

Investigating the material dimension of ethics

SOCIAL AND ETHICAL IMPLICATIONS OF AI ASSISTED DIGITAL SELF-MONITORING
FOR CARDIOVASCULAR DISEASE



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INTRODUCTION

Quick introduction

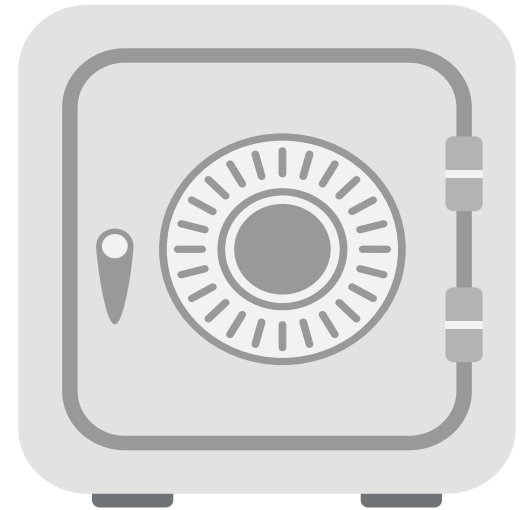
Research consortium

- Cardiologists
- AI & data scientists

Research: use of AI models to predict and prevent Cardiovascular Disease (CVD)

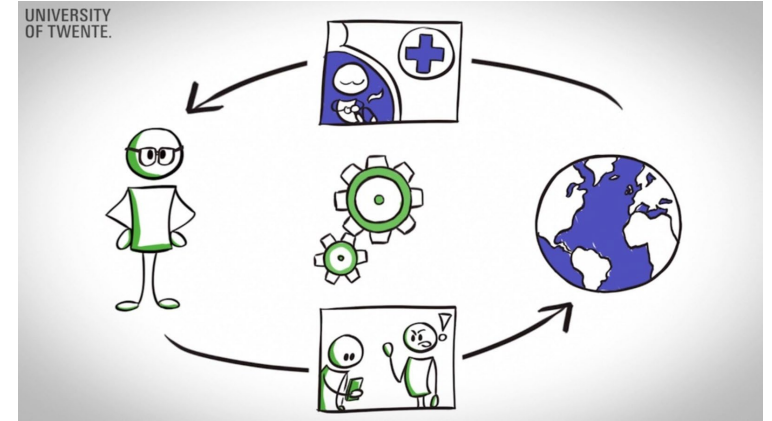
- Personal health platform (PGO)
- Basis for 'MyDigiTwin' app

My research: ethical & societal implications



Mediation theory: a philosophy of technology

1. Technology mediates how we experience the world
2. In turn technology also shapes how we act upon the world (e.g., by steering our actions & influencing our interactions)
3. Designing and creating technologies is one way of doing ethics



<https://ppverbeek.org/mediation-theory/>

But then how could we study this material dimension of the ethics of things?

ABOUT SCRIPTS

Scripts

Creating a technology is like creating a movie or theatre script

1. When designing you're making decisions:

“framework of **action** together with the **actors** and the **space** in which they are supposed to act” (Akrich, 1992, p. 208).

