VALUE SENSITIVE DESIGN

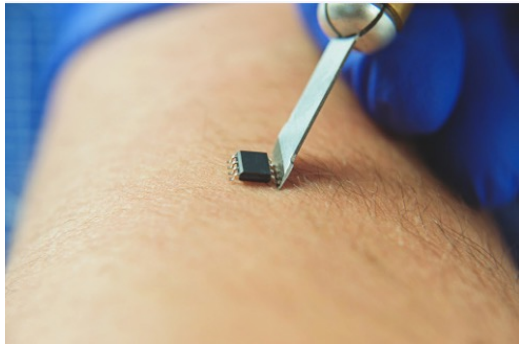
envisioning better futures

Innovation brings a lot of goods!

But it is not a good in itself!


SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

ICT & Health



Technology is never ‘value neutral’

Do artefacts have politics?

ICT is not without values

- Search engines
- Financial software
- Etc..

The Formula that almost Killed Wall street

David X. Li's Gaussian copula function (2000) Investors exploited it as a quick—and fatally flawed— way to assess risk.

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Balancing multiple values

Design for privacy

Design for security

Design for inclusion

Design for sustainability

Design for democracy

Design for safety

Design for transparency

Design for accountability

Design for human capabilities

Technology has to be an expression of our shared values

MORAL OVERLOAD

‘May actually trigger creativity and the commitment to try and accommodate conflicting values by smart design and innovation’


CONFLICT FREE
TIN & TANTALUM
(D.R. CONGO)
ROOTABLE
OPERATING
SYSTEM
WORKER
WELFARE
14:23
REPLACEABLE
BATTERY
E-WASTE
PROGRAM
DUAL SIM

Tidal Energy Oportunities in Zeeland


ELECTRIC
102175
64KPH
VOLVO

Implications of RI:

- Obligation to look for the best solution on the basis of our moral values
- Amplify set of obligations we can satisfy
- Process aspect: no false excuses, we are responsible

Common – but not valid - excuses

We did not know what we were doing - *KNOWLEDGE*

We did not have any time to consider – *CONTRIBUTORY*

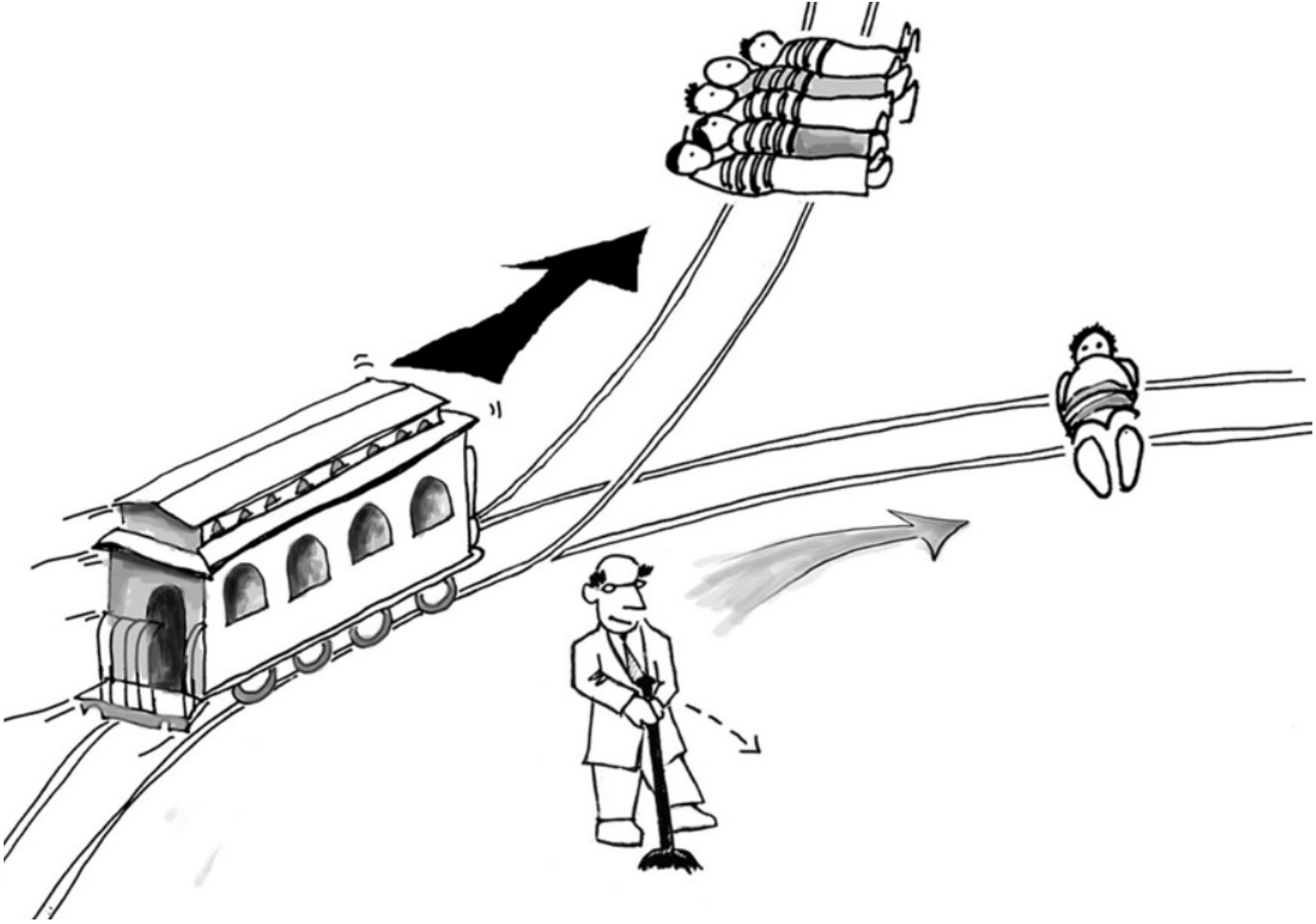
We did not have the capability to find out – *CAPACITY*

