

The background of the slide is a dark blue gradient. It features a large, stylized camera aperture in the center-right, with multiple overlapping circular and polygonal shapes in shades of blue, purple, and white. To the left of the aperture, there are faint, concentric circular lines that resemble a lens or a tunnel.

IS1103 IS Innovations in Organisations and Society

[revamped]

Lecture 4 – Surveillance and Pervasive Technology I

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Topics

- Let's start with the “less exciting” but much needed ethical theories
- Surveillance – BIG brother
- Consensual surveillance
- Non-consensual surveillance

Net neutrality

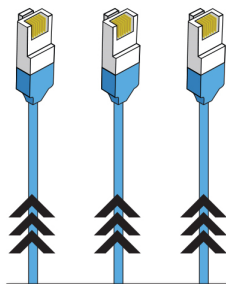
Net neutrality principle:

- All traffic on the internet should be treated equally, regardless of whether you're checking Facebook, posting pictures to Instagram or streaming movies from Netflix or Amazon.
- ISPs cannot block or slow down traffic and they cannot so-called fast lanes to companies willing to pay extra to reach consumers more quickly than competitors.
- Under the Obama administration, the Federal Communications Commission (FCC) adopted rules in 2015 to protect the principle
- FCC voted on Dec. 14, 2017 to repeal the 2015 net neutrality regulations. In June 2018, the rules officially came off the books.
- Singapore does not ban bandwidth throttling (i.e., ISPs have the option of slowing access to some websites, without rendering them unusable).

Net neutrality

The FCC is currently considering new rules on Internet service providers that will determine whether they can charge content providers for faster Internet speeds.

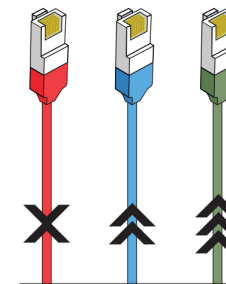
Net neutrality



All legal content on the internet is accessible and no content is provided at faster or slower speeds than the rest.

Source: White House, FCC
Graphic: Staff, Tribune News Service

Tiered Internet



Some content is faster or slower—a process called “throttling”—or blocked based on fees paid by content providers to Internet service providers.

This site has been blocked by your ISP.

Well, not yet. But without net neutrality, cable companies could censor websites, favoring their own business partners. We can stop them and keep the Internet open, fast, and awesome if we all contact the U.S. Congress and the FCC, but we only have a few days left. [Learn more.](#)

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Ethical theories

How Can We Evaluate? Ethical theories

Consequence-based ethical theories

- **Utilitarian theory** – an individual act (X) or a social policy (Y) is morally permissible if the consequences that result from (X) or (Y) produce the greatest amount of good for the greatest number of persons affected by the act or policy
- Utilitarian stresses “social utility” (e.g., happiness) or social usefulness of an action or policy.
- Act utilitarian – an act, X, is morally permissible if the consequences produced by doing X result in the greatest good for the greatest number of persons affected by Act X.
- Rule utilitarian – an act, X, is morally permissible if the consequences of following the general rule, Y, of which act X is an instance, would bring about the greatest good for the greatest number.
- Critics of utilitarianism that morality can be grounded in consequences or happiness (a notoriously difficult and ambiguous concept), thus making utilitarian approaches often difficult to apply

How Can We Evaluate? Ethical theories

Duty-based ethical theories

- Main argument: morality must ultimately be grounded in the concept of duty or obligations that humans have to one another and never in the consequences of human actions --- deontological theories
- Act deontology – when 2 or more moral duties clash, reflect on the competing prima facies (self-evident, such as honesty, benevolence, justice) duties; weigh evidence at hand to determine which course of action would be required to a particular circumstance
- Act deontology – act based on maxim or principle (or rule) that (1) ensures all individuals will be treated as ends-in-themselves and never merely as a means to an end, and (2) can be universally binding without exceptions for all human beings
- Critics of deontology – appealing to rational intuitionism can be controversial

Consequence-, duty-based ethical theories

Utilitarianism

- emphasize the importance of consequences
- ethical cost-benefit analysis: will (potential) benefits of a given act/rule outweigh possible harms (=costs)?

