Speculation, Magic and Robots

wild techniques for real world problems

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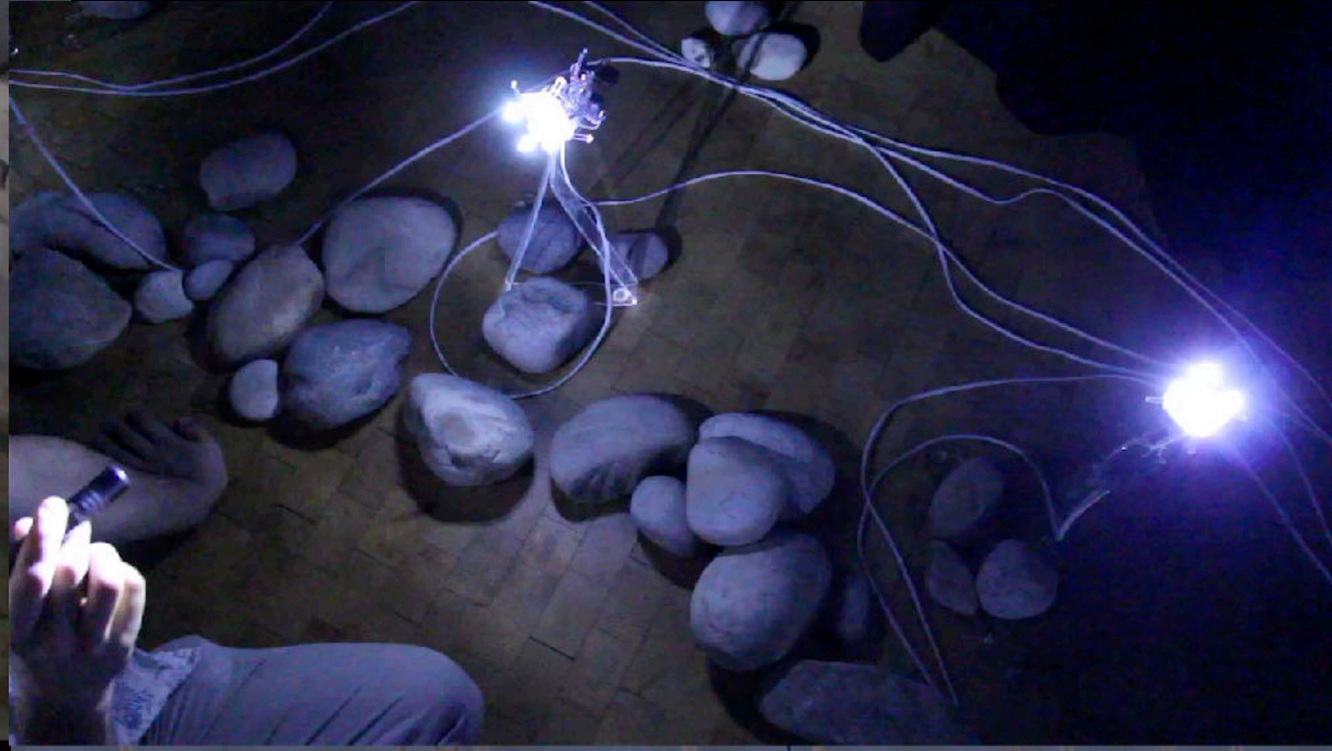
RIGHTS & JUSTICE

Mission

The AI Futures Lab on Rights and Justice uses **relational prototyping** to **radically re-imagine the design and regulation of digital technologies**. We carry out **impact-oriented research** to support **rights and justice around AI** and related technologies through imagining possible futures.

Our research aims to center and support those with less power in their interactions and relations with technology, working towards more **just futures for all**.


