Anthropology of Science
Department of Anthropology
Lakehead University
ANTH 4813
Winter 2015

Instructor: Frederico Oliveira, PhD
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Dates of Appointments: January 6 to April 7, 2015
Classes Hours: Tuesdays 4:00 pm to 5:30 pm; Thursdays 4:00 pm to 5:30 pm

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Course Description and Objectives:

This fourth year course in advanced anthropological theory and practice has the anthropology of science as its focus. In the past 40 years, sociocultural anthropologists have taken the ethnographic methods they systematized for studying exotic peoples in remote localities and applied them to scientific communities and practice. Social scientists have attempted to focus at the socioeconomic and political perspectives within which scientists are made and within which scientific facts and discoveries are constructed. Science and Technology Studies (STS) is an interdisciplinary and vast field in many ways and we are going to attempt to read in a variety of directions within it.

Given the interdisciplinary nature of this course, we will make an effort to focus on *some* of the key theoretical texts and ethnographic products that have appeared within the fields of knowledge that interconnect with the Anthropology of Science – Sociology of Science, Science and Technology Studies, Philosophy of Science, etc. This course is expected to provide the students with the intellectual tools to understand the essential principles of STS and the kinds of ethnographic "insights" that support the study of science as a social and political phenomenon.

The course is divided in two main topics. One topic is the history on the discipline, including some anthropological precedents, and the ongoing and controversial legacy of French philosopher and anthropologist Bruno Latour. Latour's *Laboratory Life* (with Steve Woolgar) symbolized one of the first ethnographic investigations of scientific practice, but Latour's more recent work has extended into political philosophy, and efforts to reorganize fundamental categories and methods of social science. The second topic is the result of approaches derived from ethnographic studies of science "beyond the laboratory," to more "field based" scientific subjects outside the conventional scrutiny of science studies.

Course Reading:

No textbook is required for this course. There are a number of articles and book chapters that are required reading and are listed below for each week. All are available electronically at the course website.

Course Requirements and Grading:

Weekly Writing Assignments (60% of the final grade): These are short essays on the readings that are due at the start of the class. It is expected that you provide a brief summary of the readings, but do not be restricted to it. You should write a two to three page document (single spaced) evaluating the concepts, arguments, comparing them with other readings and using your paper as a guide to stimulate the discussions of the class. Here you have some tips to organize your assignments:

Try to get the big picture.
- What is the phenomenon being explained?
- What is the explanation offered?
- How does this apply to a specific observable phenomenon in social relations, in other words, what examples can you generate to illustrate the explanation offered?

With whom (or what alternative school of thought) might the author be arguing? Or, how does this explanation differ from other explanations for the same phenomenon?

Close textual reading.
- Find some portions of the text you want us to discuss for close reading and interpretation.
- Find portions that are difficult or unclear to you.

Find portions that you think exemplify the author's most important insights

Final Project Presentation (40% of the final grade): You will choose one of the books from the Recommended Readings and will present it in the last the day of class. You should write and present in class a written document (10-15 pages double spaced) introducing the main arguments of the book and dialoguing with relevant debates on STS seen during the course. A handout will be provided explaining this assignment in details.

Class Participation – Students are expected to attend all classes, critically read the assigned materials prior to class and participate in class discussions and assignments. Since this is a fourth year advanced seminar course, it relies upon the participants' capacity to contribute in a fruitful discussion in the seminar meetings. This means that each student should be familiar with the central arguments of the required readings, and be able to develop opinions on the connections/disconnections in the larger body of readings for the week and across the term. Missing more than one class for reasons other than justified emergencies and illness will result in a 10% final grade deduction. Students who miss three classes without a reasonable justification will automatically fail the course.

General Course Policies:

1. It is expected that students will be respectful of their fellow students, their instructor, and cultures and traditions which are not their own.

2. Plagiarism consists of passing off as one's own the ideas, words, writings, etc., that belong to someone else. In accordance with this definition, you are committing plagiarism if you copy the work of another person

and turn it in as your own, even if you should have the permission of that person. Violation of the university's policy will result in a grade penalty or failure of the course.

3. The final date to drop the course is March 6, 2015.

4. This course outline is subject to minor changes during the course of the semester.

Course Schedule

Week 1:

(Class 1, Jan-7): **Introduction, Course Outline Presentation and Film Exhibition**

Week 2: **Philosophy of Science and the early years of Science and Technology Studies**

(Class 2, Jan-14) CLARKE, D. 2006. "Descartes Philosophy of Science and the scientific revolution". In: John Cottinghan (ed.), *The Cambridge Companion to Descartes.* New York: Cambridge University Press, pp. 258-285

SISMONDO, S. 2004. *An introduction to science and technology studies*. London: Blackwell (Chapters: 1 and 2).

