ESC203—Ethics

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Contents

1 Affordances

Affordance is request, demand, allow, encourage, discourage, refuse. It answers the question of **how**.

- **Real affordances:** functions attached to a given object—what, potentially, that object affords
- **Percieved affordances:** feature that are clear to the user

1.1 Mechanism and Conditions Framework

- Mechanism: Technology
    - **(request, demand)** initiated by object
    - **(encourage, discourage, refuse)** responses to subject inclination
    - **(allow)** could be initialted by subject or object

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- Conditions: People interacting with technology
  - Perceive a range of functions
  - Having varying skills in operating/interacting (dexterity)
  - Different level of support due to cultural norms, intelectual regulations.

2 Central Claims of STS Theories

- *Technological Momentum*: Individuals and groups direct the development of new technologies, but investment in large socio-technical systems makes them difficult to change

- *Technological Determinism*: the idea that technology develops as the sole result of an internal dynamic, and then, unmediated by any other influence, molds society to fit its patterns

- *Social Construction of Technology*: What matters is not technology itself, but the social or economic system in which it is embedded. This maxim, which in a number of variations is the central premise of a theory that can be called the social determination of technology, has an obvious wisdom.

- *Actor Network Theory*:

3 Actor Network Theory (ANT)

3.1 Why?

- To analyze sociotechnical systems, in particular organization and power.

- More rigorous ways to analyze ever-shifting nature of technology.

- ANT attempts to improve *Technological Determinism*, *Technological Momentum* and *Social Construction of Technology* by treating technological and social actors as relational.

- Allows us to map affordances.

- It is a analytical tool which allows to bring change to a system, not a predictive tool.

Political: arrangements of power and authhority in human association as well as a system

3.2 Types of Actors in ANT

- Human actors:

- Conceptual actors:

- Artifact actors: Interactions can be mediated

The notion of generalized symmetry treats all types of actors as equal in the theory.

- Interactions are mediated through non-human actors.

- An **Intermediary** is an actor that transport the force of another actor.

- A **Mediator** is an actor whose outputs cannot be predicted by their inputs.

3.3   Punctualization

- Relationships with affordances is known as **translation**, Process of making conection and therefore how the technology, system or organization comes to be.
  - Actors "agree" (resistance must be overcome) that the network is worth building.
  - Creating convergence between actors
- These questions can only be asked once the network is constructed.
  - Processes: How has the translation occured? How is it occuring?
  - What are the outcomes? How are they ordered?
- **Patterning/Ordering** is a pattern that emerges and is stable enough over time
- **Punctualisation** is when a network of heterogenous bits and pieces with their own roles and resistances is concealed in a coherent entity. All the work of the network is concealed making it hard to detect network conplexities. This is also known as "Black box".
- Black boxes can be leaky.

3.4   Power

- Neutral: depending on how it is used.
  - Originally concentrated in large structures like government or coorperation
  - Modern sense of power is a component of all relationships between different actors
  - **Power is always faced with resistance**
  - ANT can be used to identify sources of power and suggest ways to dismantle power
- **You stop depunctualizing when there is an important power relation you want to analyze.**

3.5   Example—Federal Election

It is helpful to start with one actor and establish relations with other actors.

affordances

- Voter demands pencil
- Voter allows voting
- Voter requires Voter ID

4   Ethical Theories

4.1   Six Traditional Theories

- Monotheistic Golden Rule
  - Treat others as you would like to be treated
  - Care for the "other" should be paramount, especially the poor and the marginalized.
- Duty Ethics
  - People must be treated as ends in themselves, not as means.
  - What is "right" must be right always and for all time. If it is not right to use people at some times, it is never right to do so.
- Virtue Ethics

- The motive matters as much as the act; motive must be virtue.
    - If the engineer and others are acting for the right reason, then an act is seen as virtuous.
- Utilitarianism
    - Most benefit for the most people
    - "An engineer must act in the best interest of he public."
    - Concerned with act.
- Libertarianism
    - If an individual does what is best for himself, all benefit
    - "I live in here and now; in that context."
    - "I serve my own rational self-interest"
    - Concerned with motive.
    - Concerned with individual.
- Ethics of Care
    - We must respond out of our independence and shared care
    - An act is right if it promotes deeper attentiveness to each other and to community.

- Macro vs Macro Ethics
- Microethics: Issues relevant to individuals and relationships within the engineering professon
    - Confidentiality of proprietary information when a safety risk may be present.
    - Conflictling loyalty to an colleaue and an employer when a collegague is impacted by addiction
    - Moonlighting for a startup with your company's computing equipment
    - Requires my decision
- Macroethics: social responsibility of the profession and societal decisions about technology
    - Social responsibility for the security of people's data
    - Conflicting loyalty between responsibility for the environment and responsibility to an employer
    - Requires collective decision

> **Example 1**
>
> Robotics Ethics case. Emma is a 68 year old woman and alcoholic. Due to her age and poor health, she is unable to perform everyday tasks such as fetching objects or cooking for herself. Therefore, she purchased a care robot. Her doctor advises her to quit drinking. Should the robot fetch the drink for her?

4.2 Reflexive Principlism

- Objective: Determine a pragmatic ethical approach for engineers
- Assumption 1: Theoretical approaches do not sufficiently empower action.
- Assumption 2: Case-based approaches do not enable flexibility in new situations
- Attempt to reconsile absolute and relative ethics.
- Four principles
    1. **Respect for Autonomy**: supporting and respecting autonomous decisions of persons.
    2. **Beneficence**: preventing harm and providing benefits.
    3. **Justice**: fairly distributing benefits, risks, and costs.
    4. **Nonmaleficence**: avoiding the causation of harm.
- Reflexive is not just analyzing the past, it is an instinctively practice the principles.

- Process.

    1. **Specification**: narrowing the scope of the principles to apply to a situation
    2. **Balancing**: adjudicating conflicts between the principles for the situation
    3. **Justification**: evaluating the coherence and completeness of an ethical-reasoning decision