A1.2 - Ethical Dilemma Analysis

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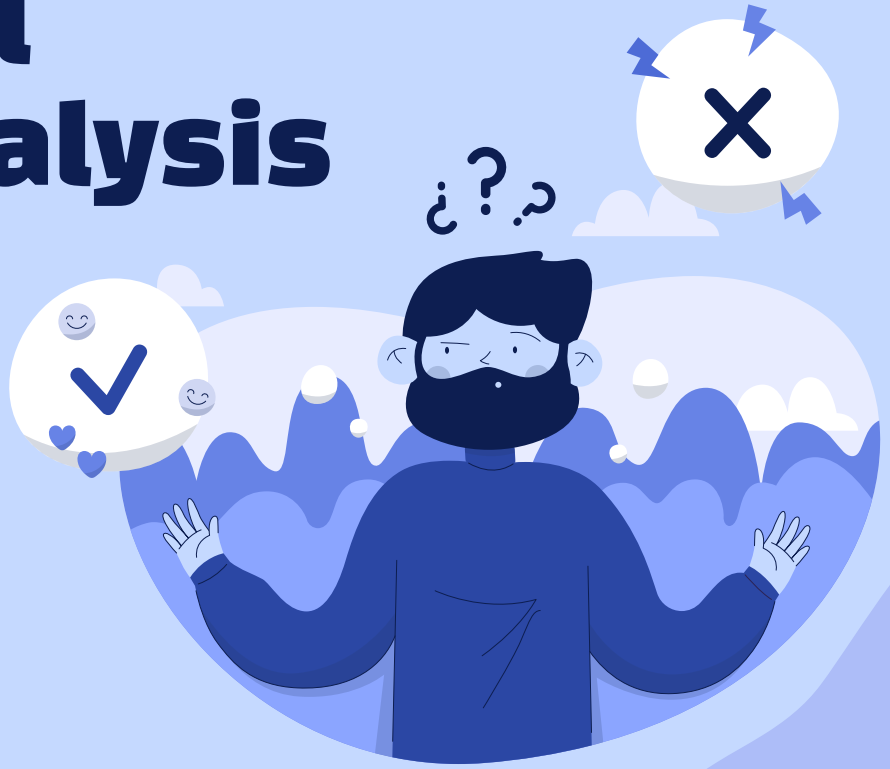


01

Introduction to the Trolley problem

The Trolley Problem

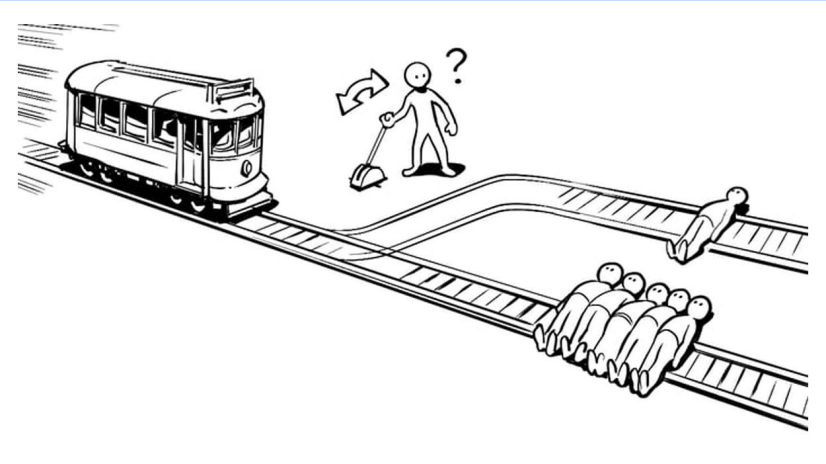
The Scenario:

- A runaway trolley hurtles towards five people on the tracks.
- An operator stand by a switch that can move the trolley to a side track.
- However, one person is on the side track.

The Dilemma:

- Do nothing: Trolley kills five people (inaction)
- Pull the switch: Trolley kills one person (active intervention)

Is it better to let five die or directly cause one death?

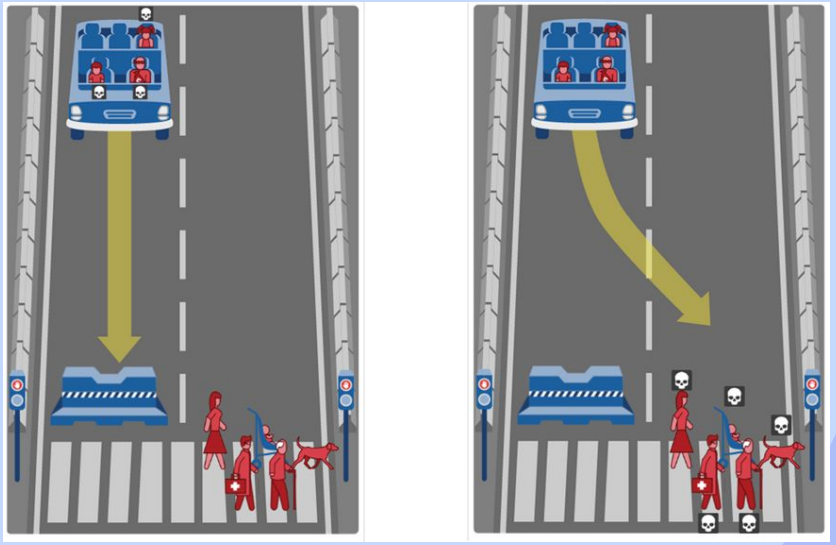


02

Trolley transposed with autonomous vehicle

The Autonomous Vehicle Problem

- The trolly problem can be converted into a similar modern-day version of autonomous vehicles.
- In our second scenario, the programmed autonomous car will have to make a decision similar to the operator in the trolly problem above.