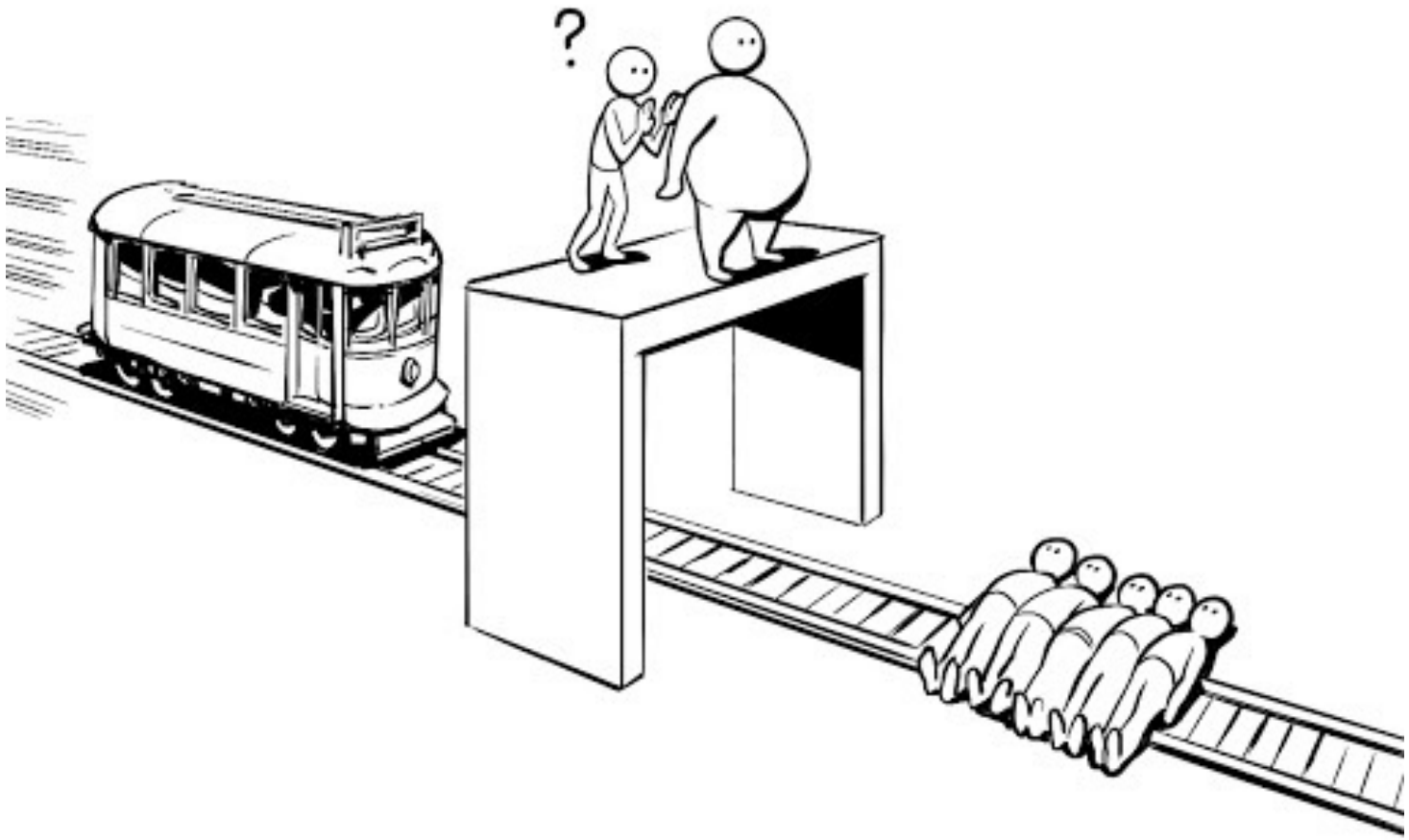
We did not know there were other options – *KNOWLEDGE*