Act – stress the primacy of individual actions over general rules

Act utilitarianism

Rule utilitarianism

Act deontology

Rule deontology

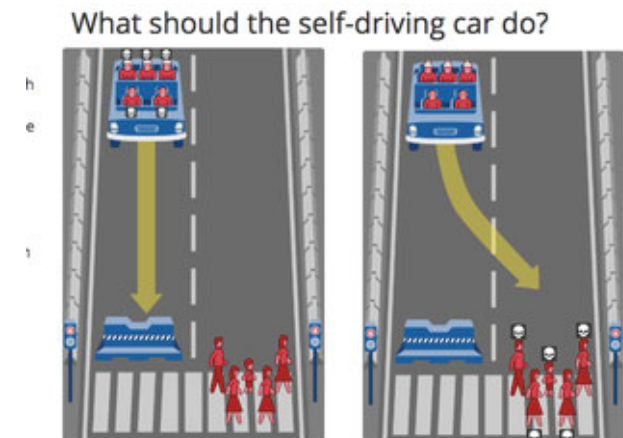
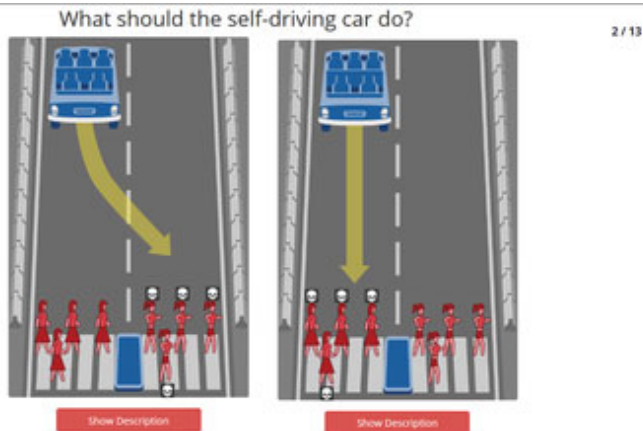
Rule – stress the primacy of rules

Deontology

- emphasize the importance of duty or obligation
- emphasizes basic rights of autonomous individuals (including life, liberty, pursuit of property ... privacy, etc.) as to be protected (more or less) no matter what benefits might otherwise accrue

Self-drive car (an example)

- Consider you are programming a self-drive car...
- Trolley problem – (autonomous) driver of a trolley, forced to decide between staying on his track and killing five people, or switching tracks and killing only one
- 3 elements that people seem to approve of the most: (1) sparing the lives of humans over the lives of animals; (2) sparing the lives of many people rather than a few; and (3) sparing the lives of young people rather than old --- utilitarianism perspective



Source: <https://www.popularmechanics.com/technology/infrastructure/a24222017/trolley-problem-self-driving-cars/>

Self-drive car (an example) --- continue

- “Do you remember that day when you lost your mind? You aimed your car at five random people down the road. By the time you realized what you were doing, it was too late to brake. Thankfully, your autonomous car saved their lives by grabbing the wheel from you and swerving to the right. Too bad for the one unlucky person standing on that path, struck and killed by your car. **Did your robot car make the right decision?**”

Self-drive car (an example) --- continue

- Consider a variant of trolley problem --- rear-end dilemma:

“You are driving down a heavily populated city. You approach an intersection with a red light, so you being to stop. There is a pair of children crossing the intersection safely when you spot that there is a speeding driver on course for a rear-end collision. Your autonomous car observes that it can make a legal and safe right turn maneuver to avoid the collision. However, allowing (your) car to go through will mean the children crossing the road will be hit and likely killed. **Should the self-driving car be able to make the right turn because it is legal and safe maneuver? Or should it be held responsible for saving the lives of the children and take the hit (thus endanger the passengers in the car)?**”