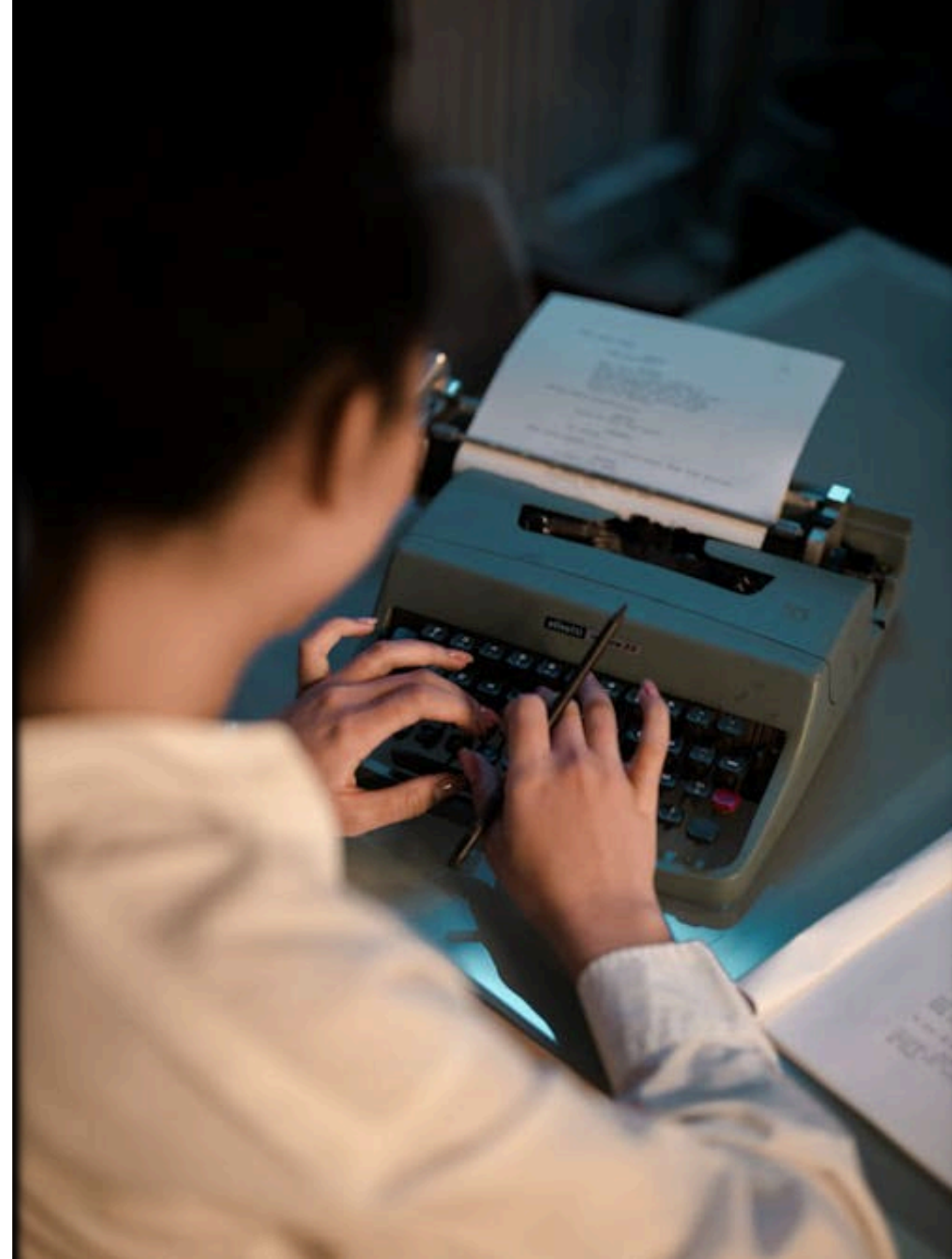
2. Informed by biases & world views of the developers

3. Mismatch between technology-developers and the users' world views and assumed roles

Connecting to mediation theory

1. Look at the design of a technology and how it might steer certain people actions, and people's interactions

2. Look at how people in turn use the technology in their own specific context and setting.



1. Stetting the scene and actors

- Set a scene you describe place, time, actors (human & non-human), what they are doing

ABOUT SCRIPTS

1. Stetting the scene and actors

Setting: where and when

EXT. SHIRE LANE - DAY

(on-human) actors: who

The cart rattles along a leafy lane, driven by a stooped figure in GREY.

INTERCUT WITH: SHOTS OF FRODO RUNNING ... CAREENING DOWN A HILL ... JUMPING OVER LOGS ... DODGING TREE BRANCHES.