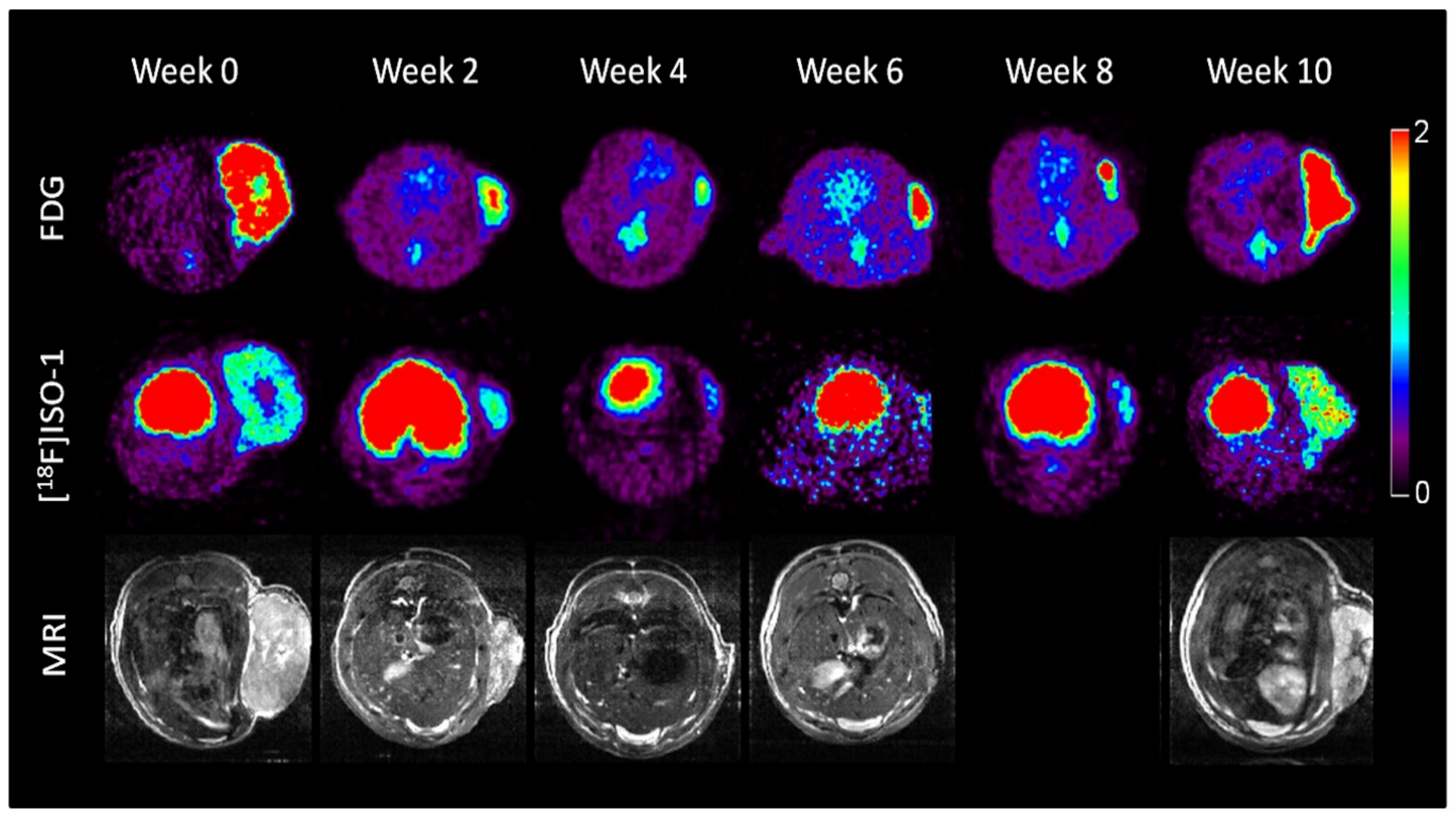
Design *for* Values

- To obtain the relevant knowledge on (i) the consequences of the outcomes of their actions and on (ii) the range of options open to them
- To evaluate both outcomes and options effectively in terms of relevant moral values
- To use these considerations as requirements for design and development of new technology, products and services leading to moral improvement