Week 3: **Anthropological precedents**

(Class 3, Jan-21) EVANS-PRITCHARD, E. E.1937. *Witchcraft, oracles and magic among the Azande*. Oxford: Clarendon Press Oxford. (Chapters 1 and 4)

LÉVI-STRAUSS,C. 1974. "The Effectiveness of Symbols". In: *Structural Anthropology*. Basic Books; pp. 186-205.

Week 4: **Anthropology discovers science and laboratory**

(Class 4, Jan-28) SISMONDO, S. 2004. *An introduction to science and technology studies*. London: Blackwell (Chapter 10).

LATOUR, Bruno, and Steve Woolgar. 1979. *Laboratory Life: The Construction of Scientific Facts*. Princeton, New Jersey: Princeton University Press (Introduction and Chapter 1).

LATOUR, B. *Science in Action*. 1986. Cambridge MA: Harvard University Press. (Introduction: Opening Pandora's Black Box)

Week 5: **The nature of reality**

(Class 5, Feb-4) LATOUR, Bruno. 1999. ""Do you Believe in Reality" – News from the trenches of the Science Wars". Foreword of *Pandora's Hope*. Boston: Harvard University Press.

WYNNE, B. 1996. "Misunderstood Misunderstandings: Social Identities and the public uptake of science". In: *Misunderstanding science? The public reconstruction of science and technology*. Alan Irwin and Brian Wynne (eds.). Cambridge University Press, pp. 19-46.

Week 6: **When Objects Object**

(Class 6, Feb-11) SISMONDO, Sergio. 2004. *An introduction to science and technology studies*. London: Blackwell (Chapter 12).

LATOUR, Bruno. 2000. "When things strike back: a possible contribution of 'science studies' to the social sciences". In: *British journal of sociology* 51(1), pp. 107-123.

MOSSE, David. 2006. "Anti-social anthropology? Objectivity, objection, and the ethnography of public policy and professional communities". In: *Journal of the Royal Anthropological Institute* (NS) 12, pp. 935-956.

Week 7:

(No Class: Family Day & Study Week, Feb 16-20)

Week 8: **Biotechnologies and the influence of Biocapital**

(Class 7, Feb-25) RABINOW, Paul. *Making PCR: A Story of Biotechnology*. Chicago and London: University of Chicago Press (Introduction and Chapter 1).

RAJAN, K. 2006. *Biocapital: The Constitution of Postgenomic Life.* Durham and London: Duke Univ. Press (Introduction: Capitalism and Biotechnologies)

Week 9: **Kinship issues and reproductive technologies**

(Class 8, Mar-4) STRATHERN, Marilyn. 2005. *Kinship, Law and the Unexpected: Relatives are Always a Surprise*. New York: Cambridge University Press (Chapter 1: Relatives Are Always a Surprise: Biotechnology in an Age of Individualism).

MARKS, J. 2001. "'We are going to tell these people who they really are': Science and Relatedness". In: *Relative Values: Reconfiguring Kinship Studies*. Sarah Franklin and Susan McKinnon (eds.). Durham & London: Duke University Press, pp. 355-383.

Week 10: **Cyborgs: beneath and beyond the anatomical borders**

(Class 9, Mar-11) HARAWAY, Donna. 1991. "Cyborg Manifesto". In: *Simians, Cyborgs and Women: The Reinvention of Nature*. London: Routledge, pp. 147-181.

GUSTERSON, Hugh. 1996. *Nuclear Rites: A Weapons Laboratory at the End of Cold War* (Chapter 5: Bodies and Machines). Berkeley and Los Angeles: University of California Press.

Week 11: **Gender as an analytical category**

(Class 10, Mar-18) FISHER, Jill. 2011. *Gender and the Science of Difference: Cultural Politics of Contemporary Science and Medicine (Studies in Modern Science, Technology, and the Environment)* (Chapter 1: Gendering Science: Contextualizing Historical and Contemporary Pursuits of Difference). New Jersey: Rutgers University Press

HARAWAY, Donna. 1989. "Women's place in the jungle". In: *Primate visions: gender, race and nature in the world of modern science*. New York: Routledge, pp. 279-303.

Week 12: **The unborn and the undead**

(Class 11, Mar-25) RAPP, Rayna. 2000. *Testing Women, Testing the Fetus: The Social Impact of Amniocentesis in America* (Chapter 2: Accounting for Amniocentesis). New York: Routledge, 2000.

Haraway, Donna. 1997. *Modest Witness* (Chapter 6: Race: Universal Donors in a Vampire Culture). New York and London: Routledge.

Week 13: **Final Project Presentations**

(Class 12, Apr-1)

Recommended Readings:

KUHN, T. S. 1962. *The Structure of Scientific Revolutions*. Chicago: Univ. of Chicago Press.

