

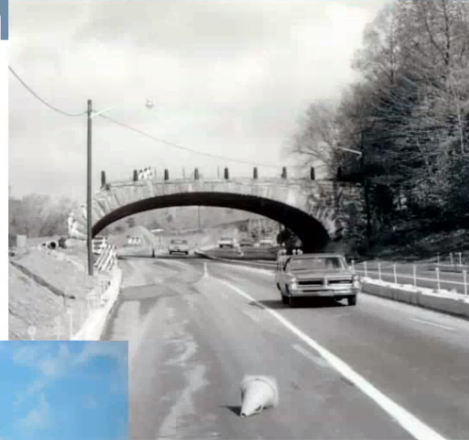
Lesson 3_Do Artifacts Have Politics?

Computer Ethics and Ethics of Computer Science : Do Artifacts Have Politics?



Artifact = physical object created by the human, doesn't exist in nature as itself

Robert Moses's overpasses



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Can you notice some common features among the 3 pictures?

Find similarities or common features among the 3 pictures.

Focus on the **bridges**: the overpasses are not very high. The structure of the bridges is similar, arc shape. These bridges are similar in the structure, but **these bridges are very low**.

Only cars can pass under the bridges. This is important because these bridges were designed by a famous urban planner: Robert Moses.

He **designed these overpasses with the intention to admit only cars to pass under them**. He wanted that only people that could have the possibility to have a car to pass below them. In those ages people that could afford a car were just white people and not afro american.

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***



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He designed these overpasses with the intention to admit only cars to pass under them.

This is the first example of the paper mentioned in the first slide (Do artifacts have politics?)

In the paper the author mentions this examples and other referring to this theme.

“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)

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What we discuss today: **Artifacts can be politically and morally charged**. In this paper by Winner there are several examples in which this design is done by intention or less intentionally, but still politically charged.

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**

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The example of bridges is a great example of how artifacts can be politically charged.

Moralization of technology is not the idea that technology can have a moral reasoning, but is the idea to design the technologies having in mind some values and trying to embed these values in the technology.

We will focus on the design of technology and later on AI technologies which are experimental technologies.

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**

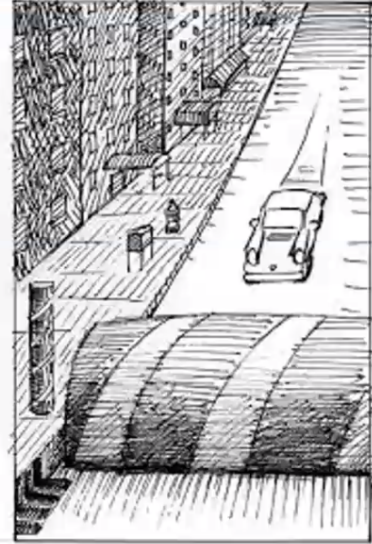
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Morality is not only a human affair but is a matter of things.

We are going to consider how morality is an interplay between humans and artifacts and the way in which artifacts are designed play an important role.

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*"



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Latour proposed this example.

Speed bumps are very simple artifacts full of morality because the morality of the personal speed of one can be delegated to a speed bump. **Speed bump** incorporates the advise "slow down before reaching me".

In these artifacts you can drive faster than a value but you can meet some difficulties with your car if you are driving too fast.

Technological mediation

- The phenomenon that when technologies fulfill their functions, they also help to **shape actions** and **perceptions** of **their users**

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

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The cases of glasses is a case in which we can immediately recognize mediation of the perception because without glasses some people cannot see something, but in general this mediation is both on the level of perception and the level of action.

Technologies are not just neutral intermediaries between us and our environment, but they are something more.

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



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Another example to underline how artifacts play a role both in the level of mediation and in the level of perception.

Obstetrical ultrasound do technological mediation that impacts the relationship between the parents and the foetus.

If we do not have an obstetric ultrasound we cannot observe any unborn child, but there is more related to **technological mediation**.

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)

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With the use of the obstetric ultrasound, pregnancy becomes more a process of choices, rather than a medical process.

It affects the **perception** and the **actions**.

If we connect this technology to our moral tradition we can understand that the role of the ultrasound is **ambivalent**.

Obstetric ultrasound is an example of technological mediation and is an example of **how its use can impact both at the level of perception and at the level of actions**.

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



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Moralization of technology = (first point of the slide)

In most of the cases the moralization of environment is not against the moralization of people, they can go together.

Metro barriers are another example of moralization of technology.

Use speed bumps: moralize material environment which is around us.

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**



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Passive responsibility: reconstruct back to understand the causes of an undesirable event and so on.