TROLLEY PROBLEM



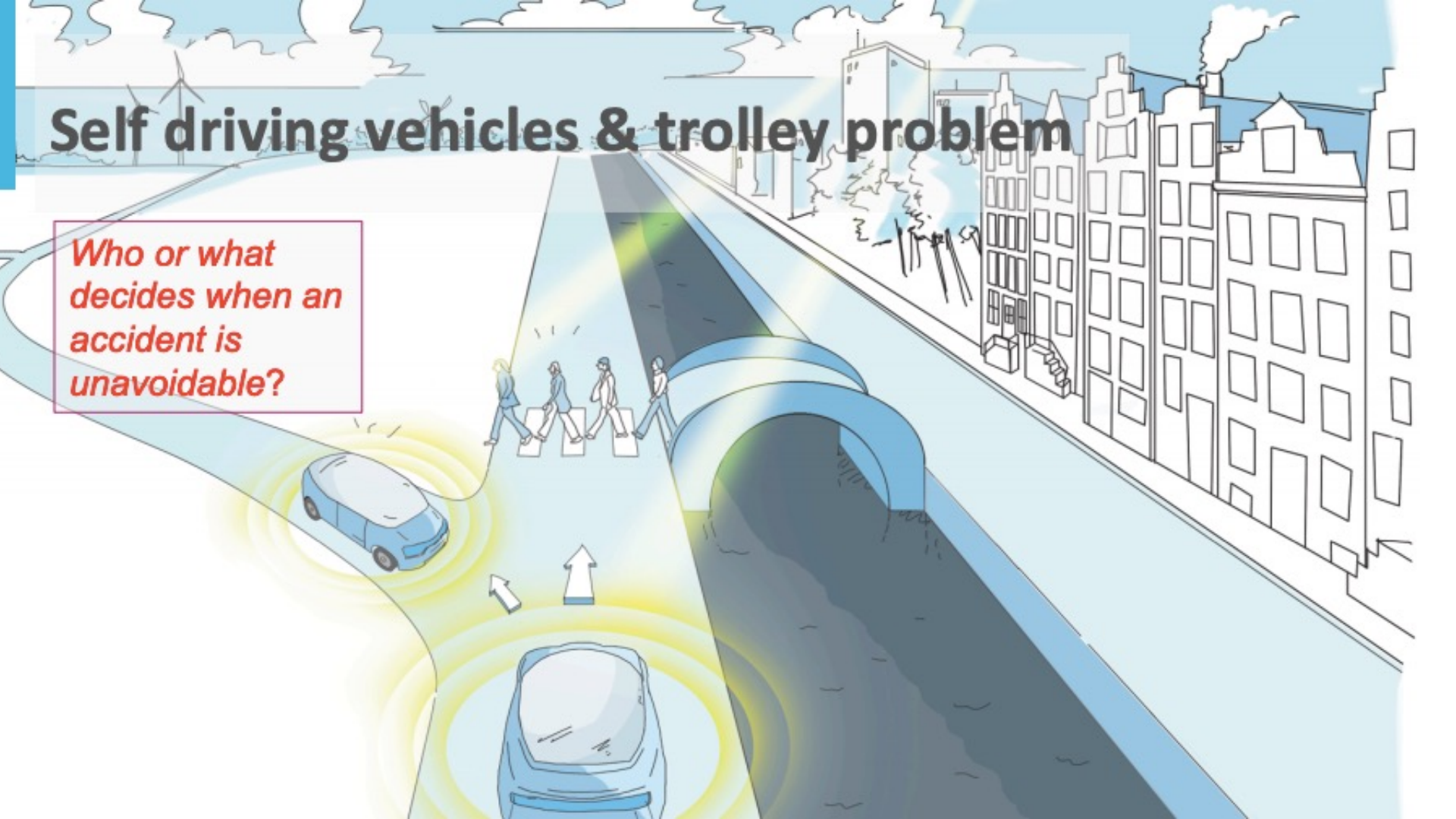



Week 0
Week 2
Week 4
Week 6
Week 8
Week 10
FDG
[18F]ISO-1
MRI
2
0

Trolley problem = valuable dimension for thinking about responsibility in a high-tech world

Self driving vehicles & trolley problem

Who or what decides when an accident is unavoidable?



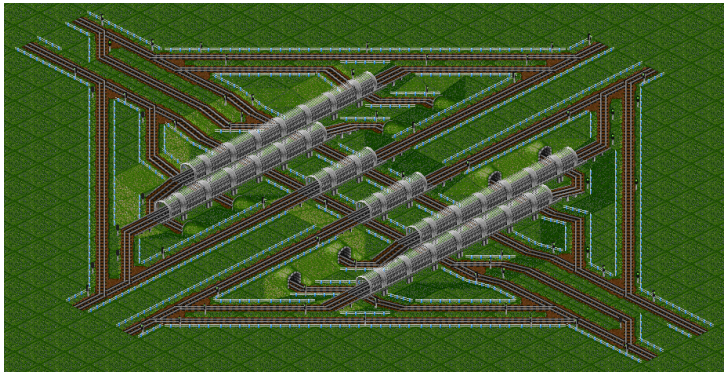
RI =

anticipating moral choice & taking responsibility for the responsibility of others

