I. Technology

A. Greek: *techne* and *logos*

1. *techne* is the set of principles or rational method involved in the production of an object or achieving a goal, example: craft or art

2. *logos* is a type of rationality

B. Technology and the Enlightenment

1. technology is progressive force

2. technologies and techniques (technical means of production) are means to a better society

C. Instrumental theory of technology

1. technology is an instrument or tool

a. means (“how to”) to solve problems and meet needs

b. hammer, plow, radio, car, cell phone, plane, Fordism

standardized test, smart classroom, 3D television

c. technology is neutral with regard to ends

2. technology is universally applicable

a. solves the same problem and meets the same needs in every culture.

b. technology transfer: hammers pound nails in any culture

3. technology is progress

a. driven by imagination and creativity, no real limits

b. technologies of transportation are the story of progress: walking, ox cart, horses, Model Ts, Prius

c. communication is the story of progress: talking, signals, cables, radio, computers, satellites

d. technology is synonymous with advanced society

5. technological progress will culminate in utopian society

a. abundance, comfort, leisure, solve all social problems

b. health technologies: drugs, diagnostic techniques, surgical tools and techniques, genetic therapy

c. communications technologies: satellites, computers, cell phones,

internet

d. entertainment

e. technologies of production: mass production meeting consumer needs

f. food production technologies: GMOs, pesticides, fertilizers

6. “limits to technology as progress”

a. non-technical values: education

b. religious and ethical: reproductive technologies

II. Critical Theory of Technology (Neo-Marxism)

A. Technology emerged within the context of a specific social formation and power relationships and is determined by those social formations.

1. industrial capitalism/western imperialism

a. profit

b. efficiency and calculability

c. control over workers

d. colonialism/neocolonialism

e. entertainment

2. bureaucracy

a. efficiency and calculability

b. hierarchy and specialization

3. mass society

a. social control

b. manufacture of consent

4. war

5. world view

a. domination of nature

b. nature is object to be transformed for human use

B. technology reflects values and norms of social formation and the relations of power and inequality.

1. technology is “progress” when the measure or criteria reflect the norms and power arrangements of the social formation (profit, efficiency, calculability and social control).

2. technological development is determined by large institutions

a. corporations, government, military

b. specific interests and goals

c. creativity limited by institutional goals and interests

d. auto industry: planned obsolescence and dynamic obsolescence

3. dominant institutions have the power to:

a. define problem that needs to be solved, or to define (and create the need) and therefore

b. determine solution (a technical one)

4. Examples

a. health care (including pharmaceutical, life sciences)

i. define the problem: individuals and disease

ii. solution: technical control of disease

b. global agribusiness and life science industries

i. problem: limited production of food

ii. solution: techniques and technologies of production

c. energy industries

i. problem: consumptions needs and energy production

ii. solutions: subsidies to nuclear power, clean coal

d. military-industrial complex

i. problem: psycho terrorists who hate America

ii. solution: drone planes

e. service and manufacturers

i. problem: mass production, costs

ii. solution: fordism, automation, offshoring

f. computers and cell phones and dynamic obsolescence

5. Unintended consequences

a. health care: disease resistant strains

b. pesticides: resistant pests, non-resistant predators

c. nuclear power: nuclear waste

d. terrorists: technologies of surveillance

e. gmos and the environment

f. factory farming: disease

6. Society’s Goals

a. democratize technological development

i. meet social needs as defined by people

ii. environment (precautionary principle and product responsibility principle)

b. redefine the problem/ solution

i. problem: health/ solution: public health/prevention

ii. problem: food distribution/ solution: food as right, redistribution

iii. problem: environment/solution: conservation/renewable energy

vi. problem: global inequality, neo-colonialism/solutions: change in global policies and institutions

1. Warning:
   1. unintended consequences may not necessarily be solved by

further technological development

b. There may not be technological solutions to social problems.