Why is important to discuss the paradigm shift in technology: when something undesirable occurs in IT it's sometimes very difficult to completely stop a technology and adopt a backward looking approach in the evaluation of the responsibility.

This is the reason why in Computer Science and IT we talk about '**active responsibility**'.

... 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)

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Active responsibility: responsibility is taken into account from the very beginning of the design of an artifact. Artifacts has to be designed **not only to prevent negative effects** but also to try **to realize some positive effects**. In this approach moral consideration are already used in the design of technologies.

Let's focus on the idea of **active responsibility** and idea of realize also some positive effect (not only prevent eventually negative effects).

There are many criticalities in the design of an artifact and we need to take care of this.

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)

AI is what can be called as an **experimental technology**.

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**



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We have to recognize that here **high degree of uncertainty is related not only to the technologies themselves, but this uncertainty has to do also with the way in which technologies interact in the society in which they are inserted. (in complex environments such that environments in which there are humans and in which all possible outcomes of the use of a technology are not easily predictable).**

Relationship between technology and humans is not always very easy to predict.

When we talk about **experimental technology** we have to talk about **uncertainty**.

But there is something more which is the **invisibility factor**.

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.”

(Moore 1985)

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This paper was written in a period in which technologies were very different from what they are today.

We can distinguish 3 types of invisibility factors.

The following definitions are done according to Moore.

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."*

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Most of the operations of the computers especially in the case of AI are invisibles.

Let's redefine the moralization of technology having in mind the invisibility factor and the active responsibility principle.

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>

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Ofc we live in a very technological world, even our lesson today is co-shaped by technologies!

We want to go in the direction to stress how human being and technological artifacts present critical issues.

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)



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Lets' see 2 examples of 2 technologies.

These technologies already exists.

Experiment: We do not have to focus on the types of these technologies implementation. We have to imagine the **conceptual framework** of these technologies.

Alcohol lock for cars



- **Alcohol lock for car** (car lock that analyzes your breath): *"Don't drive drunk"*

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Alcohol lock for cars is clearly an example of moralizing technologies.

We know that accidents caused by people drunk are very common, there are a lot of victims, and still many people drive even when they have drunken too much.

Moralization of technology here is that we can have this lock and it's very easy. Let's suppose the best scenario in which this technology works well, let's suppose that we do not have privacy problems with data collected by the system and suppose that a car with this system is not more expensive than another without the system. Would you buy this car?

- Most of us wouldn't.

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?*

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This is **moralization of technology** because it's a device that tells us: don't waste water, but is **smart** in the sense that we can avoid wasting water just by designing a showerhead that after 2 minutes stops the water.

We do not feel any difference in the shower experiment.

Difference between the 2 artifacts? The lock for cars and the showerhead?

1) **Lock for cars:** avoid a near damage

2) **Showerhead:** avoid long-term collateral damage

The showerhead is an aid in something I might not be able to do well enough by myself, while the car removes the threat of a drunk driver but can create potential problems

Important point: limits imposed by the car

Focus on the differences: who does decide in the first case the limitation and who does decide in the second case? Which is the organ/group of people that decide this limitation in the first case and in the second case? What's the difference?

- In the first case there is already a law that exists, why in the second case there is no norm? This is an important difference
- The first case is the implementation of a law, while in the second case there is no a law and the way in the technology is designed is a choice of a company or of a group of people

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

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These negative reactions are mostly related to the fears that human have. We have the fear in put together **human autonomy** and **dignity**. This is something that there is in how western society related to the idea that when we lack autonomy, then there is consequence of our notion of dignity.

Also this is connected to the fact that not humans are in control, but technologies are in control.

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**



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We live in a society governed by laws and laws in general limit the freedom of humans. These laws limit us but are something that we accept since they are the way in which we can live together.

But **how technologies differ from laws in limiting human freedom?**

- laws are the result of a democratic process
- technologies in most cases are not the result of a democratic process. Technologies are in most cases the result of a decision taken by a small group of people that decide some values. These values are decided by a quite 'small' group of people and these values are inserted in the technologies without transparency (**invisibility factor**).

There are many problems when we discuss the moralization of technologies and many of these problems are still open.

We should make these choices under moralizing technologies more **clear** and **transparent**.

The way in which technologies limit our freedom is very different from the way in which laws limit our freedom.

- with the laws we can always decide to not obey to the laws and free to take the responsibility to be free
- this is not the case with technologies

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)



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The example of bulbs is an example of the fact that to design mediation you need to anticipate the behaviour of the technology and this is particularly difficult in AI which are experime

ntal applications wrt to these possibilities.

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

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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**

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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