Lichtsuchende - NTAA, ZKM




Artificial Otoacoustics - NTAA


Thawing Colours - Talbot Rice Gallery

This talk

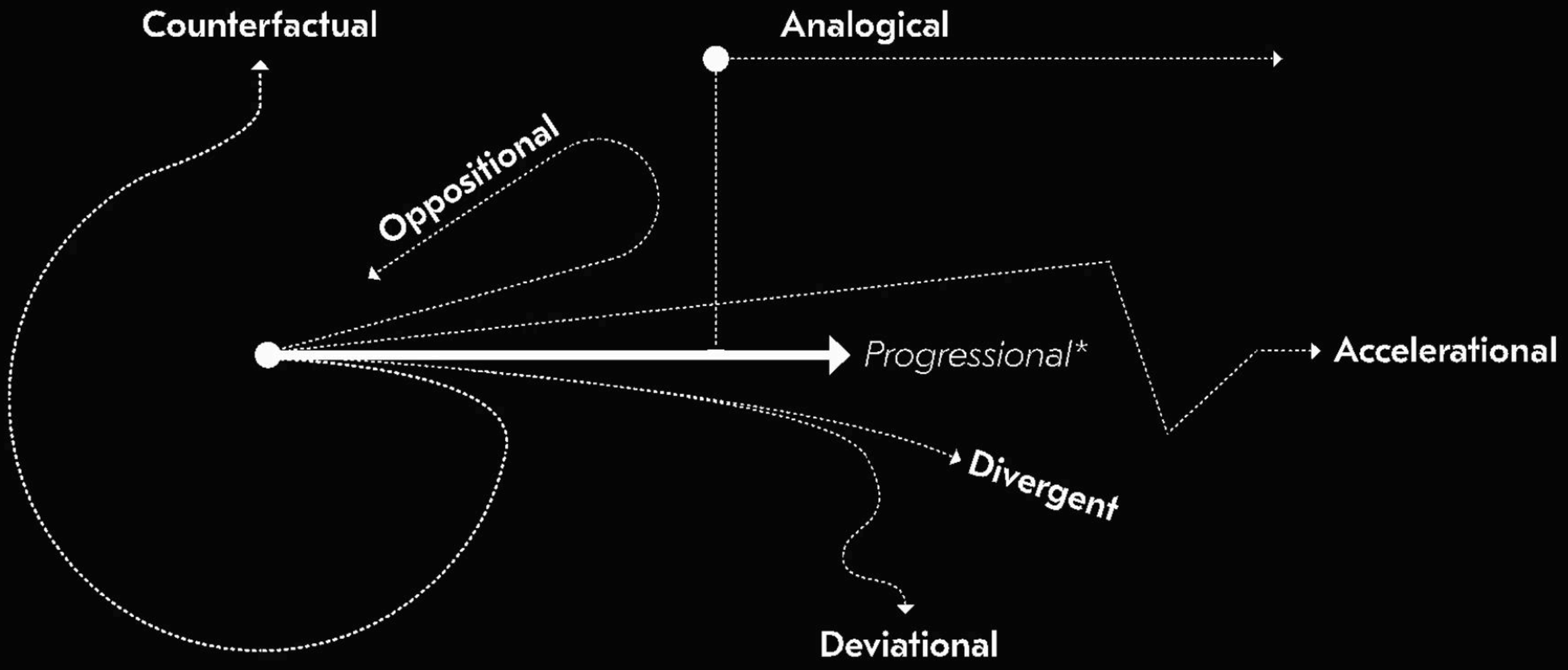
- Unpack what I mean with **relational prototyping**
  - Talking about relationality
  - Talking about prototyping
- Looking at projects that show how this connects to robots and AI
  - Robots (in space!)
  - Artistic practice
  - Future of work
- Enchantment

Relational Prototyping Inspirations

- Speculative Design: using design to explore possible futures
- Research through Design: design as a research method
- Feminist Theory: understanding the power relations in situations
- Socio-Technical Systems thinking
- Socio-legal thinking

