

THE RISE OF MODERN TECHNOLOGY:  
INDUSTRIALIZATION, CULTURE, AND IDEOLOGY

MALS 622

Fall 2018

TUESDAY 6-9 pm

Arsht Hall

OFFICE HOURS 4-6 pm

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"Modernity" is the outcome of revolutionary technological change - from the steam engine to the computer. How did this arise? What have been the effects? The past two centuries were littered with broken bodies and spirits as technology transformed war and reshaped society. A great divergence arose between the industrialized West and the rest. We have experienced rapid advances in living standards and life spans, increasing separation from the natural world, and release from grinding physical labor. Capitalism shaped the industrial revolution, while at the same time siring mass democracy, fascism, communism, imperialism, nationalism, globalism, environmental catastrophe, and the means to extinguish human life on the planet. Art, literature, and history give us tools to analyze the paradoxes of technological "progress".

GOALS OF THE COURSE

1. What created the "modern" world?
2. What is "modernity"?
3. How does "modern" technology interact with society and culture?
4. Why did the West develop differently than the rest of the world?
5. Understand the paradox of "progress".

6. Consider the role of art (film, literature, painting, music) in understanding human responses to technological change.
7. Learn more effectively to analyze complex problems and systems and make analytical arguments.
8. Learn more effectively to write analytically with clarity and persuasiveness.

#### HOW WE WILL PROCEED

After some scene-setting by me, we will examine the history of the modern world through the lens of technology. This will be accomplished by focused discussions in class based on readings. The essence of a graduate seminar is the exchange of ideas based on the knowledge and experience of the participants. Everybody needs to contribute!

Some of the questions we will discuss include:

How do historians understand technology?

What is innovation?

Does technology control us?

Is technology predictable?

Does technology weaken cultural differences or strengthen them?

Are material abundance and ecological balance compatible or mutually exclusive?

Does modern technology destroy more jobs than it creates?

Does technology make war more or less likely?

Does technology encourage or undermine democracy and equality?

Is Artificial Intelligence a threat or an opportunity?

What is progress?

#### READINGS

Under each week's heading you will find a list of books and film titles. For the first week only one book is assigned, and that is the only one I will order through the bookstore. For all subsequent classes members of the seminar may select from a variety of options. I recommend that you acquire the other books by borrowing from a library or buying from Amazon or similar online booksellers where used copies are available cheaply (almost all are paperbacks). Films are available through Netflix and the

University Library as well as local libraries and online booksellers. (I can also loan my copies - first come, first serve). I will briefly discuss these books and films during our first meeting.

### EVALUATION

60% of the grade in this course is based on class participation (amount and quality).

40% is based on a paper (quality of the analysis, organization of the argument, clarity of the writing).

### THE PAPER

This is not a traditional research paper (though finding supporting evidence for your ideas is important). The crucial thing is to engage with the fundamental questions raised by the course, deploy analytical arguments, and express your ideas and judgments with clarity, precision, and persuasiveness. I will be available to help at every step in the process. I want to discuss with you possible topics, read draft introductions, preliminary outlines, drafts of the paper, bibliographies, and anything else you want me to do.

### THE SYLLABUS

#### AUGUST 28 - INTRODUCTION AND OVERVIEW

A brief survey of the history of technology up to the 17<sup>th</sup> century.

A review of various ideas about how to analyze the interaction of technology, science, and society such as "determinism", biological and geographical factors, culture, the "hummingbird" effect, etc.

Reading:

Arnold Pacey, *Technology in World Civilization*, MIT Press, Cambridge, MA, 1991.

SEPT. 4 - THE ACCUMULATION OF KNOWLEDGE AND IDEAS:  
LITERACY, THE SCIENTIFIC REVOLUTION, AND THE ENLIGHTENMENT

Modern technology did not arise out of nowhere. The context of industrialization was the gradual development of weapons and tools over many centuries and the understanding of how to operate and improve existing systems and machines by exploiting previous knowledge and applying rational thought.

Readings: Select one

Sven Beckert, *Empire of Cotton: a Global History*, Vintage, NY, 2015

Robert C. Allen, *The British Industrial Revolution in Global Perspective*, Cambridge University Press, Cambridge, 2009.

William Ashworth, *The Industrial Revolution: The State, Knowledge and Global Trade*, Bloomsbury, NY, 2017.

SEPT. 11 - INDUSTRIALIZATION - THE PREREQUISITES

Between the 17<sup>th</sup> and the 19<sup>th</sup> centuries technology was radically transformed, first in Britain and then in Western Europe and North America. Society moved from an organic to an energy-based world. What were the prerequisites for change?

Readings: Continue Allen or Beckert or Ashworth.

SEPT. 18 - THE INDUSTRIAL REVOLUTION

Many historians now question this term. Why? What triggered the process of shifting from water, wind, human, and horsepower to machines driven by coal and petroleum? Was

this market driven, the result of particular inventions, the needs or warfare, or some other factor?

Readings: Continue Allen or Beckert or Ashworth.

SEPT. 25 - COST-BENEFIT ANALYSIS - THE IMPACT ON HUMAN BEINGS

The impact of technological change on human beings during the period of industrialization was radical and far-reaching. As innovation flourished and factories sprouted up previously unimaginable and unreachable abundance became possible. At the same time, the lives of workers got worse: low pay, long hours, dangerous conditions, poor housing, child exploitation, pollution, etc. Why was the result of better machines and cheaper goods greater suffering? What can literature tell us about these problems?

