



SELF DRIVING CARS

ETHICS & DEONTOLOGY

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What is a driveless car?

- **Robotic vehicle** designed to travel between destinations without a human operator.
- The vehicle **must be able to navigate** without human intervention to a predetermined destination over roads that have not been adapted for its use.



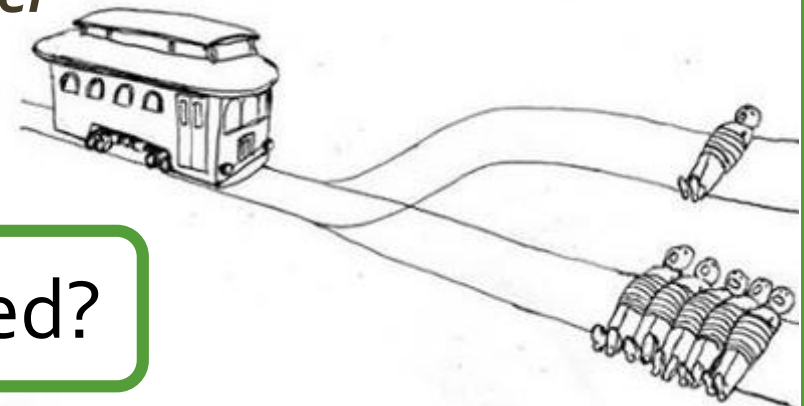
The Trolley Problem

*"A tram runs **out of control** one way.*

*On his way there are **five people tied** to the road by an evil philosopher.*

*Fortunately, it is possible to operate a button that will **route the tram by a different route**, unfortunately, there is **another person tied to it.**"*

Should the button be pressed?



Moral distinction between...



- *An act that one consciously wills and that may be characterized by physical or mental activity.*
- *Inertia, idleness or absence of action.*

Action or Inaction

- How should the car be programmed to act in the event of an unavoidable accident?
- Should it minimize the loss of life, even if it means sacrificing the occupants, or should it protect the occupants at all costs?
- Should it choose between these extremes at random?

Reaction (aleatory) vs. Decision (delivered)

- **Human error** contributes to **90%** of all **traffic accidents**.
- Killing **one person** is **better than** killing **10**.
- **People** are in **favor** of cars that **sacrifice the occupant** to **save other lives** - as long they don't have to drive one themselves.
- If we want to save lives, our goal is to **prevent** us from getting in **these situations**, because that implies that we screwed up.

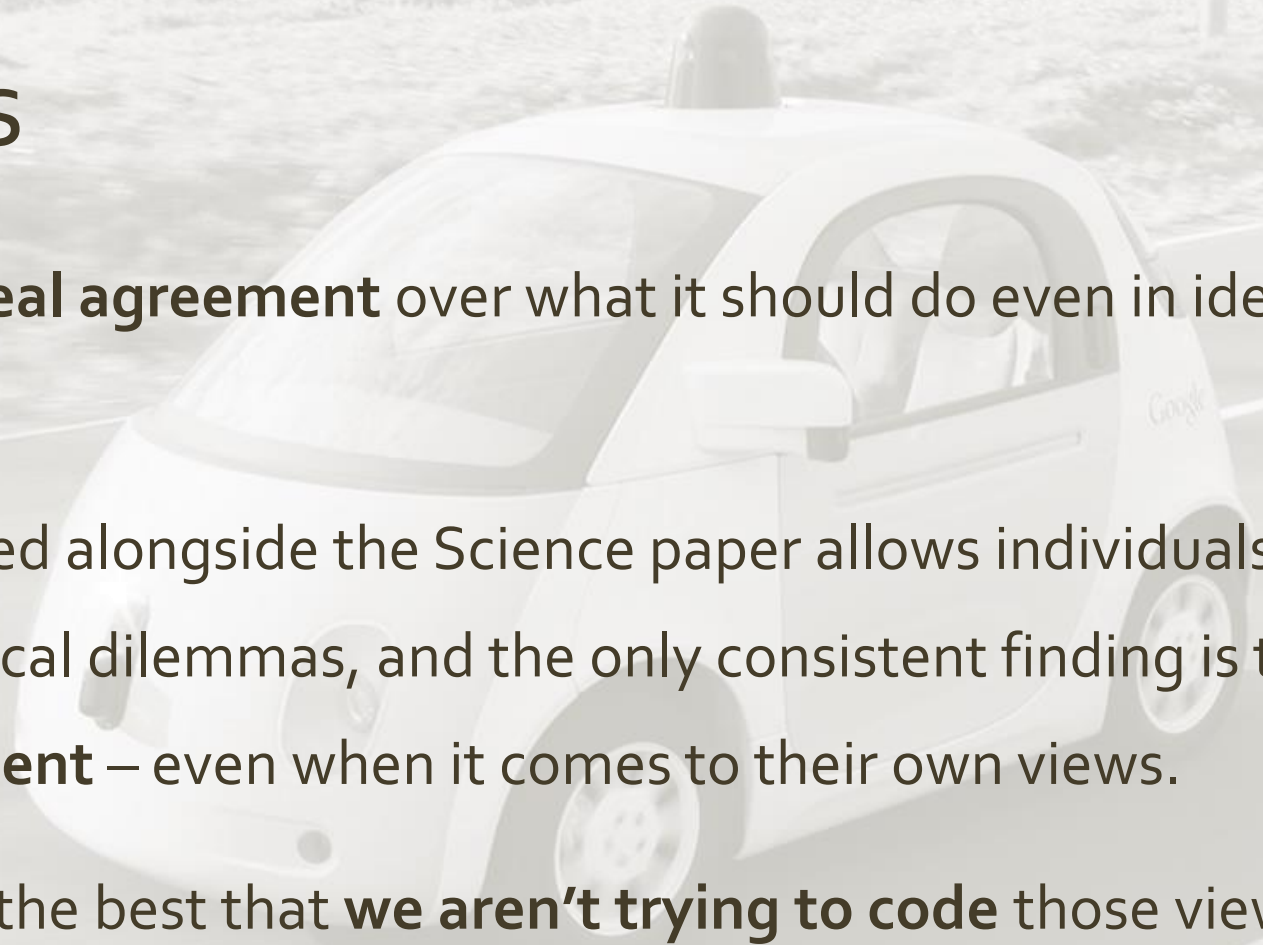
Problem

One car that will save as many lives as it can
or one car that will save your life?

- “As we are about to endow millions of vehicles with autonomy, taking algorithmic morality seriously has never been more urgent.”
- “Putting questions of life and death in the hands of coders in California who make opaque decisions that may not be socially optimal.”

Conclusions

- There remains **no real agreement** over what it should do even in idealized circumstances.
- A public tool released alongside the Science paper allows individuals to create their own ethical dilemmas, and the only consistent finding is that **people are inconsistent** – even when it comes to their own views.
- So it's probably for the best that **we aren't trying to code** those views **into our cars just yet**.



Thank you so much
for your attention!

