



 POLITECNICO DI MILANO



Computer Ethics

Ethical Theories and Normative Argumentation

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More theories in normative ethics



- It is an ethical theory that focuses on the **nature** of the **acting person**. This theory indicates which good or desirable characteristics people should have or develop to be moral
 - **Aristotle** (384-322 BC) and **eudamonia** (the good life): a state of being in which one realizes one's uniquely human potential (the state of being a good person)
 - Moral virtue is the middle course between two extremes of evil
 - **Practical wisdom** is the intellectual virtue enabling one to make the right choice of action and consisting in the ability to choose the right mean between two vices



- Virtue ethics does **not** give **concrete clues** about how to act while solving a case, but does facilitate **responsible action**



- Virtues for **morally responsible engineers** focusing on **engineering practice** (Pritchard 2001)
 - Expertise/professionalism
 - Clear and informative communication
 - Cooperation
 - Willingness to make compromises
 - Objectivity
 - Being open to criticism
 - Creativity
 - Striving for quality
 - Having an eye for detail
 - Being in the habit of reporting on your work carefully



- An ethical theory that emphasizes the **importance** of **relationships**, and which holds that the development of moral does not come about by learning general moral principles (Gilligan 1982)
- It focuses attention on the **living** and **experienced reality** of people in which mutual relationships can be viewed from different perspectives
 - People's abilities and limitations impact moral decision-making
- What's the problem?
- Care ethics is criticized for being **philosophically vague**
 - What does care exactly entail?



Social ethics of engineering (Devon and van de Poel⁷ 2004)

- An approach to ethics of engineering focusing on the **social arrangements** in engineering rather than on individual decisions
- **Engineers** are **not the only ones** who are responsible for the development and consequences of technology
 - **Developers and producers of technology** (engineering companies, industrial laboratories, consulting firms, universities, research centers)
 - **Users** who use the technology and may formulate certain wishes or requirements for the functioning of a technology (both **companies** and **citizens**)
 - **Regulators** (organizations) who formulate rules or regulations that engineering products have to meet (rulings concerning health and safety, but also linked to relations between competitors)
 - **Others** such as professional associations, educational institutes, interest groups and trade unions



- **Applied ethics is not the application of moral principles** or theories to **particulars situations**
 - No moral theory is generally accepted (and even if it were one it could be not easy to apply it to particular cases)
 - Theory development in ethics does not take place independent of particular cases; rather is an attempt to systematize particular cases
- Role of applied ethics in **discovering** the **ethical aspects** of a problem or a situation
 - Different ethical theories stress different aspects of a situation
 - Ethical theories also suggest certain **arguments** that can play a role in moral judgments



Normative argumentation



- Purpose of argumentation is to **justify** or **refute** a **statement**
 - **Argument** is a set of **statements**, of which one (the **conclusion**) is claimed **to follow** from the others (the **premises**)
 - **Conclusion** of an argument is the statement that is affirmed on the basis of the argument
 - **Premises** are the statements which are affirmed (or assumed) as providing support or reasons for accepting the conclusion



- **Valid argument** (logic) is an argument whose conclusion follows **with necessity** from the premises
 - If the premises are true, the conclusion must be true
- Valid argument are of a **deductive nature**, that is the **conclusion** is **enclosed** in (implied by) the **premises**



- Many arguments from daily practices are not constructed deductively at all, since we often **change** our **conclusions** when **new information** is **added** (non-monotonicity)
- In non-deductive arguments the **conclusion** is **logically stronger** than the premises (the premises if true give a limited amount of support to the conclusion)
 - Ex.: the conclusion that John inherits the money of his wife, from the premises “*if John’s wife dies, John will inherit her money* (and nothing else is known)” and “*John’s wife dies*” will change if we add the information that John has killed his wife



- **Sound** argumentation is an argumentation for which the corresponding **critical questions** can be answered positively and which therefore makes the conclusion **plausible** if the premises are true
- Critical questions are those belonging to a certain type of non-deductive argumentation to check the **degree of plausibility** of a conclusion
- Due to the **indirect nature** of non-deductive argumentation, there always is a small degree of **uncertainty**, whereas deductive argumentation completely excludes any possible doubt



- Often used in **ethical discourse** to fill policy or moral vacuum surrounding modern technologies
- Type of non-deductive argumentation **based on comparison** with another situation in which the judgment is clear
 - The judgment is supposed also to apply to the analogous situation



- Discussion on hacking in the early 1990s
 - A number of hackers felt their behavior as morally acceptable because they wanted to help system managers to trace errors
 - Opponents used an argumentation by analogy: “You do not go to a clothing store and set fire to the clothing there to see whether fire safety procedures are in place”
 - Is this a good analogy?



