

**POLITECNICO**  
MILANO 1863

**MAI4CAREU**

Master programmes in Artificial  
Intelligence 4 Careers in Europe

# Do Artifacts Have Politics?

**Viola Schiaffonati**

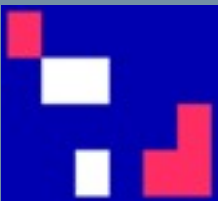
*Artificial Intelligence and Robotics Lab*

*Dipartimento di Elettronica, Informazione e Bioingegneria*



Co-financed by the European Union  
Connecting Europe Facility

This Master is run under the context of Action  
No 2020-EU-IA-0087, co-financed by the EU CEF Telecom  
under GA nr. INEA/CEF/ICT/A2020/2267423

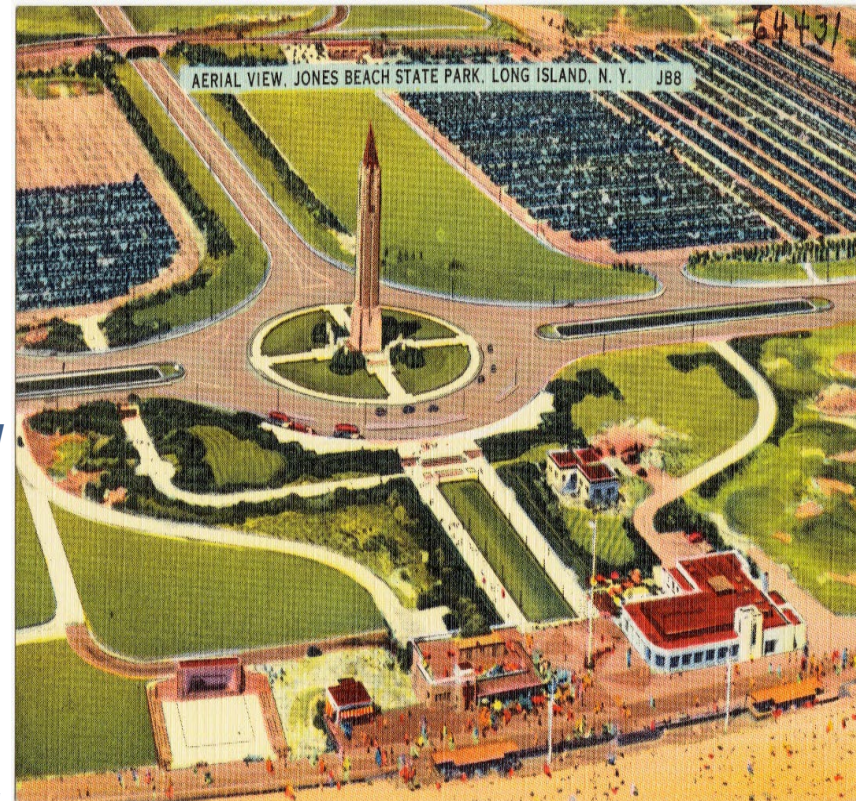


# Robert Moses's overpasses



# Racists overpasses

- *Robert Moses (1888-1981) was a very influential and contested **urban planner***
- *He designed several **overpasses** over the parkways of Long Island which **were too low to accommodate buses***
- *Only cars could pass below them and for that reason the overpasses complicated access to Jones Beach Island*
- ***Only people who could afford a car** – and in Moses' days there were generally not Afro-Americans – could easily **access the beaches***



# “Do artifacts have politics?”

*“Robert Moses, the master builder of roads, parks, bridges, and other public works from the 1920s to the 1970s in New York, had these overpasses built to specifications that would **discourage** the **presence of buses** on his **parkways**. According to evidence provided by Robert A. Caro in his biography of Moses, the reasons reflect **Moses's social-class bias** and **racial prejudice**. Automobile owning whites of "upper" and "comfortable middle" classes, as he called them, would be free to use the parkways for recreation and commuting. **Poor people** and **blacks**, who normally used public transit, **were kept off the roads** because the **twelve-foot tall buses** could **not** get through the **overpasses**. One consequence was to **limit access** of **racial minorities** and **low-income groups** to Jones Beach, Moses's widely acclaimed public park.”*

(Winner 1980)