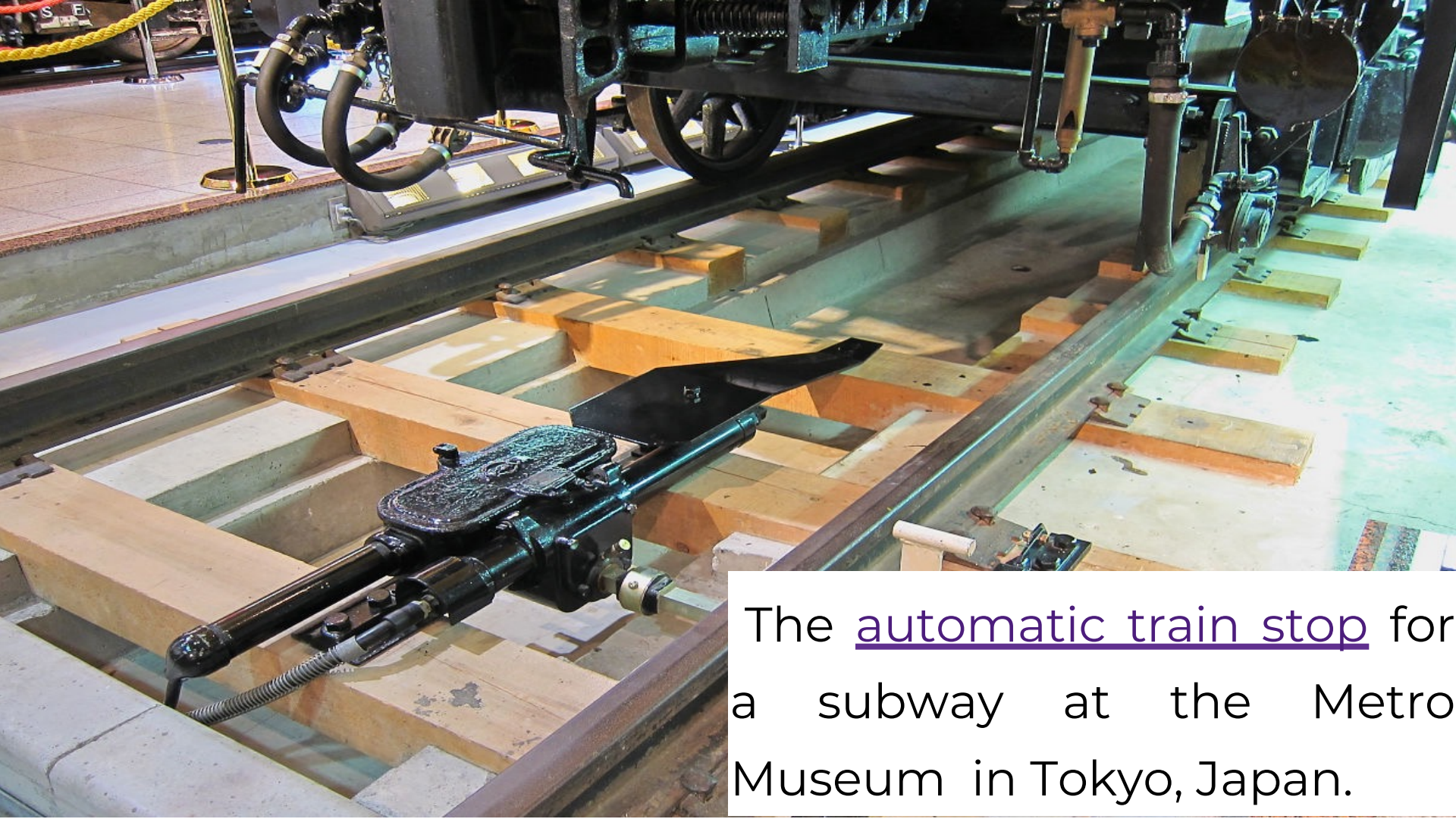
TROLLEY PROBLEM

The Engineering Perspective

Think about better designs to..