Readings: Select one.

Joshua Freeman, *Behemoth: A History of the Factory and the Making of the Modern World*, W. W. Norton, NY, 2018.

Novels -

Elizabeth Gaskell, *Mary Barton*, Penguin, NY, 1997 (1848).

Émile Zola, *Germinal*, Penguin, NY 2004 (1885)

OCT. 2 - THE GREAT DIVERGENCE - THE WEST AND THE REST

As the West accelerated technologically, the rest of the world began to fall behind in productivity and economic growth. Why did previously dominant manufacturing giants such as China and India fail to keep up and indeed become so weak they succumbed to European control?

Readings: Select one.

Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy*, Princeton University Press, Princeton, 2000.

Prasannan Parthasarathi, *Why Europe Grew Rich and Asia Did Not: Global Economic Divergence, 1600-1850*, Cambridge University Press, Cambridge, 2011.

Peer Vries, *State, Economy and the Great Divergence: Great Britain and China, 1660s - 1850s*, Bloomsbury, NY, 2015.

#### OCT. 9 - IDEOLOGIES

The industrialization of Europe and North America spawned a range of ideologies that we live with today as the governing principles of societies around the world: mass democracy, communism, fascism, imperialism, nationalism, etc. What was the connection between the rapid advance of technology and new systems of organization? Can literature and art help defend us against exploitation and autocracy? How have religious thought and faith responded to modern technology?

Readings: Continue Pomeranz, Parthasarathi, or Vries.

#### OCT. 16 - "MODERN TIMES" AND "METROPOLIS"

Two great films of the first half of the twentieth century addressed the impact of technology on people and society and tried to predict the future. Can the future be predicted? How good are we at seeing the present? What can art tell us about society?

Books/Films: select one

Mary Shelley, *Frankenstein: or the Modern Prometheus*, (1818) many editions (book)

George Orwell, *1984*, (1949) many editions, versions (book or film)

Aldous Huxley, *Brave New World*, (1932) many editions (book)

Yevgeny Zamyatin, *We*, many editions (1921) (book)

Alexander Mackendrick, dir., "The Man in the White Suit" (1951) (film)

Stanley Kubrick, dir., "2001: A Space Odyssey" (2001)  
(film)

OCT. 23 - TECHNOLOGY AND MODERN WAR

Mankind's ability to slaughter its young people reached an unprecedented level in the First World War. Mass murder of civilian populations by the means of gas chambers and explosives dropped from the air wiped out tens of millions of human beings in the Second World War. Nuclear winter can now extinguish life on the planet. What have we wrought?

Books/Films:

David Egerton, *The Shock of the Old: Technology and Global History since 1900*, Oxford University Press, 2007. (book)

Steven Spielberg, dir., "Saving Private Ryan" (1998) (film)

Elem Klimov, dir., "Come and See" (1985) (film)

Bernhard Wicki, dir., "The Bridge" (1959) (film)

Stanley Kubrick, dir., "Dr. Strangelove" (1964) (film)

OCT. 30 - THE LONELY CROWD

The rise of vast urban areas, high-rise tower blocks, computers and many other "modern" developments have led to isolation and fragmentation in society. Efforts to tighten fraying relationships have produced frightening nationalist civil wars, ferocious fanaticism and deep wells of loneliness and alienation. With easily available weapons designed for mass killing every person with a grievance or a cause can be a terrorist. What are we to do?

Readings: Select one.

James Vernon, *Distant Strangers: How Britain Became Modern*, University of California Press, Berkeley, 2014.

Anthony Giddens, *The Consequences of Modernity*, Stanford University Press, Stanford, 1990.

David Riesman and Nathan Glazer, *The Lonely Crowd: A Study of the Changing American Character*, Yale University Press, New Haven, 1963.

Robert Bellah, *Habits of the Heart*, University of California Press, Berkeley, 1985.

#### NOV. 6 - WHAT IS MODERNITY - INNOVATION?

What is modernity? How is "modern" society different from previous societies? Is it systems or is it technology? Is it constant innovation? Is it creative or destructive?

Readings:

Continue with James Vernon, Anthony Giddens or Riesman.

You may add -

Mark Dodgson and David Gann, *Innovation, A Very Short Introduction*, Oxford University Press, NY, 2010.

#### NOV. 13 - WILL THE NEXT CENTURY BE MODERN?

Will we have another radical transformation of society soon? Will artificial intelligence (AI) alter everything? Will we end life on the planet through environmental destruction or war?

Readings: Select one.

Jacques Ellul, *The Technological Society*, Vintage, NY, 1964.

Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies*, Oxford University Press, NY, 2014.

David Nye, *Technology Matters: Questions to Live With*, MIT Press, Cambridge, MA 2007.

#### NOV. 27 - ORAL PRESENTATIONS



Each member of the seminar will make a short presentation about the key conclusions of their papers followed by discussion.

DEC. 4 - CONCLUSIONS/ GO OVER PAPERS

Can we reach any overall conclusions about technology and the modern world? I will meet with individual students to go over their papers with them.