POPPER, K. R. 1963. *Conjectures and Refutations*. London: Routledge.

BERGER, P. and LUCKMANN, T. 1966. *The Social Construction of Reality*. New York: Anchor Books.

MERTON, R. K. 1979. *The sociology of science: Theoretical and empirical investigations*. Chicago: University of Chicago Press.

BLOOR, D. 1991. *Knowledge and social imagery*. Chicago: University of Chicago Press.

FLECK, L .1979. *Genesis and Development of a Scientific Fact.* Chicago: University of Chicago Press.

WITTGENSTEIN, L. 1958. *Philosophical Investigations*. Oxford: Blackwell.

HANSON, N.R. 1961. *Patterns of Discovery*. Cambridge: Cambridge University Press.

LAKATOS, I.1970. *Criticism and the Growth of Knowledge.* Cambridge: Cambridge University Press.

DASTON, L. Objectivity. New York: MIT Press.

LEENHARDT, Maurice. 1947. *Do Kamo*. *Person and Myth in the Melanesian World.* Chicago and London: The University of Chicago Press.

CETINA, K. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, MA: Harvard University Press.

WYNNE, B. 1996. *The public reconstruction of science and technology*. Cambridge University.

HACKING, I. 1999. *The social construction of what?*. Cambridge, MA: Harvard Univ. Press.

LATOUR, B. 2004. *Politics of Nature: How to Bring Sciences into Democracy*. London and Cambridge, MA: Harvard University Press.

BOURDIEU, P. 2004. *Science of science and reflexivity*. Cambridge, UK: Polity Press.

RESNIK, D. 2004. *Owing the Genome: A Moral Analysis of DNA Patenting*. New York: State University of New York Press.

NADESAN, M. 2008. *Governamentality, Biopower and Everyday Life*. New York: Routledge.

RABINOW, P. 1996. *Essays on the anthropology of reason*. Princeton University Press.

FOUCAULT, M. 2008. *The Birth of Biopolitics: Lectures at the College de France, 1978-1979*. New York, NY: Palgrave Macmillan.

RABINOW, P. 1999. *French DNA: Trouble in Purgatory*. London and Chicago: University of Chicago Press.

EDWARDS, Jeannet et all. 1993. *Technologies of Procreation: Kinship in the age of Assisted Conception*. New York: Manchester University.

STRATHERN, M. 2005. *After Nature: English Kinship in the Late Twentieth Century*. New York: Cambridge University Press.

CARSTEN, J. 2004. *After Kinship*. (New Departures in Anthropology). Cambridge: Cambridge Univ. Press.

SHARP, L. 2006. *Strange Harvest: Organ Transplants, Denatured Bodies, and the Transformed Self.* Berkeley and Los Angeles: University of California Press.

FEATHERSTONE, M. & BURROWS, R. 1995. *Cyberspace, Cyberbodies, Cyberpunk*. London: Sage.

POTTER, E. 2001. *Gender and Boyle's Law of Gases*. Bloomington: Indiana University Press.

SPANIER, B. 1995. *Im/partial Science: Gender Ideology in Molecular Biology*. Bloomington: Indiana University Press.

BIAGIOLI, M (org). 1987. *The Science Studies Reader*. New York Routledge.

HARAWAY, D. 1989. *Primate visions: gender, race and nature in the world of modern science*. New York: Routledge.

WIJNGAARD, M. 1997. *Reinventing the sexes: The Biomedical Construction of Femininity and Masculinity* (Race, Gender and Science). Bloomington: Indiana University Press.

NADASDY, P. 2005. *Hunters and Bureaucrats: Power, Knowledge and Aboriginal-State Relations in the Southwest Yukon*. Washington: University of Washington Press.

HAYDEN, C. 2003. *When Nature Goes Public: The Making and Unmaking of Bioprospecting in Mexico.* Princeton: Princeton University Press.

HORST, H. & MILLER, D. 2006. *The Cell Phone: An Anthropology of Communication.* London: Berg Publishers.

LÉVY, P. 1997. *Collective Intelligence: Mankind's Emerging World in Cyberspace*. Cambridge, MA: Helix Books.

WINNER, L. 1986. *The Whale and the Reactor: A Search for Limits in an Age of High Technology*. Chicago: University of Chicago Press.

Desire2Learn

The course uses Desire2Learn for its course website. To access the course website, or any other Desire2Learn-based course website, go to the LU portal login page at https://lakeheadu.desire2learn.com/

and log in using your LU username and password. Once you have logged in to the portal, look for the **mycourselink** module, where you'll find the link to our course website along with the link to all other Desrise2Learn-based courses you are registered.

Accessibility Needs

Lakehead University is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Student Accessibility Services as soon as possible.