ANGLE ON: The shambling OLD PONY snorts and rears as ...

SUDDENLY FRODO appears on the bank above the cart.

FRODO
You're late.

(human) actors: who

CLOSE ON: GANDALF glowers at the young HOBBIT...

GANDALF
A wizard is never late, Frodo Baggins,
nor is he early. He arrives precisely
when he means to.

They look at each other for a moment ... then both start laughing as FRODO'S face breaks into a smile and he leaps on to the front seat of the cart.

FRODO
It's wonderful to see you, Gandalf!

ABOUT SCRIPTS

1. Setting the scene and actors

Technology development:

1. Explicitly
2. Implicitly

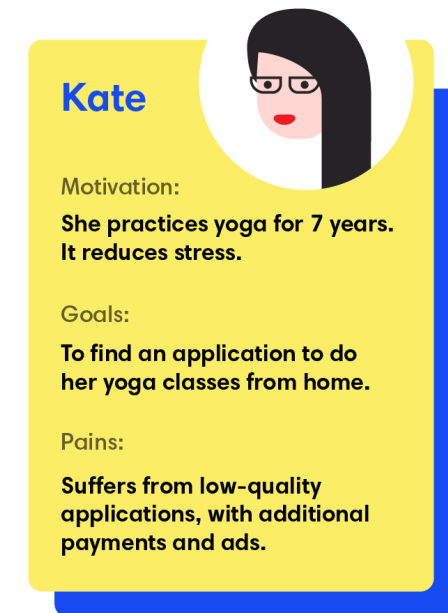


Source: Sara Eldebissy on [Behance](#)

Marketing Persona



UX Persona



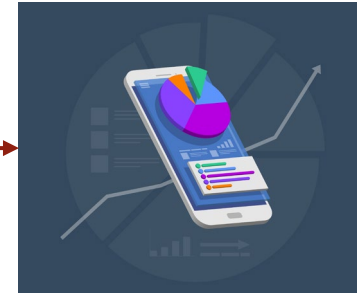
Source: Qubstudio on [qubstudio.com](#)

2. implicit & explicit assumptions

When developing a technology, developers (consciously or unconsciously) make some hypothesis about the world and the users of the technology.



Blood pressure



Risk of a heart attack in the next 10 years



3. Role of user's

- world views technology developers \neq world views of users
- Users are not merely passive agents
- Technology can get a new or different meaning

Movie script: actors can also read a script and give their own spin or meaning to it.

Moment of big drama → moment of shock & realism



<https://www.youtube.com/watch?v=5TQARRckm6U>

Technology development: quantified self movement & self-tracking gadgets (Ha, 2017)

- Create an app self tracking based on medical information, goals and guidelines
- Some users: own goals and guidelines, distrust medical system



Scripts: what has this to do with ethics?

In this process technology developers are:

1. Excluding/including certain people
- What are your (implicit assumptions about people) you have in your technological script?
 - How does this allow different people to reap the benefits?
 - When designing a technology, what values are counting most severely?

Developer making value assessments with imperfect data:

“So are you allowed to save 100 more men from a heart infarct if you loose 3 women because they will not be detected anymore?”
- Priorities highly accuracy vs. equality?



Scripts: what does this have to do with ethics?