# Agenda

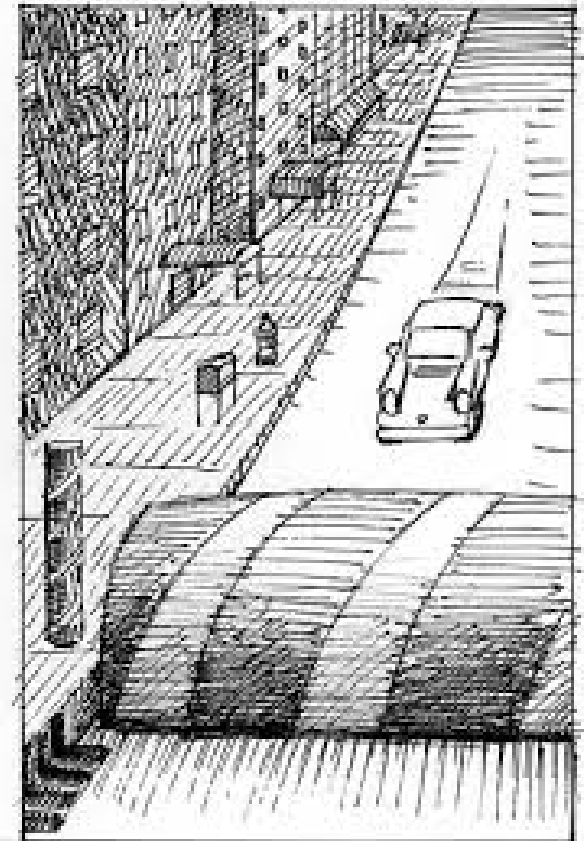
- Technological artifacts as morally and politically charged
  - **Technological mediation**
  - The **moralization** of **technologies**
- From passive to **active responsibility**
- AI technologies
  - **Experimental** technologies
  - The **invisibility factor**
- **Criticizing** the moral character
- **Ethics** of **engineering design**

# Beyond racist overpasses

- Technological artifacts can be **politically** or **morally charged**
- We should not consider **morality** as a solely human affair but also as a **matter of things**

# Ethics as a matter of things

- **Artefacts** are bearers of **morality**, as they are constantly taking all kinds of moral decisions for people (Latour 1992)
  - Ex.: moral decision of how fast one drives is often delegated to a speed bump which tells the driver *“slow down before reaching me”*



# Technological mediation



- The phenomenon that when technologies fulfill their functions, they also help to **shape actions** and **perceptions** of **their users**
- Technologies are **not neutral “intermediaries”** that simply connect users with their environment
- They are **impactful mediators** that help to shape how people use technologies, how they experience the world and what they do



# Mediation of perception: obstetric ultrasound

- Ultrasound is not simply a **functional means** to make visible an unborn child in the womb, but **mediates** the relations between the fetus and the parents



# Obstetric ultrasound and translations

- Number of **translations** of the relations between expecting parents and the fetus while mediating their visual contact
  - Ultrasound isolates the fetus from the female body: **new ontological status of the fetus** as a separate living being
  - Ultrasound places the fetus in a context of medical norms: it translates **pregnancy into a medical process**, the fetus into a possible patient, and congenital defects into preventable sufferings (**pregnancy as a process of choices**)
- **Ambivalent role** of ultrasound: it may both encourage abortion (prevent suffering) and discourage it (emotional bonds)

# Moralizing technologies

- Instead of moralizing other people humans should/could also **moralize their material environment**
  - Metro barriers: “Buy a ticket before you enter the subway”
- Moralization of technology is the **deliberate development of technologies** in order **to shape moral action** and decision-making



# A paradigm shift

- **From passive responsibility ...**
- **Responsibility** is connected to being held **accountable** for your **actions** and for the **effects** of your actions
  - Making of choices, taking decisions, failing to act, ...
- **Passive** responsibility is a **backward-looking** responsibility which is relevant **after** something **undesirable occurred**



# ... to active responsibility



- **Active responsibility** means **preventing** the **negative effects** of technology but also **realizing** certain **positive effects** (Bovens 1998)
- **Value sensitive design:** **moral considerations** and values are used as **requirements for the design** of technologies (Friedman 1996, van der Hoven 2007)

# Active responsibility and AI

*"I will call technologies **experimental** if there is only **limited operational experience** with them, so that social benefits and risks cannot, or at least not straightforwardly, be assessed on basis of experience."*

(van de Poel 2016)

- **Uncertainty** that is inherent in the **introduction** of these new technologies (sophisticated **AI** systems) into **society**



# AI and the invisibility factor



«There is an important fact about computers. Most of the time and under most conditions **computer operations** are **invisible**. One may be quite knowledgeable about the inputs and outputs of a computer and only dimly aware of the **internal processing**. This invisibility factor often generates **policy vacuums** about how to use computer technology.”

