

Ethics in Data Science

Quantitative Methods

Dr. Philippe J.S. De Brouwer

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Defining Ethics

What is Ethics According to You?

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=.99height=.75]img/deWaal.mkv

Two mokeys are paid an unequal reward - Frans De Waal / TED —

brosnan2003monkeys

Dilemma 1: Kill the Baby or Old Person?

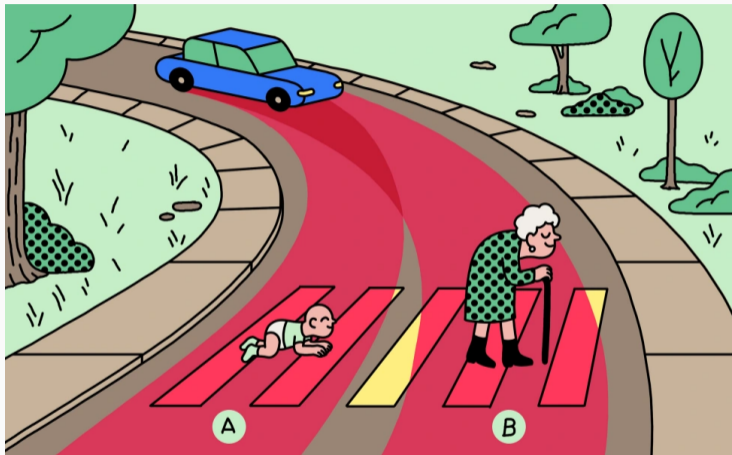


Figure 2: source: MIT Technology Review — hao2018should

Dilemma 1: Who to Kill - take 2

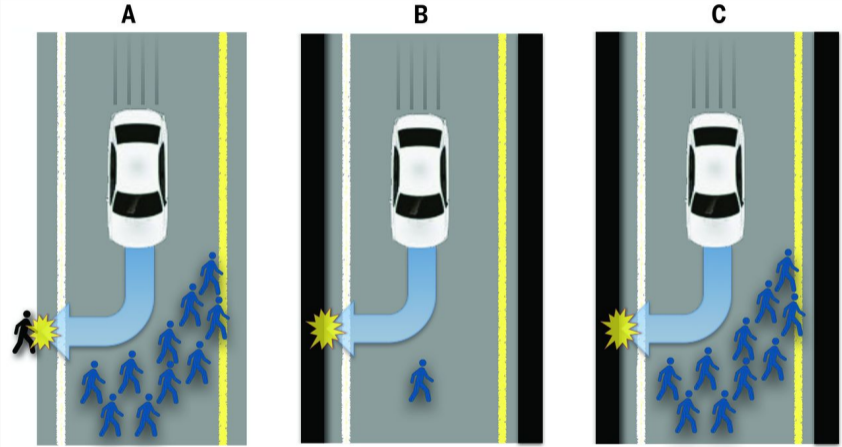


Figure 3: source: Science — [bonnefon2016social](#)

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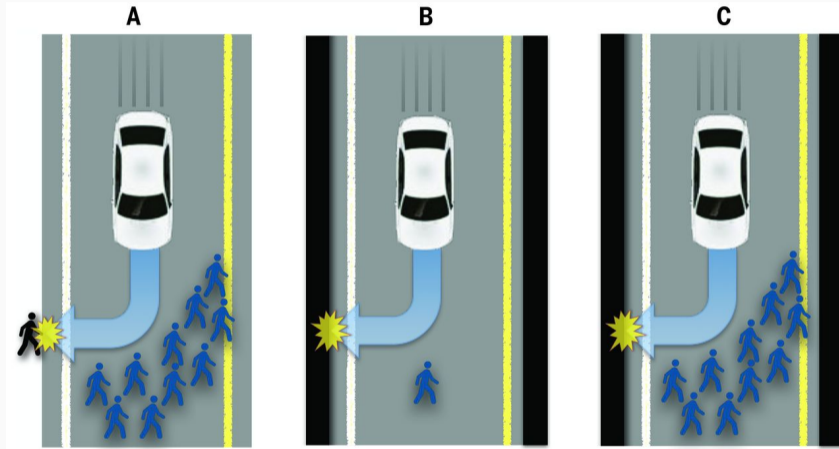


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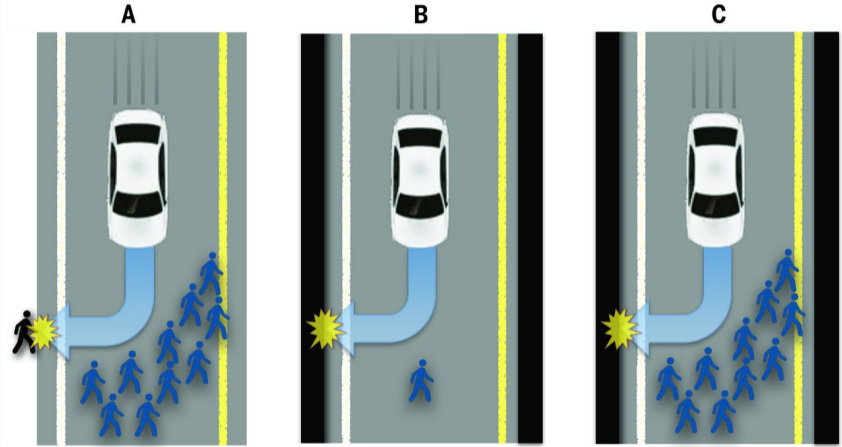


Figure 3: source: Science — **bonnefon2016social**

Should we veer and kill the person who is on the pavement? What if there is only one

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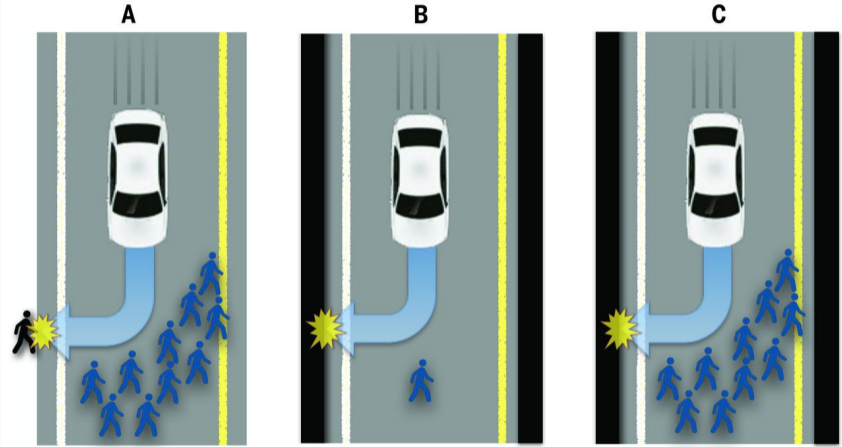


Figure 3: source: Science — **bonnefon2016social**

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Figure 4: Ethics is complex and it depends on your point of reference and you frame.

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?

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- What is Self-consciousness? Sentience? Life?

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

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

Ethics in Data Science

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- intellectual property rights, data ownership

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Way of working

Conclusions

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2. General ideas are innate
3. More complex problems, are not obvious and not everyone agrees. Viewpoint matters.
4. Therefore morality cannot be reduced to following rules.
5. Data Science is riddled with ethical issues.