In this process technology developers are

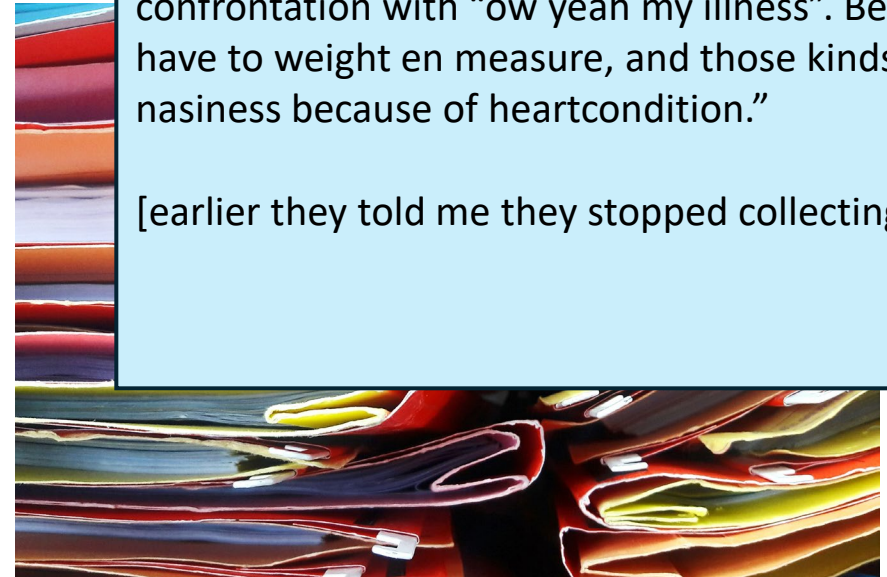
1. Excluding/including certain people
 2. Ascribing certain roles and subsequent responsibility to people
- New roles → new responsibilities
 - New roles & responsibilities → new/changed experiences



Patient's experience of health shifts with the new role of being a data collector:

"(...) with all those hospital equipments in my home, everytime again, in the bathroom there is a confrontation with "ow yeah my illness". Because I have to weight en measure, and those kinds of nasiness because of heartcondition."

[earlier they told me they stopped collecting data]



Scripts: what has this to do with ethics?

In this process technology developers are:

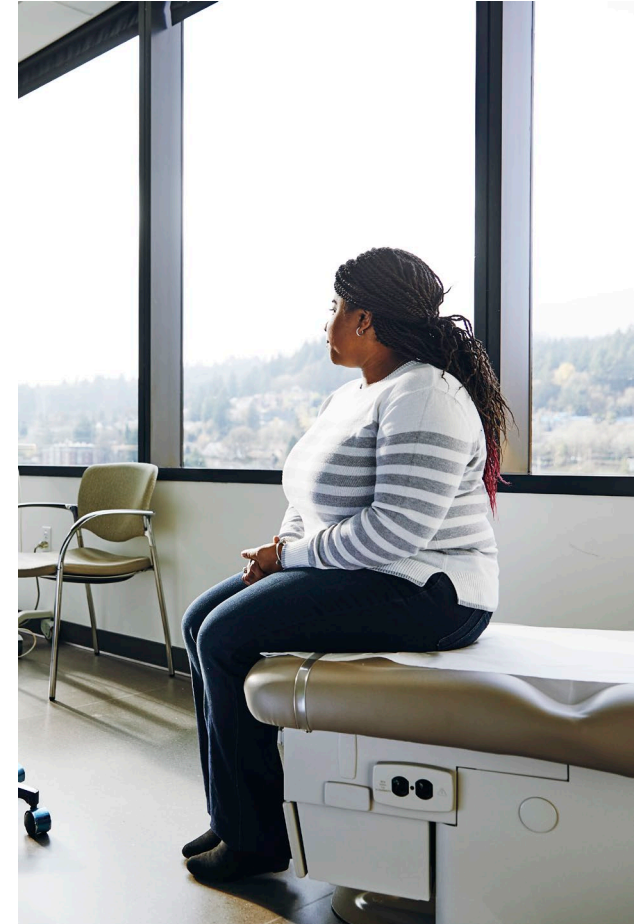
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Developer making value assessments with imperfect data:

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Foot note talking about roles:

