Ethics in Data Science

Quantititive Methods

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1 Defining Ethics

What is Ethics According to You?

A Formal Definition

ethics

1. moral principles that govern a person's behaviour or the conducting of an activity. "medical ethics also enter into the question"

Similar: moral code, morals, morality, moral stand, moral principles, moral values, rights and wrongs, principles, ideals, creed, credo, ethos, rules of conduct, standards (of behaviour), virtues, dictates of conscience

2. the branch of knowledge that deals with moral principles. "neither metaphysics nor ethics is the home of religion"

What is involved in ethics?

Figure 1: Ethics is complex and it depends on your viewframe.

Does it need to be difficult?

[externalviewer,showcontrols=true,width=.8height=.35]img/deWaal.mkv Two mokeys are paid an unequal reward - Frans De Waal / TED — **brosnan2003monkeys**

Dillema 1: Kill the Baby or Old Person?

Dillema 1: Who to Kill - take 2

Ethics . . .
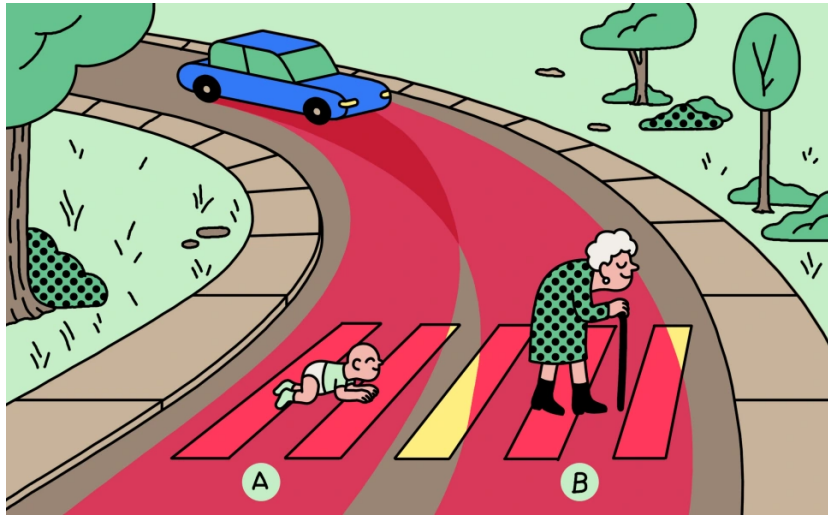
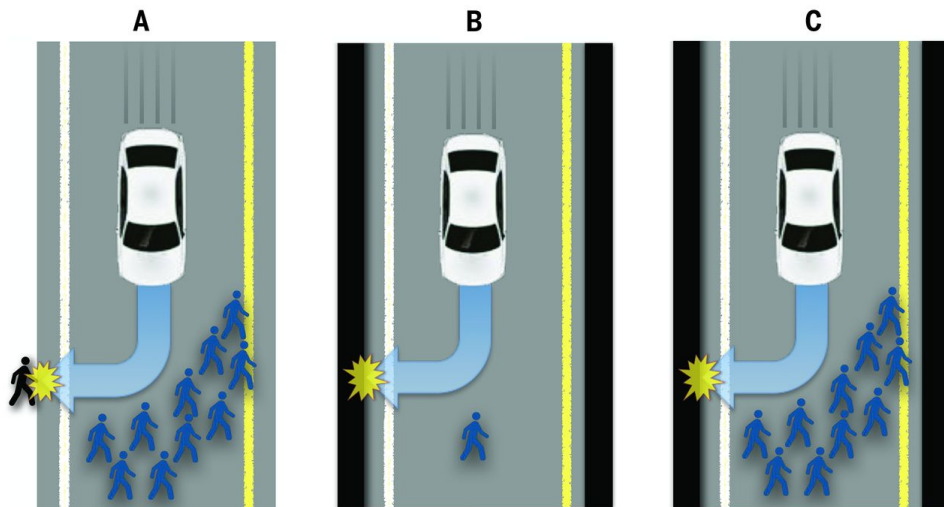Figure 2: source: MIT Technology Review — **hao2018should**

Figure 3: source: Science — **bonnefon2016social**
Should we veer and kill the person who is on the pavement? What if there is only one person on the street? How many people to change behaviour?
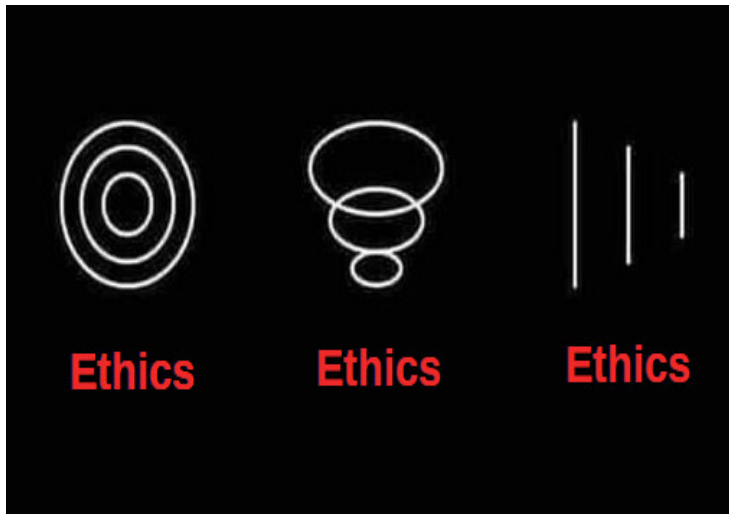
Figure 4: Ethics is complex and it depends on your point of reference and you frame.

2   Questions Around AI

A Definition of AI

A cross-disciplinary approach to understanding, modelling, and replicating intelligence and cognitive processes by invoking various computational, mathematical, logical, mechanical, and even biological principles and devices. — **brundage2015taking**

or (Britanica.com) the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings

or (Wikipedia) Artificial intelligence (AI) is intelligence demonstrated by machines, as opposed to the natural intelligence displayed by animals and humans.

First Some Simple Questions

- What is exactly Intelligence and how to measure it?

  the ability to acquire and apply knowledge and skills (Oxford Dictionary)

- What is exactly consciousnes?

  the state of being aware of and responsive to one's surroundings - Oxfor Dictionary

- What is Self-conscienness? Sentience? Life?

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Issues with Morality and AI

- What if AI becomes more intelligent than people? Does it get moral status?

- What about the singularity and benevolence of machines?

- What about enhanced humans (e.g. math implant in brain?)

- What when we can "upload" a human brain? Who owns it? Can we switch it off?

- Does a conscience and sentient AI deserve rights?

- Who are we to decide this?

- Can one delegate agency to the an AI? Who has the moral agency?

- Should we manipulate data? (and counter-act bias?)

3 Ethics in Data Science

Issues

- user consent

- privacy, data protection

- intellectual property rights, data ownership

- safekeeping: avoiding data theft, cyber security

- trust, surveillance, free will

- competition

- discrimination:

    - bias
    - fairness
    - accountability
    - transparancy

4 Way of working

5 Conclusions

Conclusions

A. Ethics refer to moral the principles that govern our behaviour

B. General ideas are innate

C. More complex problems, are not obvious and not everyone agrees. Viewpoint matters.

D. Therefore morality cannot be reduced to followng rules.

E. Data Science is riddled with ethical issues.