History/Philosophy 260 Science and Society in the Modern World

Alan Richardson Spring 2011 MWF 9-10 am Hennings 202

This section of H/P 260 is organized around the following question: "What should the informed citizen know about science and technology?" We will look at some important answers to this question offered by scientists, science and technology policy experts, and science and technology studies (STS) researchers since the beginning of the twentieth century. We will investigate how such views guide us through the consideration of some topics of current interest in public debate about science and technology. These issues include controversies in climate science, the impact of communication technology on social life, epistemic and ethical issues in personal genomics, epigenetics, genetic testing, gene therapy, and genetic modification of organisms, and the development of new classification regimes and drug therapies for mental illness.

Contact Info

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Required readings

There are two books in the UBC Bookstore: Max Weber, *The Vocation Lectures*, Indianapolis: Hackett. James D. Watson, *The Double Helix: The Norton Critical Edition*, New York: Norton.

All other readings can be found on the course Vista page either as PDFs or as weblinks.

Work for the Course with Grade Distribution

The work for the course consists of four assignments:

At-home Essay due 19 January (20%) In-class Essay on 11 February (20%) Group Assignment, written part due 18 March, oral part delivered between 21 and 30 March (written part 20%; oral part 15%) Final Exam (25%)

Course and University Policies

Attendance is expected. The class goes much better if you are on time.

Computers and other electronic equipment are for class-related work only. *We are all adults—if you wish to watch YouTube videos of Justin Bieber, update your Facebook status to "ignoring my prof," send email or text messages, play Angry Birds, or do anything else not course-related, do it anywhere on Earth other than our classroom.* We *will* engage in rituals of humiliation for those who do not comply.

It is your job to understand and comply with the University's policies on academic misconduct. Here are some websites of relevance: UBC's Policies: <u>http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,0,0</u> A helpful website on avoiding plagiarism: <u>http://www.arts.ubc.ca/arts-students/plagiarism-avoided.html</u>

Lecture Schedule with Readings

1. Motivating the Topic Conceptually: 3 lectures

January 5

Motivating the Topic I: Evolutionary Psychology and Genomics Christine Keannelly, "What's So Special about Humans?" The New Scientist 198: 2657 (2008): 28-34.

Nathan Blow, "The Personal Side of Genomics," *Nature* 449 (2007): 627-630.

January 7

Motivating the Topic 2: The Book of Steve Jobs, or, When Smart Phones Happen to Dumb People

Chris Anderson and Michael Wolff, "The Death of the Web," *Wired*, September 2010. Posted on-line 17 August 2010

Virginia Heffernan, "The Death of the Open Web," *The New York Times Magazine*, 21 May 2010

January 10 *Motivating the Topic III: Climate Science* Al Gore, *The Assault on Reason*, Chapter 7 (2008)

Rex Murphy, "Climate Change: Science or Politics," *CBC News: The National*, 3 December 2009

Margaret Wente, "Can Environmentalism Be Saved from Itself," *The Globe and Mail*, 27 November 2010

The Independent Climate Change Email Review Panel Report, Executive Summary

2. Motivating the Topic Historically: 3 lectures

January 12, 14, 17

The Double Helix: Why should we know this about science?

Full text of the *The Double Helix* and the reviews by Morrison, FXS, Lewontin, Ellman, Bronowski, Merton, Medawar, and Lwoff.

Essay Due: 19 January

3. Classic Answers: 3 lectures

January 19

Classic Conceptions I: High Enlightenment Alexander Pope, "An Essay on Man," selections (1734) Marquis de Condorcet, selections (1795) William Godwin, *Enquiries Concerning Human Justice*, selections (1793)

January 21

Classic Conceptions II: Biological and Medical Lessons circa 1900 Karl Pearson, *The Grammar of Science*, Chapter One (1892) S. Weir Mitchell, *Doctor and Patient*, selections (1904) Charlotte Perkins Gilman, "The Yellow Wallpaper" (1899)

January 24

Classic Conceptions III: Progress Unbounded or Out of Control? Thomas Alva Edison, "How to Succeed as an Inventor," in Lyman Abbott (ed.), *How to Succeed in Public Life*, New York: Putnam, 95-104 (1882) Henry Adams, *The Education of Henry Adams*, Chapters 30, 31 and 34.