Self-drive car (an example) --- continue

- **Utilitarianism perspective** – take the Collision head on; make a selfless act and save the lives of the group of pedestrians. BUT cars are often designed not to injure or kill the owner of the self-drive car & if there is no pedestrians in front, the car would make the move → unreliable car algorithm.
- **Deontological perspective** – (1) minimize the harm to the driver and passengers of the self-driving car; (2) minimize the harm to any human outside of the self-driving car, as long as it does not conflict with rule (1); (3) do not destroy the property of others, as long as it does not conflict with rules (1&2); and (4) follow all the rules of the road that apply to your current location, as long as it does not conflict with rules (1, 2 & 3)

More ethical theories...

Contract-based theories

- Individuals follow a formal legal code of actions by surrendering some of our “absolute” freedoms (do anything we like) to a sovereign; in return we receive benefits including a system of rules and laws designed and enforced to protect individuals from being harmed by other members.
- Critic: we are obligated to behave morally only where an explicit or formal contract exists

More ethical theories...

Rights-based contract theories

- independent of whether individuals happen to have any legal rights, all humans have certain moral rights or natural rights
- 2 kinds of legal rights
 1. Negative rights
 - one has the right not to be interfered with in carrying out the privileges associated with that right.
 - Example, your right to vote, your right to purchase a computer. **BUT**, you can't expect others to transport you to voting center or provide you with a computer if you cannot afford one.
 2. Positive rights
 - Rare and controversial
 - Example, one's rights to receive education, access to adequate healthcare. **BUT**, that does not provide you the rights to abuse these rights.

More ethical theories...

Character-based (virtue) ethical theories

- Focus on criteria having to do with the character development of individuals and their acquisition of good character traits from the kind of traits they develop
- Virtue ethicist points out: if one had developed the right kind of moral character (through the acquisition of the “correct” moral habits), he/she would not be in a position that required deliberation (e.g., whether to take a product without paying for it)
- Likely to flourish in cultures where the emphasis placed on community life is stronger than that accorded to the role of individuals themselves
- Critic: neither helps resolve conflicts that can arise among the competing virtues nor encourage examination of consequences

Summary of ethical theories

Type of theory	Advantages	Disadvantages
Consequence-based	Stresses promotion of happiness and utility for majority	Ignores concerns of justices for the minority population
Duty-based	Stresses the role of duty and respect for persons	Underestimates the importance of happiness and social utility
Contract-based	Stresses a motivation for morality and enables us to articulate which explicit moral obligations we have and do not have, both as an individual and as a society	Offers only a minimal morality
Character-based	Stresses character development and moral education (i.e., acquisition of good habits on the part of individuals)	Depends on homogeneous community standard for morality

An integrated perspective to ethical theories

Moor's just-consequentialist framework

1. **Deliberate** over various policies from an impartial point of view to determine whether they meet the criteria for being ethical policies. A policy is ethical, if it:
 - **Does not cause any unnecessary harms** to individuals and groups **and**
 - **Support individual rights**, the fulfilling of duties, etc.
2. Select the best policy from the set of just policies arrived at in the deliberation stage by **ranking ethical policies in terms of benefits and (justifiable) harms**. In doing this, be sure to:
 - **Weigh carefully between the good consequences and bad consequences** in the ethical policies and
 - **Distinguish between disagreements about facts and disagreements about principles and values**, when deciding which particular ethical policy should be adopted

Surveillance

Surveillance - The Truman Show



Surveillance

- Any collection and processing of personal data, whether identifiable or not, for the purposes of influencing or managing those whose data have been garnered --- David Lyon
- Where we find purposeful, routine, systematic and focused attention paid to personal details, for the sake of control, entitlement, management, influence or protection, we are looking at surveillance --- 2006 report for the UK Information Commissioner's Office (ICO) by the Surveillance Studies Network

Source: The ethics of surveillance, Kevin Macnish

surveillance (watching over)



Coveillance (peer-to-peer surveillance)



sousveillance (watching from underneath)