Critical analysis framework

03

Understand the situation

A

Continue to go straight, killing 3 passengers as they hit a wall

B

Swerve to the right, killing 3 adult pedestrians, a baby, and a dog.

Isolate the major ethical dilemma

When the crash becomes unavoidable, should the car's programming handle it by:

- Prioritising the lives of the passengers
- Calculate for the minimal casualties possible

Identify all stakeholders

	Direct	Indirect
1	Passengers on the vehicle	Autonomous car company
2	Adult and baby pedestrians	Insurance companies
3	The dog	The public

Legal implications

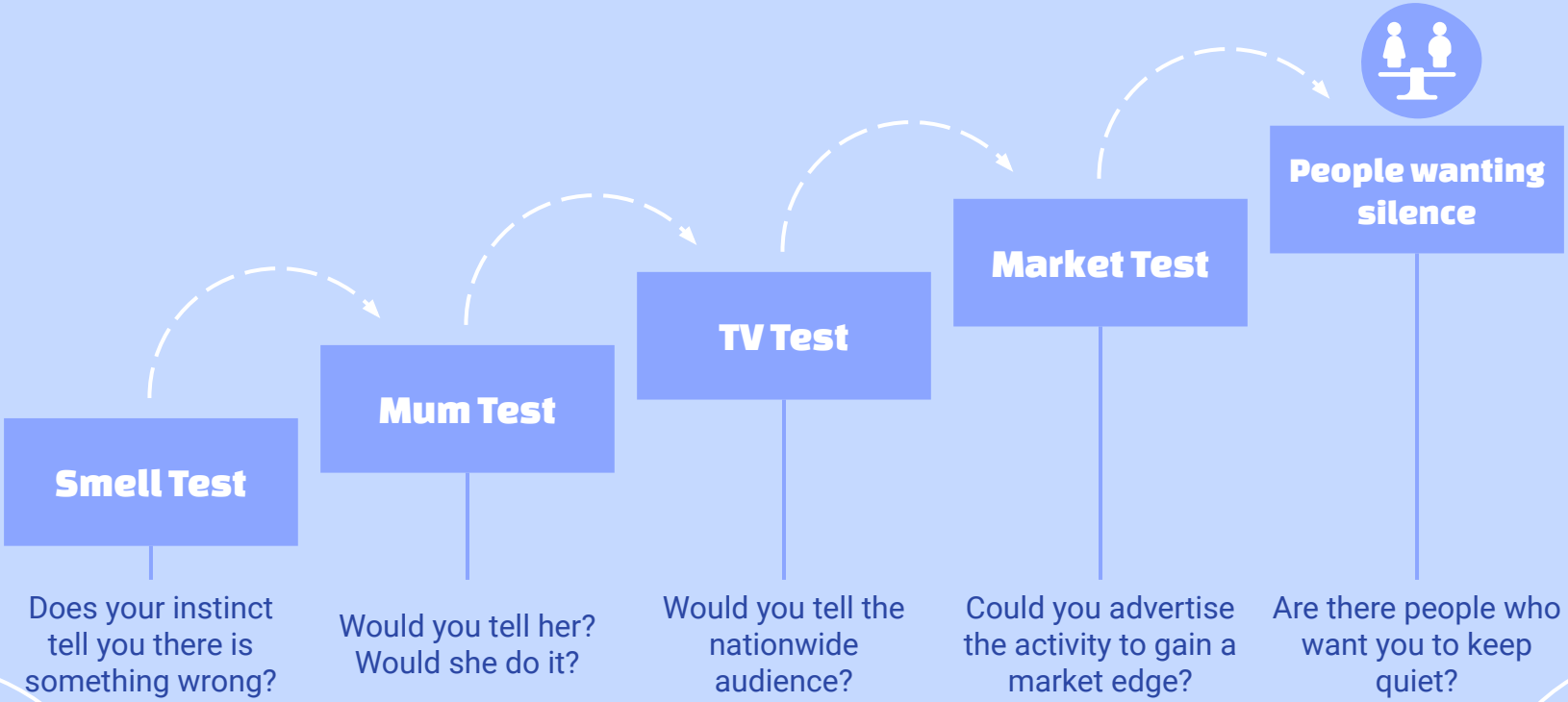
Manufacturer

- Held accountable for accidents occurring when the system operates autonomously
- Product liability lawsuits for manufacturing, design, or warning failures

Others

- The legal system might determine fault and liability
- Does not dictate how the car should be programmed to behave in our unprecedented emergency

Informal guidelines



Formal guidelines

APA

Reduce or eliminate fatal vehicle crashes for all users of the transportation systems, but especially pedestrians/cyclists (American Planning Association, 2018)

Future Considerations

Take into account various factors, including responsibility, safety, transparency and sustainability (Gleadow, 2022)

Ethical principles

- **Consequentialism** (teleology): Does the action minimize actual and potential harm?
  - **Egoism**: good for me, minimal harm to me?
  - **Utilitarianism**: good for the group, least harm to the group?
  - **Altruism**: good for all, some harm to me?
- **Rights and duty theory** (deontology): what rights and what duties may be or have been neglected?
- **Kant's Categorical Imperative**: treating everyone with respect and equal values

Making a decision

01

Make a defensible ethical decision

Continue straight to minimise harm

02

Take precedence in conflict

Minimise harm and maximise wellbeing

03

Implementation steps

3 steps approach

04

Impact on stakeholders

Going straight saving pedestrians

05

What should happen in the first place

Should have advanced safety features

06

Long term changes

Clear regulation, public awareness

Conclusion

By carefully considering these ethical issues, we can pave the way for a safer future with autonomous vehicles.

References

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