UNIVERSITY OF TEXAS AT AUSTIN PROGRAM

Science, Technology, and the Responsible Citizen

The University of Texas at Austin

June 24-August 4, 2007

Faculty: Lorenzo Alvisi, Department of Computer Sciences, and Irene Eibenstein-Alvisi, Department of French and Italian, both of The University of Texas at Austin

Factota: Matthew Schmitz, Princeton University, and Mychalena DeBehnke, Northern Illinois University

Week 1

M 6/25  • Introductions and presentation of the program.
  • “Global warming is not a crisis” from: Intelligence2 US, a venue for Oxford-style debates from an initiative of the Rosenkrantz foundation. The debates take place at the ASIA society in New York City and are distributed for download by National Public Radio.

T 6/26  • Genesis 1.1-3.24
  • The Epic of Gilgamesh
  • Science, truth and facts (Chalmers, What is this thing called Science?, Chapters 1,2)

W 6/27  • Hesiod, Theogony, lines 507-616
  • Hesiod, Works and Days, lines 47-106
  • The nature of experiments (Chalmers, What is this thing called Science?, Chapter 3)

Th 6/28  • Dante, Inferno XXVI
  • Alfred Tennyson, Ulysses
  • P. Levi, Survival in Auschwitz, (Chapter 11: The Canto of Ulysses)
  • The Inductive Method and its limitations (Chalmers, What is this thing called Science?, Chapter 4).

F 6/29  “We’ll build our house, and chop our wood, And make our garden grow.”
  • Video: Leonard Bernstein, Candide, (Great Performances, 2005).
Week 2

M 7/2
• Aeschylus, Prometheus Bound
• Introduction to Falsificationism (Chalmers, What is this thing called Science?, Chapter 5)

T 7/3
• Aeschylus, Prometheus Bound
• Intelligent Design and Evolution: can they be falsified? Individual research and in-class discussion

W 7/4
NO CLASS

Th 7/5
Science or Pseudoscience? The problem of demarcation
• Video: NOVA: Netwon’s Dark Secrets (2003)
• T. S. Kuhn, Logic of Discovery or Psychology of Research? (from I. Lakatos and A. Musgrave, eds., Criticism and the Growth of Knowledge, Cambridge 1970, pp. 4-10)

F 7/6
• Johann Wolfgang von Goethe: Faust, Part I
• Sophisticated Falsificationism and the Limits of Falsificationism (Chalmers, What is this thing called Science?, Chapters 6 & 7)

Week 3

M 7/9
• Johann Wolfgang von Goethe: Faust, Part I
• W.A. Mozart, Requiem in D minor, KV 626 “Dies Irae”
• Video: G. Verdi, Messa da Requiem, “Dies Irae “ (Karajan, Orchestra of La Scala)

T 7/10
• Video: Opera: Arrigo Boito, Mefistofele (excerpts) (San Francisco Opera, 1989)
• Video: Opera: Hector Berlioz, La Damnation de Faust (excerpts) (Salzburg Festival, 1999)
• Theories as Structures: Kuhn’s Paradigms (Chalmers, What is this thing called Science?, Chapter 8)
W 7/11  • Queen, Bohemian Rhapsody (excerpt)
   • Bertolt Brecht, Galileo (1947)
   Additional assigned material:
   • Video: Joseph Losey, Galileo (from Brecht’s 1947 play)

Th 7/12  • E. McMullin, Rationality and Paradigm Change in Science (from P. Horvich, ed., World Changes: Thomas Kuhn and the Nature of Science, MIT Press, 1993, pp. 55-78)
   • Theories as Structures: Lakatos’s Research Programs (Chalmers, What is this thing called Science?, Chapter 9)

F 7/13  • Video: Copenhagen by Howard Davies (from Michel’s Frayn’s 1998 play)

Week 4

   • Feyerabend’s Anarchistic Theory of Science (Chalmers, What is this thing called Science?, Chapter 10)
   • P.K. Feyerabend, How to Defend Society Against Science, Radical Philosophy n.11, Summer 1975.
   • Methodical Changes in Method (Chalmers, What is this thing called Science?, Chapter 11)
   Suggested reading:

T 7/17  • Mary Wollenstonecraft Shelley, Frankenstein, vol. I

W 7/18  • Mary Wollenstonecraft Shelley, Frankenstein, vol. II
   • Video: NOVA: Einstein’s Great Idea.

Th 7/19  • Mary Wollenstonecraft Shelley, Frankenstein, vol. III
   • The Bayesian Approach (Chalmers, What is this thing called Science?, Chapter 12).

**Week 5**

M 7/23  • The New Experimentalism (*Chalmers, What is this thing called Science?,* Chapter 13).
• Nanotechnology: Drexler and Smalley make the case for and against “molecular assemblers”, *Chemical and Engineering News*, CENEAR Volume 81, No. 48, pp. 37-42).

T 7/24  • Video: *Rashomon* by Akira Kurosawa (1950)
• James D. Watson: *The Double Helix*

W 7/25  • James D. Watson: *The Double Helix*.
• Interviews with Francis Crick and James D. Watson, BBC Archives (http://www.bbc.co.uk/bbcfour/audiointerviews/profilepages/crickwatson1.shtml)
• Video: *NOVA: Secret of Photo 51*

Th 7/26  • Student-led Forum:
  - Gender and Aptitude to Math and Science
  - Human-Animal Chimeras

F 7/27  • Student-led Forum:
  - The Future of Google
  - Genetically Modified Organisms

**Week 6**

M 7/30  • Sophocles, *Oedipus Rex*
T 7/31  
- Student-led Forum:  
  - E-books  
  - Climate intervention

W 8/1  
- Sophocles, *Oedipus Rex*  
- An impossibility result: The two generals problem  
- Reasoning about knowledge: The muddy children problem and Kripke Structures.

Th 8/2  
- Undecidability and the Halting Problem.  
- Why Should the World Obey Laws (Chalmers, *What is This Thing Called Science?*, Chapter 14).  
  Additional Material:  

F 8/3  
- Students’ performance: Sophocles, *Oedipus Rex*  
- “This I Believe”

**Books:**