Surveillance

- Surveillance includes dataveillance, which is monitoring a person's data to gain information as he/she goes about their daily business/routine
- surveillance assemblage: not one hierarchical surveillance system overseen by Big Brother, but rather a loosely connected network of independent surveillance apparatuses
- Why are we so concerned over surveillance?
 1. surveillance will likely lead to a change in people's behaviour, according to what those being monitored believe the surveillant will find acceptable
 2. Social sorting through surveillance: use of surveillance to discriminate between groups of people, whether by the colour of their skin, their economic potential, or other means



Pervasive computing

- computing environment where information and communication technology are “everywhere, for everyone, at all times”
- Also known as ubiquitous computing

Surveillance – legal in UK

- UK government surveillance, as governed by the Official Secrets Act (1911), is allowed for secret existence in the wake of fears of a German invasion of the British Isles
- 1985 Interception of Communications Act (IOCA) made the interception of public communications by post or telephone illegal, while at the same time creating provisions for the state to carry out the same under certain circumstances (usually when covered by a warrant in cases of domestic surveillance and for purposes of defence)
- IOCA was followed by the new Official Secrets Act (1989) and the Security Service Act (1989), and then by the Intelligence Services Act (1994), which clarified the roles of GCHQ and the Secret Intelligence Service (also known as MI6)
- Human Rights Act was signed in 1998, meaning that the UK recognized the legal jurisdiction of the European Convention on Human Rights (1953). The Human Rights Act came into effect in 2000, with the result that the provisions set out in IOCA were no longer sufficient to meet the new law. IOCA was therefore replaced by the 2000 Regulation of Investigatory Powers Act (RIPA). RIPA stated that the interception of communications by public bodies in the UK needed to be necessary and proportionate to the ends sought

Surveillance – legal in UK

- IOCA and RIPA had allowed for the government to collect phone records of individuals from British communications providers. Communications providers are required to store customer records for up to 12 months
- Investigatory Powers Act (IPA) in 2017 allows for the intelligence services to engage in hacking, aggressively gaining access to the computers of people suspected of working against the interests of the UK
- General Data Protection Regulation (GDPR), which was agreed in 2016 and will come into effect in 2018. The most public aspect of the GDPR has been the adoption of the principle of the right to be forgotten, which allows an EU citizen to have data about them removed from the internet under certain circumstances and when weighed against competing considerations, such as freedom of expression and public health interests
- How about US? Fourth Amendment of the US Constitution asserts the “right of the people to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures, shall not be violated, and no Warrants shall issue, but upon probable cause, supported by Oath or affirmation, and particularly describing the place to be searched, and the persons or things to be seized.”
- Development of legal acts on surveillance is progressing towards the theory of privacy – “the right to be let alone”

Wrongs of surveillance

- **Perspective 1:** surveillance as “neither good nor bad, but context and comportment make it so” vs. “the ethics of surveillance are inherently ambiguous, but at the same time ... never neutral”
- **Perspective 2:** surveillance as control (e.g., big brother) vs. surveillance as care (e.g., hospital, childcare center): Consent.
- **Perspective 3:** “we are entitled to privacy” vs. “if an act is carried out in public, then there is no reasonable expectation of privacy, that is, surveillance of public acts cannot violate a person’s privacy”. That is, no one should be allowed to permanently renounce certain rights, including their right to privacy.
- **Perspective 4:** surveillance is carried out with the knowledge, but without the consent, of the person being monitored

Wrongs of surveillance

- **Perspective 5:** mistrust - certain groups are trusted less than others, and so greater levels of surveillance are imposed on them accordingly
- **Perspective 6:** Chilling effect – people choose not to engage in legitimate activities for fear of being monitored
- **Perspective 7:** social sorting - surveillance is used to discriminate groups within society
- **Perspective 8:** error and false positives- incorrectly identify people as wrongdoers
- **Perspective 9:** “harmless” surveillance - surveillance over a person with no possibility of any consequence on the person monitored

Consensual surveillance

Consensual surveillance ... so we are fine?