Prevent this

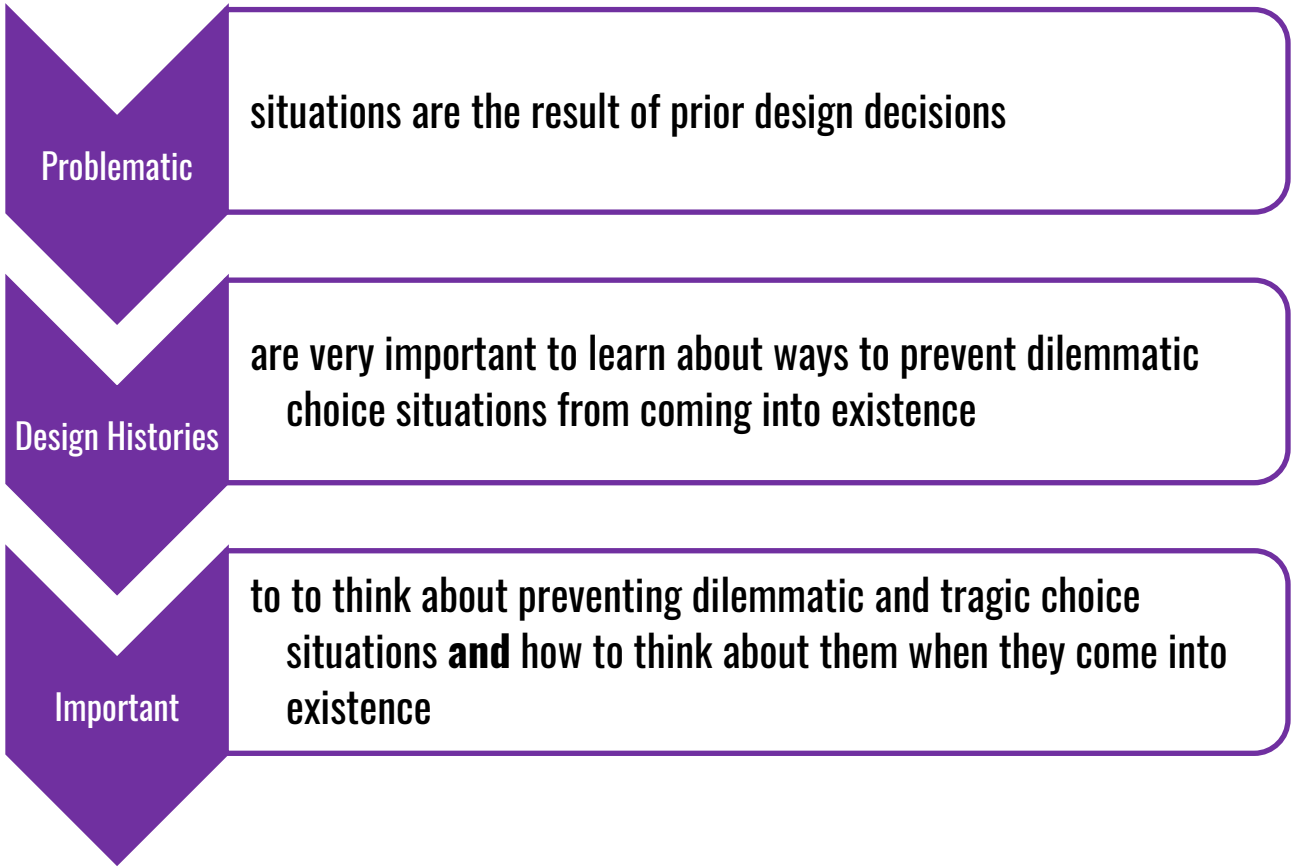


The automatic train stop for a subway at the Metro Museum in Tokyo, Japan.

Engineers

- Focus: changing the world for the better **by design**.

- Take into account **design histories** which lead up to tragic choices: prior design decisions (‘Path dependency’)


Problematic
situations are the result of prior design decisions
Design Histories
are very important to learn about ways to prevent dilemmatic choice situations from coming into existence
Important
to to think about preventing dilemmatic and tragic choice situations **and** how to think about them when they come into existence

RI

=

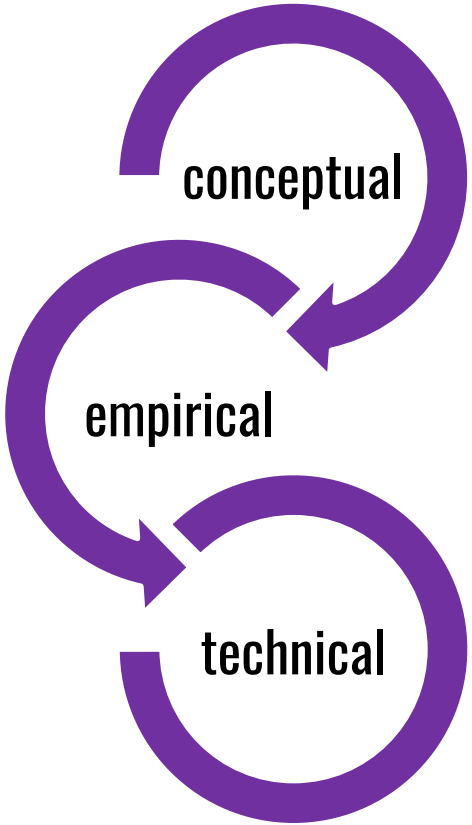
- Anticipating moral choice and taking responsibility for the responsibility of others
- Designing and shaping technology in the understanding that future generations will be ‘stuck’ with this technology (‘path dependency’)
- Ability of engineers and applied scientists to take responsibility now for future designs

How do we responsibly innovate?

VALUES SENSITIVE DESIGN!

WHAT IS VSD?

- A design approach that keeps human values at the forefront of the design process!



FEATURES OF VSD?

- Proactive
- Enlarges the area of values
- Enlarges the scope of values (to all values!)
- Integrative methodology
- Interactional Theory
- Independent foundation for moral values
- Universally held values

WHAT ARE VALUES?