5 Frictional Tendencies of Alternative Designs

** And the Progressional Vector They Work in Relation To*



Pierce, J. (2021). In Tension with Progression: Grasping the Frictional Tendencies of Speculative, Critical, and other Alternative Designs. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems, 1–19.

https://www.ideo.com/journal/7-principles-to-guide-your-prototyping

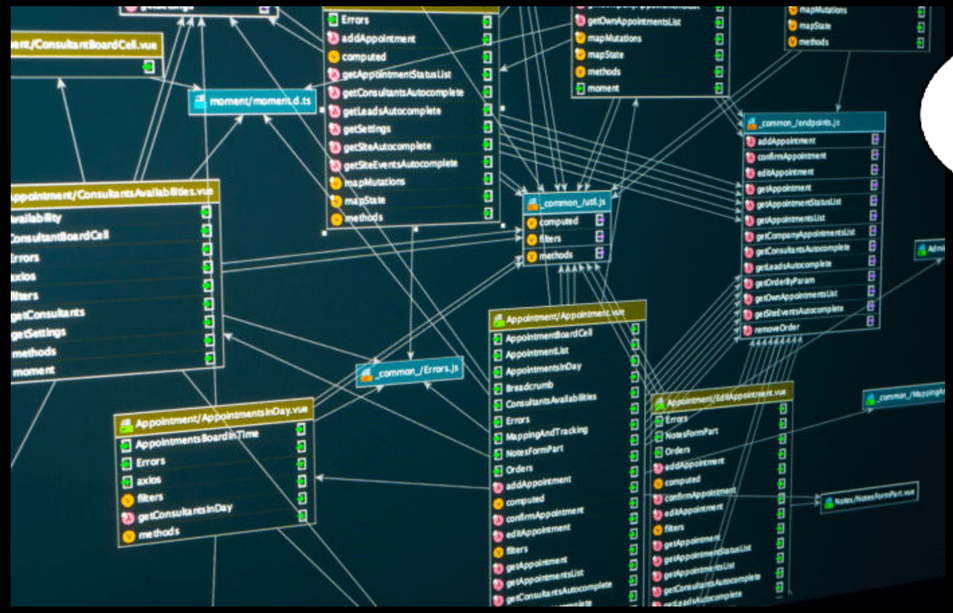
Prototyping

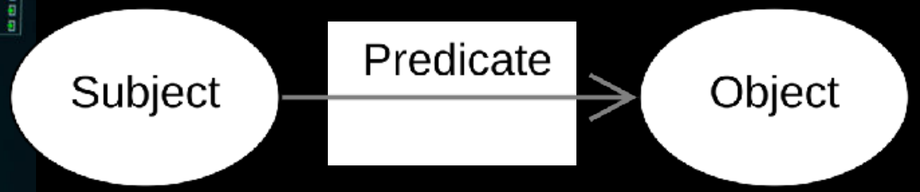
- “things we make to find things out” (Stappers, 2013)
- **Prototypes Confront Theories**: you cannot hide in abstractions; embodiment for a hypothesis
- **Confronting the World**: making the prototype requires a concrete instantiation - many details are just not discussed in the experimental literature
- **Evoking Discussion and Reflection**: speak to the imagination and allow other people to engage
- **Changing the world**: Embodies a possible future and allows this to be explored.