- particular act of surveillance has the consent of the monitored party
- seeking of consent between two parties demonstrates mutual respect, reinforces autonomy and generally assures fairness



While smart home technologies can offer feelings of comfort and security for some users, there may also be security risks associated with an always-on microphone.

Smart home systems are part of a larger suite of devices, apps, websites and spaces that collect, aggregate and analyze personal data about users. **Scholars call this “ubiquitous surveillance,” which means “it becomes increasingly difficult to escape ... data collection, storage, and sorting.”**

Smart devices require data – yours and others’ – to serve you well. To get the full benefits of smart home systems, users must share their locations, routines, tastes in music, shopping history and so forth. On one hand, a well-connected device can manage your digital life quite well.

On the other hand, providing so much personal information benefits companies like Amazon. **As they gain access to users’ personal information, they may monetize it in the form of targeted advertisements or collect and sell your personal characteristics, even if it’s separated from your name or address. Perhaps that’s why Wired magazine says, “Amazon’s Next Big Business Is Selling You.”** Not all companies have the same privacy policies. Apple says it won’t sell its users’ personal information to others. Still, potential users should decide how much of their intimate lives they’re willing to share.

Consensual surveillance - invalidating consent

❑ Fraud

- transaction would have been fraudulent had the participants asked the producers if certain events were going to happen and the producers denied this, despite knowing that those events would indeed happen
- If the participants agreed to conditions of entry into the house, but they did not intend to abide by these conditions, they would be defrauding the producers

❑ Exploitation

- exploitation occurs when two parties, A and B, enter into an unfair transaction in which A takes advantage of B
- Example, film is made of an actor having intimate moments with another person, which will be distributed and watched. The actors are therefore subject to surveillance, and their reputation and privacy will be affected by that surveillance

❑ Coercion

- Two prongs to coercion: choice and proposal.
- Choice prong stipulates that A's proposal must prevent B from exercising his free will and judgement. That is, A leaves B no reasonable choice other than to meet A's proposal.
- Proposal prong stipulates that A's proposal is wrongful. Taken together, the choice and proposal prongs provide sufficient and necessary conditions for coercion.

How to determine whether coercion has occurred?

Wertheimer (2006)

- For a coercive situation to occur, the proposal must be a threat. For example, A threatens B by proposing to make B worse off relative to some baseline (i.e., threat) vs. A makes an offer to B by proposing to make B better off relative to some baseline (i.e., offer).
- Whether what is “wrongful” (compared against the baseline) is defined according to (any one of followings)
 - moral norms (moral test) – whether the implementation is morally required
 - societal expectations (statistical test) – what is normal in the society (expectation of majority)
 - experience of the event (phenomenological test) – e.g., feeling of paranoia, chilling effects, intrusion etc.

Coercion... an example

Imagine now a school that is proposing to fingerprint pupils to monitor what they buy for lunch. Children will no longer need to bring cash to school, and so will no longer risk being targeted by bullies who wish to steal their lunch money. Furthermore, parents will receive a weekly record of what their children are buying (albeit not necessarily eating) at lunchtime. The proposal is met with broad acceptance by the parents. Indeed, 98% of family units attending the school are in favour of it.

However, 2% of family units, let us say twenty families, would prefer their children not to be fingerprinted. The technology, however, does not allow for non-compliance: either every child is fingerprinted or no child is fingerprinted.

Given that the majority wish the school to go ahead and install the technology, are the dissenting families thereby coerced into using technology that they feel is invasive?