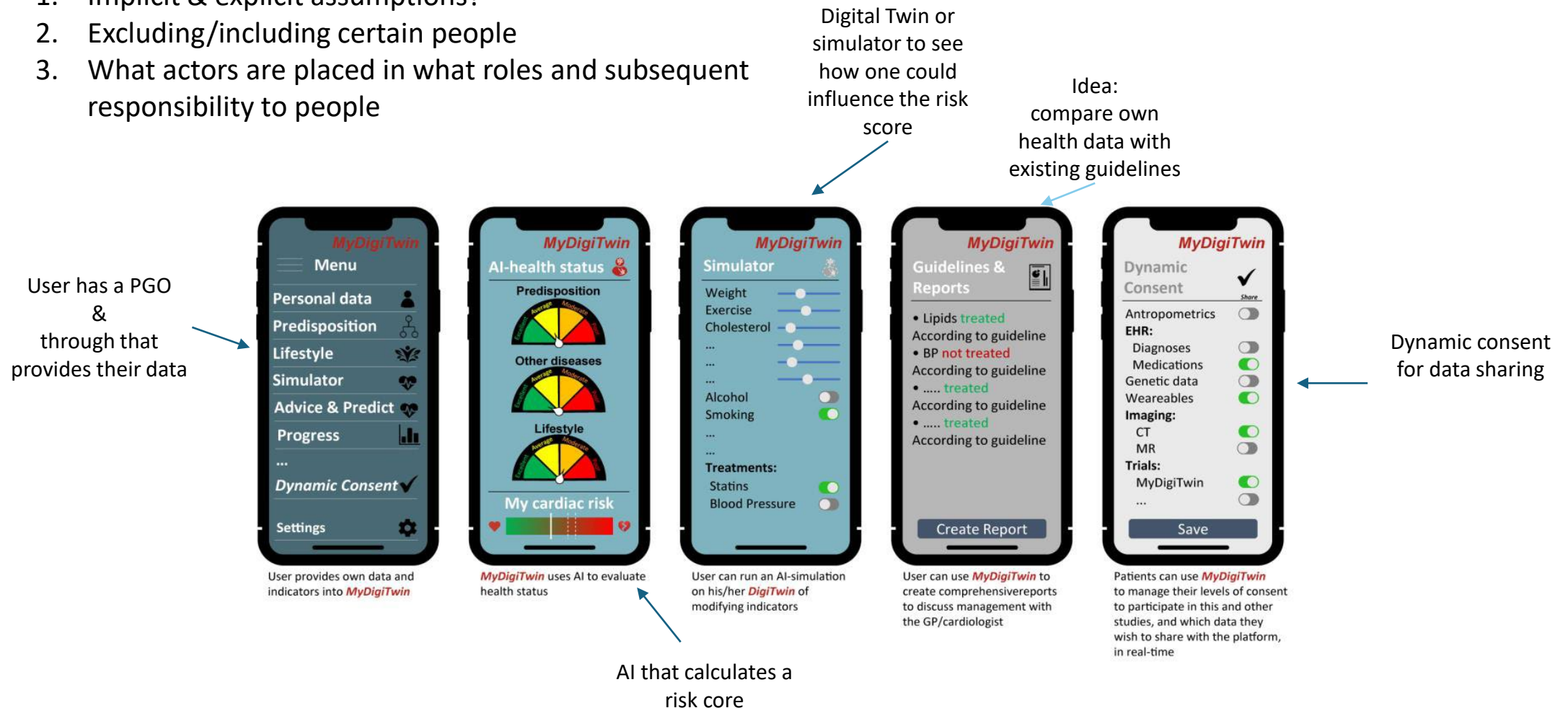
Whose responsibility is it to collect accurate data that is not biased?



EXERCISE

The Scripts Under Development

1. Implicit & explicit assumptions?
2. Excluding/including certain people
3. What actors are placed in what roles and subsequent responsibility to people



Take at home message

When developing a technology developers are writing a script:

“framework of **action** together with the **actors** and the **space** in which they are supposed to act”

- Informed by worldviews and values
- Do not always match that of users

In this process technology developers are

1. Excluding/including certain people
2. Ascribing certain roles and subsequent responsibility to people