

Lecture 1

Technology: "The sum of all human making and devising and its application to society"

Society: "The totality of people who share territory, are organized through patterns, and make up a complex whole of shared meanings and technology"

Society is characterized by:

- ① How people are organized
- ② How people interact
- ③ What people know and believe

1 | Neutrality of Technology [Balabanian]

Premises that underly society:

- ① Self-seeking
- ② Elastic wants
- ③ Dominating nature
- ④ Neutrality of technology
- ⑤ Freedom of choice

2 | True Grand Challenge: Self-knowledge [Mitcham]

Main Argument:

"We are entering a new axial age and the true challenge for engineers is self-reflection and exposure to the arts and humanities"

Domains society interfaces with:

- ① Individual
- ② Cultural
- ③ Social

Factors that relate to human thought / action / behaviour:

- ① Self
- ② Biological
- ③ Psychological
- ④ Behavioural
- ⑤ Situational

Functions of society:

- ① Provides the needs for satisfaction
- ② Helps individuals learn who they are
- ③ Helps individuals learn who others are and the characteristics of society

Neutrality of Technology:

(False Premise) → "Tech is morally and politically neutral. Man is to blame for harm"

Freedom of choice:

(False premise) → "Individuals in the free market have total autonomy over purchases"

Lecture 2

Social technical divide:

"Technical realm recognized as legitimate source whereas Social Sciences are not"

Lecture 3

Why Context matters:

- ① How we make sense of the world
- ② How we act in the world

Schema:

"Represents a way to simplify thought process"

Dual-Process Theory:

"Human decision making relies on Deliberative and automatic mechanisms"

Freedom of choice:

"Illusion → technology mediates action"

Psychological Mechanisms:

- ① Schema
- ② Dual-Process theory

Totality of factors (Complexity):

- ① Unintended users
- ② Intended uses
- ③ Technology breeds technology

3 Technology choice and the good life [Dotson]

Technological Liberalism:

"Fallacy → technology extends human choice and benefit at no cost"

Technology Vs focal things:

Tech → Smartphone, TV

Focal → Fire (hearth), Community Square

Lecture 4/5

Dimensions of society:

- ① Economic
- ② Values
- ③ Cultural
- ④ Technological
- ⑤ Social
- ⑥ Political

Culture:

"The complex whole of shared understandings and meanings by members of society"

Key features of culture:

- ① Patterns
- ② Repetition
- ③ Cumulative Effect
- ④ Subcultures
- ⑤ Webs of meaning

Beliefs:

"Assumptions about how things will be"

Values:

"How things ought to be"

Cultural norms:

- ① Folkways
- ② Mores
- ③ Taboos
- ④ Laws

4 Social Responsibility of engineers [McFarland]

Obligation to come to aid:

- ① Proximity
- ② Ability to help
- ③ Lack of other help
- ④ Critical need

Technical Paternalism:

"Technical problems require technical solutions"

Lecture 6

Technological determinism:

"Technologies are neutral objects and culture plays no role"

Social Shaping:

"Too much focus on the user, overlooks structural factors"

Material vs non-material:

"Material is what you can see (physical objects), Non material refers to social processes, symbols and frameworks"

Manifest vs Latent function:

Manifest → intended, expected beneficial uses

Latent → Unconscious, unintended and harmful

Framing technology as neutral:

"Car example, not that simple there are latent unseen consequences"

6 Normative challenges of soft impacts [Swiersta]

Soft vs hard impacts:

"Hard impacts are tangible impacts that can be rectified. Soft impacts are more subtle but nonetheless important"

Norms and Values:

"Exist in practices (know-how) and are influenced by technology"

Lecture 7/8

Sustainability:

"Meets the needs of the present without compromising the needs of the future"

Needs theory:

"Meeting human needs is required for optimal development and functioning"

Socio - Cultural Environments:

- ① Supportive
- ② Need thwarting
- ③ Low support/depriving

Human needs and dependency:

- ① Family
- ② Social groups and peers
- ③ Societal institutions

Need Satisfaction:

- ① Physical / survival
- ② Social
- ③ Psychological

Vulnerability:

"Technology makes us vulnerable"

7 Centrality of human needs [Gough]

Needs vs Wants:

"Wants may be impulsive pleasures whereas needs are essential"

Universal needs theory:

"Basic needs are timeless and passed down by each generation"

8 Empathy machines: Forgetting the body [Turkle]

Empathy machines:

"Unworthy machines that haven't lived a human life and yet we interact with them as if they could share our experience"

Assault on empathy:

"The silent spring meaning people are glued to their phones and are not engaging in meaningful dialogue"

Frictionless life:

"Technology has made it too easy to avoid hardship"

Lecture 9

Social stratification:

"How individuals are ranked and ordered in society"

Agents of social change:

- ① Technology
- ② Social institutions
- ③ Population
- ④ Environment

Types of Societies:

- ① Hunter/Gatherer
- ② Pastoral
- ③ Agricultural
- ④ Feudal
- ⑤ Industrial

Digital divide:

- ① Unequal access
- ② Unequal skills
- ③ Unequal outcomes

Sources of data collection:

- ① Blogs
- ② Social media
- ③ Sensors
- ④ Transactional data

Problems of big data:

- ① Decisions are made for us
- ② Biased algorithms
- ③ Discriminatory algorithms
- ④ Secretive and unaccountable
- ⑤ Our identities are for sale

9 Designing a good life: Matrix for technological mediation [Waelbers/Swiersta]

Matrix Axis:

x → Is, Can, Ought

y → Stakeholders, Consequences, good life

Matrix Categories:

- | | |
|--------------------------|--------------------|
| ① Presence | ⑥ Responsibilities |
| ② Empowerment | ⑦ Contingency |
| ③ Rights | ⑧ Freedom |
| ④ Anticipatory knowledge | ⑨ Flourishing |
| ⑤ Practical affordances | |

Lecture 10

Technology Creep:

"Over time, technology morphs into something that was never intended at the time of its inception"

Lecture 11

What Engineers can do:

- ① Due diligence
- ② Design practices
- ③ Join conversation

Definitions

Autonomy:

"Freedom from external control or influence"

Context:

"The circumstances that form the setting where an idea can be fully understood"

Dimension:

"A part or feature or way of considering something"

Embodiment:

"To have/show particular qualities or ideas"

Heuristic:

"Enabling a person to learn something for themselves"

Mediate:

"Occupy a middle position"

Ontology:

"Set of concepts in a subject area"

Agency:

"The capacity to act or exert power"

Direct:

"Aim something in a particular direction"

Domain:

"An area of interest or control"

Hermeneutics:

"A method or theory of interpretation"

Ideological:

"Based or relating to a system of ideas"

Neutral:

"No strong characteristics or features"

Praxis:

"Accepted practice or custom"

Dialectic:

"The existence or action of opposing social forces"

Disembodiment:

"Seeming to not have a body"

Embed:

"Make something an integral part of"

Heterogeneity:

"Quality or state of being diverse in character or content"

Interaction:

"Mutual/reciprocal action or influence"

Nuance:

"A small difference in feeling"

Privilege:

"A special right granted to a particular group"

Organize:

"Arrange something according to a system"

Reify:

"Give definite form to a concept or idea"

Unencumbered:

"Not having burden or impediment"

Organization:

"Form a coherent functioning whole"

Structure:

"Construct or arrange according to a plan"

Untenable:

"Not able to be defended"

Produce:

"Cause to happen"

Tacit:

"Understood without being stated"

Volition:

"The power of choosing or determining will"