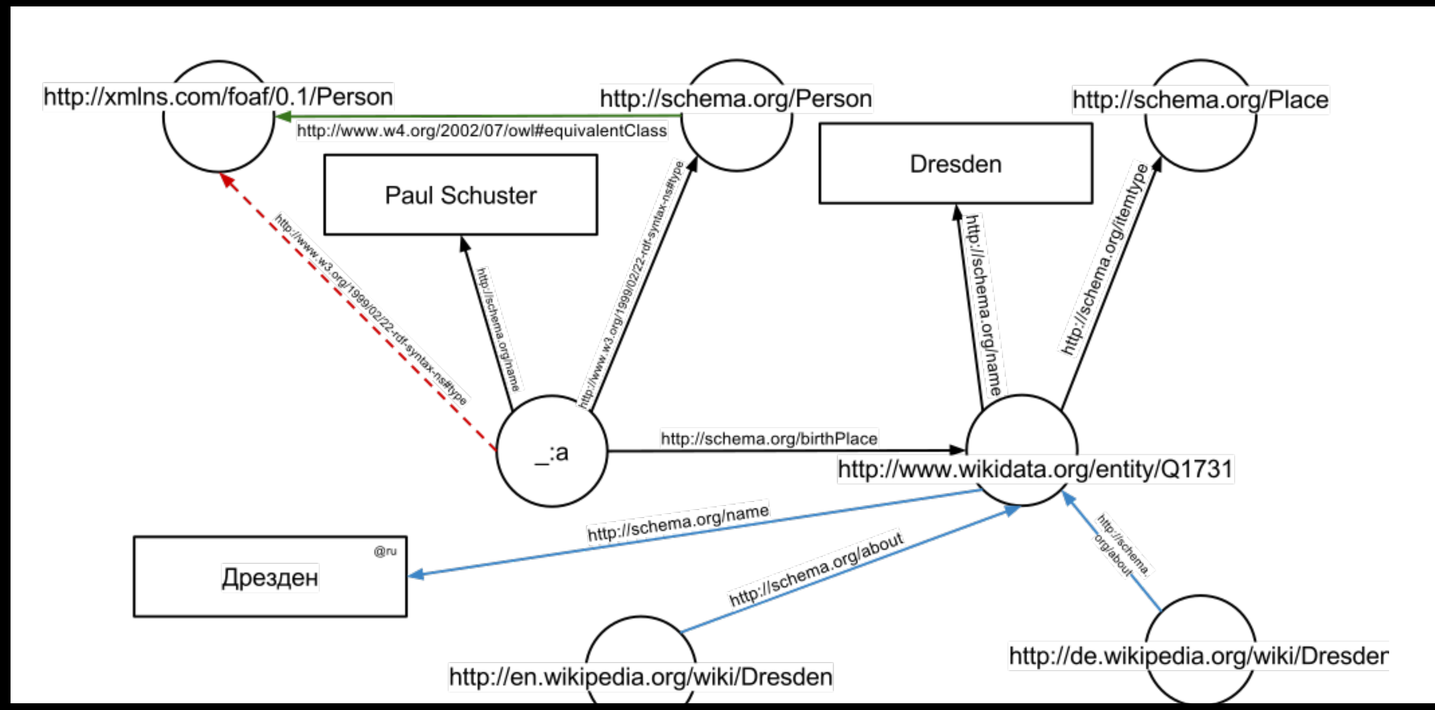
Relationality

- the relations between things are as important as the things themselves
- “transactions, interactions, social ties and conversations constitute the central stuff of social life” *(Tilly and Donati)*
- “understanding the self as co-generated in interactions and relations with others” *(Kyselo, M. (2014). The body social: An enactive approach to the self.)*
- “the relationship comes first—in both temporal sequence and status and it takes precedence over the individual relata." *(Barad, rephrased by Gunkel)*