(Moor 1985)

# Types of invisibility

- Invisibility of **abuse**

*"Invisible abuse is the intentional use of **invisible operations** of a computer to engage in **unethical conduct**. A classic example is the case of a programmer who realized he could steal excess interest from a bank."*

- Invisibility of **programming values**

*"Consider for example computerized airline reservations. Many different programs could be written to produce a reservation service. American Airlines once promoted such a service called SABRE. This **program** had a **bias** for American Airline flights built in so that sometimes an American Airline flight was **suggested by the computer** even if it **was not the best flight** available."*

- Invisibility of **complex calculations**

*"Computers today are capable of **enormous calculations beyond human comprehension**. Even if a program is understood, it does not follow that the calculations based on that program are understood."*



# Moralizing technologies (Verbeeck 2011)

- Many of our **actions** and **interpretations** of the world (also moral ones!) are **co-shaped by the technologies**
- **Moral decision-making** is a **joint effort** of **human beings** and **technological artefacts**



<https://www.youtube.com/watch?v=S8a1DascnZg>

# Taking mediations into ethics

- **Alcohol lock for car**  
(car lock that analyzes your breath)
- **Smart showerhead**  
(showerhead that regulates and reduces the flux of water to save water)



# Alcohol lock for cars



- **Alcohol lock for car** (car lock that analyzes your breath): “*Don’t drive drunk*”
- Suppose that a car with such a system is not more expensive than the one without it and works perfectly

*How many of you would buy such a car? Why?*

*How many of you would not buy such a car? Why?*

# Taking mediations into ethics



- **Smart showerhead**  
(showerhead that regulates and reduces the flux of water to save water): *"Don't waste water"*
- Suppose that this showerhead is not expensive and allows you to save 50% of your daily consumption of water

*How many of you would buy it?  
Why?*

*How many of you would not  
buy it? Why?*

# Criticizing the moral character

- Variety of **negative reactions** to explicitly **behavior-steering technologies** (also when they are for the good!)



- Fear that **human freedom** is threatened and that democracy is exchanged for **technocracy**
  - **Reduction of autonomy** perceived as a threat to **dignity**
  - Not humans but **technologies** are in **control**
- Risk of **immorality** or **amorality**
  - Form of **moral laziness** with behavior-steering technologies

# A democratic way to moralize technology?

- **Technologies** differ from **laws** in **limiting human freedom** because they are not the result of a democratic process
  - See the difference between the alcohol lock for car and the smart showerhead
- It is important to find a **democratic way** to “**moralize technology**”
  - The processes used to insert values must be transparent and **publicly discussed**



# Designing mediations

- Designers cannot simply “inscribe” a desired form of morality into an artefact
- In order to build in specific forms of mediation in technologies, designers need **to anticipate the future mediating role** of the **technologies** they are designing
  - **Unintentional** and **unexpected forms of mediation** (ex.: energy-saving light bulbs used in places previously left unlit and hence increasing energy consumption)



# Not only desired forms

- Designers cannot simply “inscribe” a desired form of morality into an artefact, because this also depends on
  - **Users** that interpret technologies
  - **Technologies** themselves which can evoke **emergent** forms of mediation



# Strategies for designing mediations

- **Anticipating mediation by imagination**
  - Trying to imagine the ways technology-in-design could be used to deliberately shape user operations and interpretations
- Augmenting the existing design methodology of **Constructive Technology Assessment (CTA)**
  - **CTA** is an approach in which TA-like efforts are carried out **parallel to the process of technological development** and are **fed back** to the development and design process
  - Not only to determine what a technology will look like, but all **relevant social actors**

# Ethics of engineering design

- **Technology design** appears to entail **more than inventing functional products**
- The perspective of technological mediation reveals that **designing** should be regarded as a **form of materializing morality**
- The **ethics of engineering design** should take more seriously the **moral charge of technological products**, and rethink the **moral responsibilities of designers** accordingly

# References

- Latour, B. (1992). "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts" in Wiebe E. Bijker and John Law, eds., *Shaping Technology/Building Society: Studies in Sociotechnical Change*, Cambridge, Mass.: MIT Press, 1992, pp. 225–258
- Van de Poel, I. and Royakkers, L. (2011). *Ethics, Technology, and Engineering*, Wiley-Blackwell
- Verbeek, P. P. (2011). *Moralizing Technologies*, University of Chicago Press.
- Winner, L. (1980). "Do artifacts have politics?", *Daedalus*, 109, 121-136