(1918)

4. The Modernist Moment, 1918-1939: 7 lectures

January 26

Philosophical Modernism before World War One

John Dewey, "The Influence of Darwin on Philosophy" (1909) Bertrand Russell, "The Place of Science in Liberal Education" (1913)

January 28 and 31

Weber and the Value-Free Ideal I and II

Weber, "Science as Vocation" and selections from "Politics as Vocation" (1918, 1919)

February 2

1918 and beyond: Progress or Nihilism?

Brief selections from the writing of Karl Mannheim, Wilhelm Reich, Oswald Spengler, Karl Jaspers, Stefan Zweig, Ludwig Mies van der Rohe, Theodor Adorno, Bertholt Brecht, Martin Heidegger in *The Weimar Republic Reader* (publication dates 1918-1929)

The Vienna Circle, The Scientific World-Conception, 1929

February 4

Confronting Technology in the 1930s

Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction" (1936)

Lewis Mumford, "The Assimilation of the Machine," Chapter Seven of *Technics and Civilization* (1934)

February 7

Science and Democracy circa 1938-1942

Robert K. Merton, "Science and the Social Order" (1938) and "The Normative Structure of Science" (1942)

J.D. Bernal, *The Social Function of Science*, selections (1939)

February 9 Review, Summary, Organization

February 11 In-Class Essay

5. World War Two and the Cold War: Science, Technology, and Ideology 4 lectures

February 21

What the American Citizen Should Know about Science circa 1950 (1 lecture) James Bryant Conant, *Science and Common Sense*, Chapter One (1951) February 23

The Bomb, the Death Camps, and the Moral Responsibilities of Scientists (1 lecture)

The Day after Trinity Jacob Bronowski, "Knowledge or Certainty" (1973)

February 25 and 28

Science and Western Culture in the Shadow of the Iron Curtain and Sputnik (2 lectures)

Michael Polanyi, *The Logic of Liberty*, Chapters One and Four (1951) Karl Popper, "Science: Conjectures and Refutations" (1953)

C.P. Snow, *The Two Cultures and the Scientific Revolution*, Chapters One and Two (1959)

T.S. Kuhn, "The Essential tension: Innovation and Tradition in Scientific Research" (1959)

Dwight David Eisenhower, "Farewell Radio and Television Address to the American People" (1961)

6. 1968 and 1989 and Beyond: Post-Modernism and Post-Ideology 8 lectures

March 2 and 4

Rethinking Knowledge and Power

Herbert Marcuse, *One-Dimensional Man*, Chapter 6 (1964) Michel Foucault, *The History of Sexuality, Part One*, Chapter 3 (1976), "The Political Technology of Individuals" (1981)

March 7

Socratic Iconoclasm: Freeing Society and Freeing Nature from Science Paul K. Feyerabend, "Science in a Free Society" (1978) Bruno Latour, *Politics of Nature: How to Bring the Sciences into*

Democracy, introduction and summary (2004)

March 9 and 11

Science and Technology as Forms of Expertise

Harry Collins and Trevor Pinch, *The Golem*, Chapter Five and Conclusion (1993)

Sheila Jasanoff, "Technologies of Humility: Citizen Participation in Governing Science," *Minerva* 41: 223-244 (2003)

March 14, 16, 18

Bodies and Words in Biological and Medical Science

Emily Martin, "Toward an Anthropology of Immunology: The Body as Nation State," Medical Anthropology Quarterly 4: 210-226 (1990)

Evelyn Fox Keller, "The Body of a New Machine: Situating Organisms between Telegraphs and Computers," Chapter Three of *Refiguring Life: Metaphors of Twentieth-Century Biology* (1993)

Ian Hacking, "Kind-making: The Case of Child Abuse," Chapter Five of *The Social Construction of What?* (1999)

7. Putting the Readings to Work: Group Project Reports

March 21, 23, 25, 28, 30

What should the Canadian citizen in 2011 know about science and technology?

8. Where Have We Gotten To?

April 1 and 4

What is the right question to ask about science and technology in 2011? (2 lectures)

Steven Shapin, "Lowering the Tone in History of Science: A Noble Calling" and "Science and the Modern World" from *Never Pure: Historical Studies of Science as if It Was Produced by People with Bodies, Situated in Time, Space, Culture, and Society, and Struggling for Credibility and Authority* (2010)

April 6 Summary and Coda