Relationality in computer science

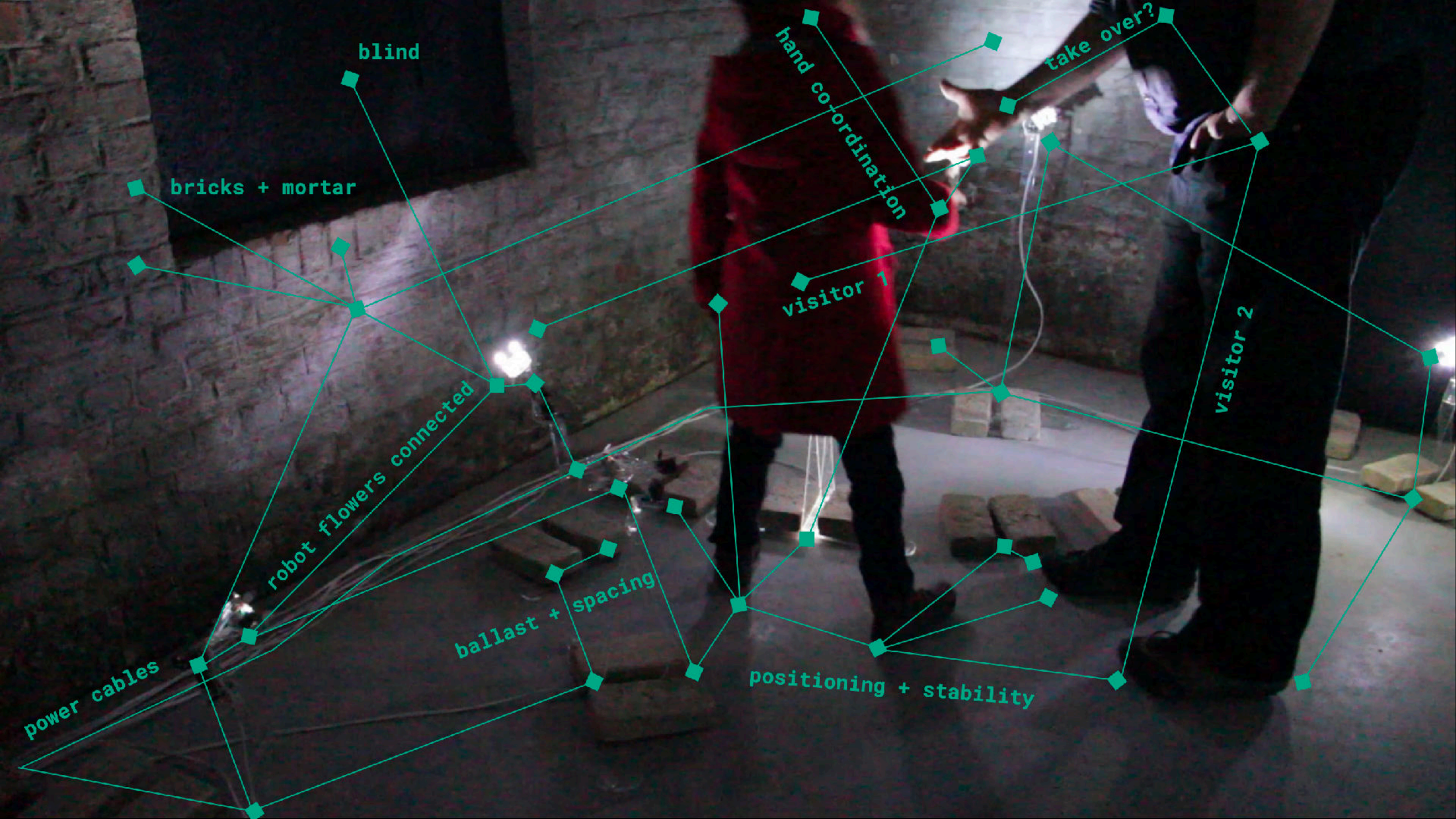






Implications of relational thinking

- Boundaries between humans and things are a bit blurrier
- Question is less what is the thing, and more how do we relate to it
  - e.g. with robots, less worries about whether they are conscious, more about how humans approach them
- Relations are constructed through doing them, not intrinsic properties of stuff


blind
bricks + mortar
hand co-ordination
take over?
visitor 1
visitor 2
robot flowers connected
ballast + spacing
power cables
positioning + stability