- Are the two situations **comparable**?
 - Are there important relevant **similarities**?
 - Are there no important relevant **differences**?
- In the example about hacking the question whether are no important and relevant differences is problematic
 - In the case of hacking no damage is caused, whereas in the example situation there is damage to clothing
 - When this difference is highly relevant, the analogy fails (**false analogy**)



- An action is morally acceptable if and only if that action can be reasonably expected to produce the **greatest happiness** for the **greatest number** of people
- The **means-end argumentation** is at the forefront
- Type of **non-deductive argumentation** in **which from a given end the means are derived** to realize that end
 - If you wish to achieve end X, then you must carry out action Y



- Does action y **indeed realize** end x?
- Can action y be carried out?
- Does execution of action y lead to **unacceptable side effects**?
- Are there no other (**better**) **actions** to achieve x?
- Is the **end acceptable**?



- An action is morally acceptable if and only if the action meets the first/second categorical imperative
 - **Universality principle**
“Act only on that maxim which you can at the same time will that it should become a universal law”
 - **Reciprocity principle**
“Act as to treat humanity, whether in your own person or in that of any other, in every case as an end, never as a means only”
- Based on showing that the negation of the action leads to a contradiction as soon as you make a general law of it
- This a **proof from the absurd**



- Action '*I will not keep my promise*' is morally unacceptable if you're in need of money
- The maxim '*if I'm in need of money, I can break my promise*' leads to a contradiction as soon as a general law is made of it
- Promises no longer make sense, because everybody is allowed to break a promise
- You cannot make a general law of '*if I'm in need of money, I may break my promise*'



- An action is morally acceptable if and only if that action is what a virtuous agent would do in the circumstances
 - How do we define a **virtuous person**?
- **Characteristic-judgment argumentation** is a type of **non-deductive argumentation** based on the assumption that a certain judgment about a thing or a person can be derived from certain characteristics of that thing or person
 - To show that an employee is a virtuous employee, we need to demonstrate that the employee possesses the virtues of responsibility, loyalty and trust



- Do the characteristics mentioned **justify** judgment A?
- Are the characteristics mentioned all **typical** of A?
- Are there any other characteristics **necessary** for A?
- Does X possess characteristics that justify the judgment not A?
- Does X possess the characteristics mentioned?



- **Informal fallacies** are based on the consideration of the **context** and **content** of the arguments
 - **Attack on the person** is an attempt to discredit an argument by bringing into question in some negative ways the presenter of the argument instead of attacking the argument itself
 - **Confusion of law and ethics:** *“if it isn’t illegal, it is ethical”* without recognizing that ethics is more compassionate than law
 - **Wishful thinking** occurs when a person interprets fact, events, etc. according to what she/he would like the case rather than according to the actual or rational evidence (*“Surely God exists, because I have complete belief that He does”*)
 - **The privacy fallacy** (*“If you have done nothing wrong, you have nothing to worry about”*)
 - **Fallacies of ambiguity** when words or phrases are used unclearly



- **Specific fallacies** on the **acceptability** of **technological risks** in public debates
 - **The sheer size fallacy:** *you must accept nuclear energy because the risks are smaller than that of driving a car"*
 - **The fallacy of naturalness:** *X is unnatural, so X should not be accepted*
 - **The ostrich's fallacy:** *X does not give risk to any detectable risk, so X does not give rise to any unacceptable risk*
 - **The delay fallacy:** *if we wait we will know more about X, so no decision about X should be made now*
 - **The technocratic fallacy:** *it is an engineering issue how dangerous X is, so engineers should decide whether or not X is acceptable*
 - **The fallacy of pricing:** *we have to weight the risks of X against its benefits so we must put a price on the risks of X*



- Johnson, D. (2009). *Computer Ethics*, Forth Edition, Prentice-Hall
- Van de Poel, I. and Royakkers, L. (2011). *Ethics, Technology, and Engineering*, Wiley-Blackwell