Smart home

Social and ethical concerns

- Autonomy, freedom and control
 - **Perspective 1:** humans gain more control over the environments with which they interact because technology will be more responsive to their needs in 3 ways:
 - i. Becomes more responsive to the voluntary actions, intentions, and needs of users
 - ii. Supply humans with detailed and personal information about their information
 - iii. Do what people want without having to engage in any cognitive or physical effort
 - Catch: “more control” is presumed to be gained through “delegation of control to machines”
- **Perspective 2:** humans lose control because a smart object can:
 - i. Make incorrect inferences about the user, the user’s actions, or the situation
 - ii. Require corrective actions on the part of the user
 - iii. Represent the needs of parties other than the user

Smart home

Social and ethical concerns

- Technological dependency
 - What would happen if we were to lose the capacity to perform many of our routine day-to-day tasks because of an increased dependency on technology?
- Privacy and surveillance
 - Anything that we say, do, or even feel could be “digitalized, stored, and retrieved anytime later”

Non-consensual surveillance

Non-consensual surveillance

- cause and context of the surveillance
- authority to carry out the surveillance
- proportionality and necessity of the surveillance
- accountability of the surveillant

Cause and Context for non-consensual surveillance

❑ Surveillance for security (deterrence and detection)

- **Example:** cameras designed to capture speeding motorists may be clearly labelled and advertised in advance, demonstrating that their purpose is less to catch the driver and more to encourage the driver to slow down. Cameras also serve to detect those who do not slow to within the speed limit.
- **For your thoughts:** often argued from paternalistic angle to such surveillance, monitoring people “for their own good” or “for the good of society” even when they resent the surveillance

❑ surveillance for efficiencies and efficacy

- **Example:** one CCTV operator watching 20 monitors may be more efficient than one police officer; ne automated CCTV camera might be both cheaper and more effective in the long term than a non-automated camera overseen by a human operator (although neither is necessarily the case)
- **For your thoughts:** CCTV operator cannot intervene (vs. a physical police officer) to help a person who has been attacked, and might miss seeing illegal activities on the monitors due to information overload; automated system could also be flawed through only being programmed to recognize a limited number of events, and so “miss” other illegal activities; or it may pick up on innocent activities that meet its coding parameters to be labelled “illegal”, leading to lengthy and unnecessary interference from the police.

Authority and Paternalism for non-consensual surveillance

☐ Authority

- **Example:** if the police carry out a phone tap without a warrant, then we say that they were acting without authority – they had not received permission to monitor this particular phone line. With the warrant, the police do have authority
- **For your thoughts:** authority lie a number of salient aspects.
 1. trust in the individual empowered – that they will act in the interests of the public, or of those monitored, rather than their own interests.
 2. trustworthy, and should not be empowered if she were not trusted
 3. authority tends to be conferred. A person may seize authority, but in so doing it does not follow that she is therefore an authority.

☐ Paternalism

- justified as being “for your protection”, even though you might not want, and have certainly never requested, such protection
- **For your thoughts:** 2016, a campaign was launched in the UK calling for a law to mandate the installation of security cameras in care homes, to deter and detect acts of abuse against residents, despite the fact that a majority of residents surveyed had said they did not want such cameras

Proportionality and necessity of non-consensual surveillance

❑ Necessity

- No alternative means to achieving a particular end, or that the alternative means available are worse than the means proposed
- **Example:** CCTV surveillance of a suspected shoplifter may be necessary if there is no other means of determining whether he actually is stealing from a shop, or if the alternative means of establishing this involve confronting him directly and risking publicly embarrassing him if he is not in fact stealing

❑ Proportionality

- Frequently used in ethics and jurisprudence to talk of, for example, obviously disproportionate acts or proportionate sentencing
- **Key:** justifying cause - an act of surveillance is (or is not) therefore proportionate to the justifying cause.
- **Example:** tapping someone's phone as part of an operation to apprehend a serial killer is a proportionate act; tapping the same phone to apprehend a petty shoplifter, though, would not be proportionate

Discrimination and deterrence of non-consensual surveillance

❑ Discrimination

- If a surveillant has no reason to monitor a person, then she should not monitor that person, owing to the wrongs that accompany surveillance
- **Example:** CCTV surveillance in prison

❑ Deterrence

- Suppose surveillance can prevent crimes, am I justified in monitoring everyone on Orchard Road?
Expanded further to envisage a situation in which someone will hit (or plant a bomb with the aim of killing) someone else, am I now justified in monitoring everyone at all times and in all places, if through doing so I would prevent the assault or murder?