. Recognizes that we all participate in science in some way.
 - c. Looks at science from the perspective of an outsider.

- 2. Anthropology of science emerged from several different disciplines:
 - a. Anthropology of Other Knowledge Systems**
 - i. Evans-Pritchards studies the Azande
 - 1. Looked at witchcraft and notions of rationality
 - 2. Witchcraft explained misfortune:
 - a. i.e. when a building falls, they blame it on witchcraft, even though they know that the supports for the structure were weak and the people sitting under the shelter were there for a reason. Witchcraft is used to explain what we call coincidence or bad luck.
 - 3. In this case, rationality doesn't have an advantage.
 - 4. Relativism of rationality
- b. Sociology of Science**
 - i. Merton's universal norms of science (1912):
 - 1. Disinterestedness – Scientists should not prefer one result to another
 - 2. Organized Skepticism – nothing is taken on faith. Every fact is challenge.
 - 3. Communism – share work with the community. The work of science comes from cooperation
 - 4. Universalism – Scientific truth applies everywhere and to everything, regardless of race, class, nation, or other circumstance.
- c. History of Science**
 - i. Refuted some of Merton's norms
 - ii. Not that these aren't good idealized notions of science, but that they are rarely realized.
 - iii. Kuhn (1962) - how are truth claims evaluated?

1. How can smart people see the same world and come to different conclusions?
- iv. Most science done on the day to day is “normal science”.
 1. Takes the science in a text book as a given and solving puzzle like problems to elaborate a paradigm.
- v. Some science is revolution.
 1. Usually done by young scientists. Transforms the field and changes paradigms.
- vi. Are we blind to present absurdities?
- vii. Foucault (1963) – the very way that ideas are divided into the knowable and the unknowable is interesting.
 1. What are the grounds on which things are considered true or not true?
 2. e.g. medicine. Why do physicians learn about disease categories first and case studies later? Why is vision the primary sense used to diagnose a patient, not touch, smell or the patient’s own account?
 3. Allowing the patient’s symptoms to rise to the surface for the physician to see is not just simple empiricism, it is a reorganization of the body into something abstract.

d. Anthropology as a whole

- i. Why should anthropology look only at the primitive and the marginalized?
- ii. If ethnographic methods work, why not use them on our selves?

3. How are scientific facts made?

- a. Bruno Latuor and Steve Woolgar 1979 “Laboratory Life” Looked at the Salk Institute
 - i. The lab as a field site. Didn’t want to go native.
 - ii. Questions what was taken for granted
 - iii. Human aspects are integral to the science
 - iv. Also introduce a fictional outside to the lab who asks what seems to be silly questions: Whether the mice in the lab are for food or for ritual purposes
 - v. How ideas go from theory to fact. Initially they need justification, but ultimately become just accepted facts.

4. How are scientists made?

- a. Physics labs Sharon Traweek: how high energy physicist are made “Beamtimes and Lifetimes”
 - i. In practice, physics are a culture as well, that needs to reproduce itself
 - ii. Looks at labs in California and Japan
 1. As an undergrad, absorb text books
 2. Grad student, learn to analyze facts and test the validity of claims, getting a lot of support from advisors
 3. Post doc drive, persistence and charisma, must take risks

- 4. Physicists balance research time and time spent lecturing
 - iii. Also different ideas of male qualities: California lab, independence and drive are seen as male qualities. In Japan, interdependence and self sacrifice are seen as male qualities.
 - b. Also Hugh Gusterson's book "Nuclear Rites" on scientists who make bombs
 - i. Tried to understand how these scientists see the world.
 - ii. How is a nuclear scientist made?
 - iii. Individuals are expected to come up with moral explanations for their work on their own, but there is a high degree of uniformity.
 - iv. Central axiom of lab life: The work of weapons designers, through deterrents, assures that these weapons will never be used.
- 5. How do scientific consumers make their way in the world?
 - a. Rayna Rapp
 - i. Became pregnant at age 35 with a very much wanted pregnancy, but an amniocentesis revealed that the child had Down's syndrome and she decided to abort the pregnancy.
 - ii. Anthropologist themselves are subject to anthropological consideration.
 - iii. Wrote about her experience in Ms magazine.
 - iv. Decided to make this project into a larger anthropological study how people use the technology amniocentesis.
 - v. Discovered that the results of this test are culturally dependant.
 - vi. Talks with pro-choice and pro-life women about their decisions.
 - vii. Women who use the technology of amniocentesis are moral pioneers
 - viii. Making choices on the standards for entry of human life into the world
- 6. How do scientific facts travel?
 - a. Joseph Dumit "Picturing Personhood"
 - i. How scientific images are taking to have meaning in different communities
 - ii. Scientists take a lot of pains in explaining the images in scientific journals, but once the images leave the realm of science, all those careful qualifiers disappear.
 - 1. Art is involved. Lose checks on accuracy. Squishy science
 - 2. Images shown to the public may be outlier images
 - iii. e.g. Propaganda campaign on Ecstasy use on the brain
 - iv. The images have power even outside the science.
- 7. A few insights from anthro of science:
 - a. There is no "outside" to culture
 - i. Nature is not outside of culture
 - ii. Science if not outside of culture

- b. What counts as truth is socially constructed everywhere
- c. How can anthropology be global and local simultaneously?

8. Studying Scientists

- a. Questions of access to:
 - i. people who are working on secret or proprietary information
 - ii. People who are very powerful, pressed for time, have no incentive to work with anthropologists
 - b. Scientists are also media savvy. Will respond to how they are portrayed, both positive and negative.
 - c. Scientists who do let you into their lab have agendas as well
 - d. Many people who go study anthropology of science do have scientific training. It's about half insiders and half outsiders.
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- Anthropology of science is still pretty marginal, but growing steadily.
 - Many of the people discussed in this lecture are from MIT. Much of the reason for this is the fact that MIT is a great place to study scientists.