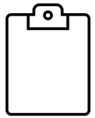
”what a person or a group of people consider important in life”

PRIVACY

SUSTAINABILITY

FREEDOM FROM BIAS

AUTONOMY

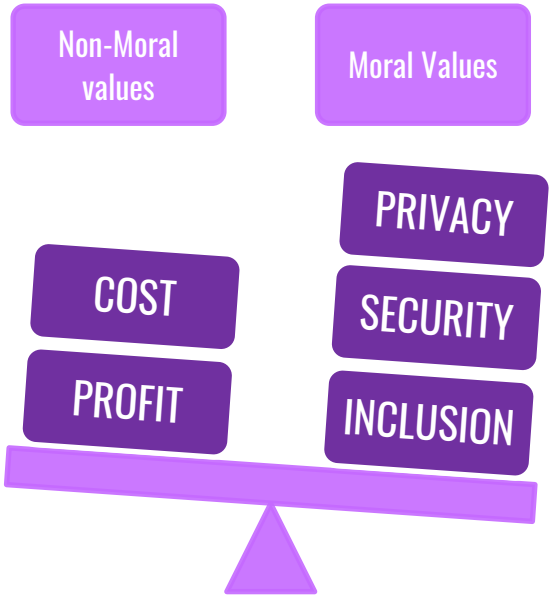


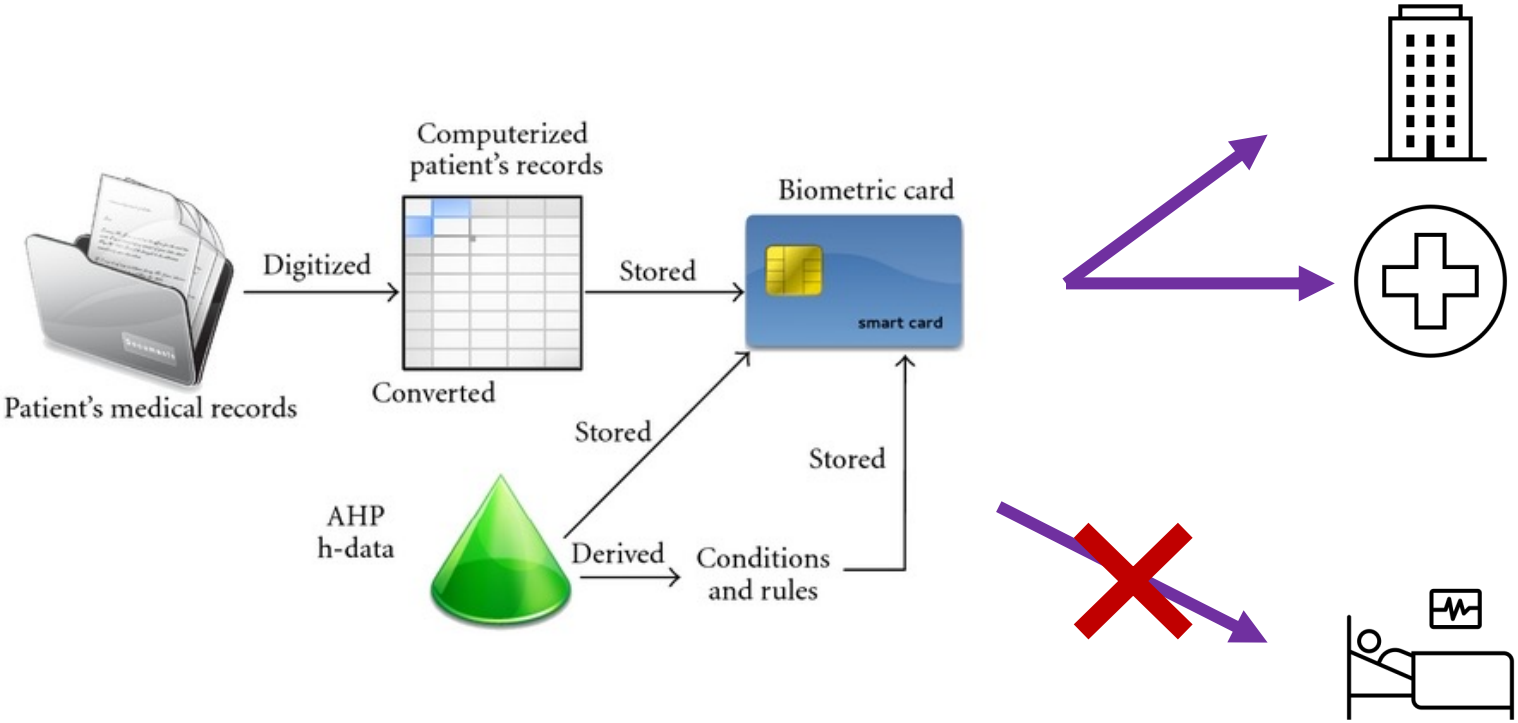
INFORMED CONSENT

OWNERSHIP & PROPERTY

CONCEPTUAL INVESTIGATIONS

- IDENTIFYING & UNDERSTANDING STAKEHOLDERS




Computerized
patient's records
Biometric card
Digitized
Stored
smart card
Converted
Patient's medical records
Stored
Stored
AHP
h-data
Derived
Conditions
and rules

EMPIRICAL INVESTIGATIONS

- QUALITATIVE OR QUANTITATIVE DESIGN RESEARCH

Focus on groups that use the technology

What people say vs. what they do

What values are they focusing on throughout the process

TECHNICAL INVESTIGATIONS

- HOW DOES THE ARCHITECTURES SUPPORT OR CONSTRIN CERTAIN CALUES?

