

ESC203
Engineering and Society

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1 Lectures

1.1 Lecture: 05 September 2019

1.1.1 Modernism

Consisted of the following:

- Secularism
- Observable Science
- Colonialism
- Consumerism
- Capitalism
- Industrialization

Some of the important figures of this era included:

- Descartes
- Newton
- Leibniz
- Laplace

1.1.2 Human Social Development

From Ian Morris, *Why the West Rules ... for now*

1. Energy Capture: Per person calories obtained from the environment for food, home, etc.
2. Organization: Size of the largest city
3. War Making Capacity: Number of troops, power, and speed of weapons
4. Information Technology: Sophistication of available tools for sharing and processing data

1.1.3 Assumptions of Modernism

1. Inevitable Progress
2. Valuing the Quantifiable and the Marketable
3. Perfectibility of the Human Project

1.1.4 Dark Side of Modernism

- Devaluing the Non-Quantifiable
 - Love - the affective domain
 - Community - social bonds and relationships
- Denial of Negative Consequences
 - Environment - degradation, life cycle, etc.
 - Economics - dismiss the free market losers

1.2 Lecture: 11 September 2019

1.3 Lecture: 12 September 2019

1.4 Lecture: 18 September 2019

1.5 Lecture: 19 September 2019

1.6 Lecture: 19 September 2019

1.7 Lecture: 19 September 2019

1.8 Lecture: 02 October 2019

1.8.1 Values in Virtue Ethics

- Emotions are integral and important part of moral perception
- Motivation of the agent is crucial
- No rigid rules; choices can be adapted to the situation and the people involved
- Flexibility encourages the pursuit of creative solutions to tragic dilemmas
- Tragic dilemmas can rarely be resolved to the complete satisfaction of all parties; any solution is likely to leave some remainder of pain

2 Readings

2.1 5 Things to Know About Technological Change

2.2 Do Artifacts Have Politics

2.3 Technological Momentum

- Technological momentum offers an alternative to technological determinism and social construction
- **Technological Determinism:** Belief that technical forces determine social and cultural changes
- **Social Construction:** Social and cultural forces determine technical change
- **Technological Momentum:** Social development shapes and is shaped by technology.
- "Technology" refers to technological or sociotechnical systems.
- Hughes not a technological determinist or social constructivist.
- Technological momentum avoids the extremism of both other concepts
- A technological system at times is a cause, at others an effect
- Momentum is time dependant, and therefore not symmetrical over time
- Some characteristics include acquired skill and knowledge, special-purpose machines and processes, enormous physical structures, and organizational bureaucracy
- Provides the durability and the propensity for growth that were associated more commonly in the past with the spread of bureaucracy
- Technological momentum can be located between the poles of social constructivism and technological determinism, providing a flexible mode of interpretation in accord with the history of large systems.

2.4 Scientific Revolutions