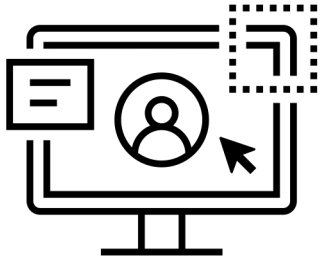
HOW DOES THE DESIGN OF THE SYSTEM REFLECT VALUES?

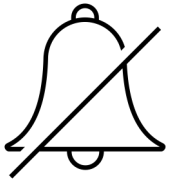
DESIGN OF THE SYSTEM TO SPPORT VALUES IDENTIFIED IN THE PREVIOUS INVESTIGATIONS


BOSE

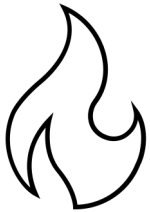
CONCEPTUAL INVESTIGATIONS

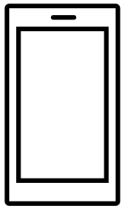
- IDENTIFYING & UNDERSTANDING STAKEHOLDERS



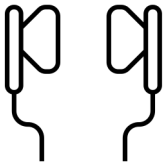


VS.





VS.

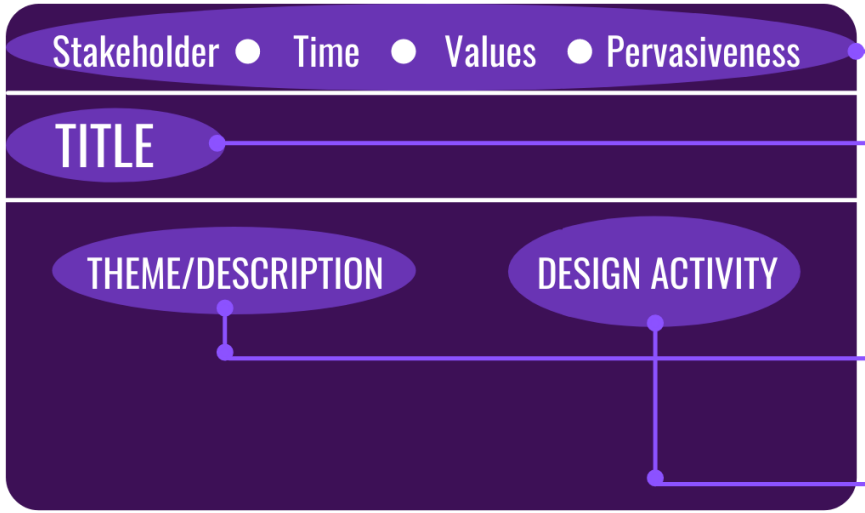


VS.

THIS ALL SOUNDS GREAT BUT NOW WHAT?

ENVISIONING BETTER DESIGN

A TOOLKIT: ENVISIONING CARDS

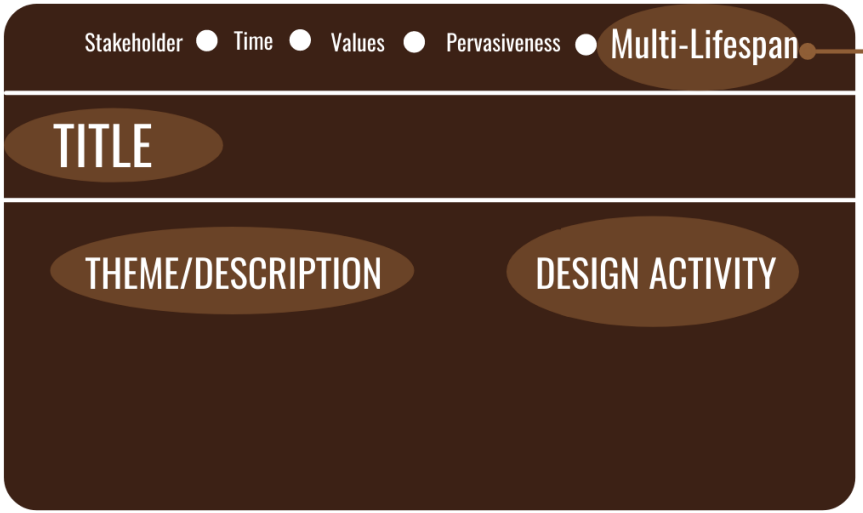


The four **envisioning criteria**: *Stakeholders, Time, Values* and *Pervasiveness*. All aim to raise issues of longterm, systemic issues

Each of the cards has a unique **title** that refers to the specific theme and activity prompt of the card

Each card has a short description or **theme** that helps illustrate and exemplify the importance of the card's criterion

A prompted **design activity** that operationalises the criterion



Supplementary **multi-lifespan** criterion fo
design thinking across multiple
generations