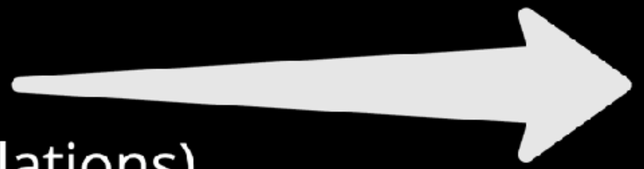
Relations

- Power
- Care
- Ownership
- Visibility
- Respect

Relational Prototyping

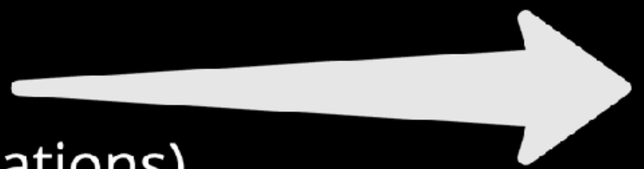
Identify
(current relations)

Discover, elicit, ...



Rethink
(future relations)

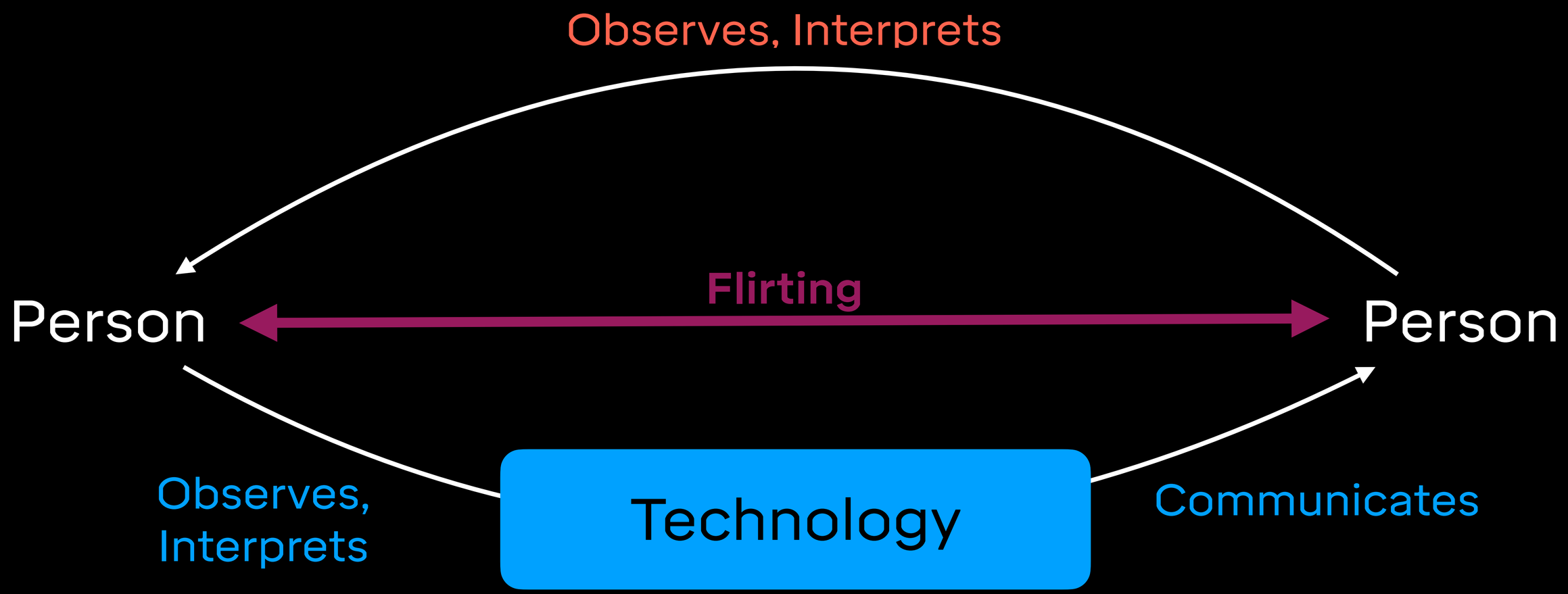
Speculate,
problematise,



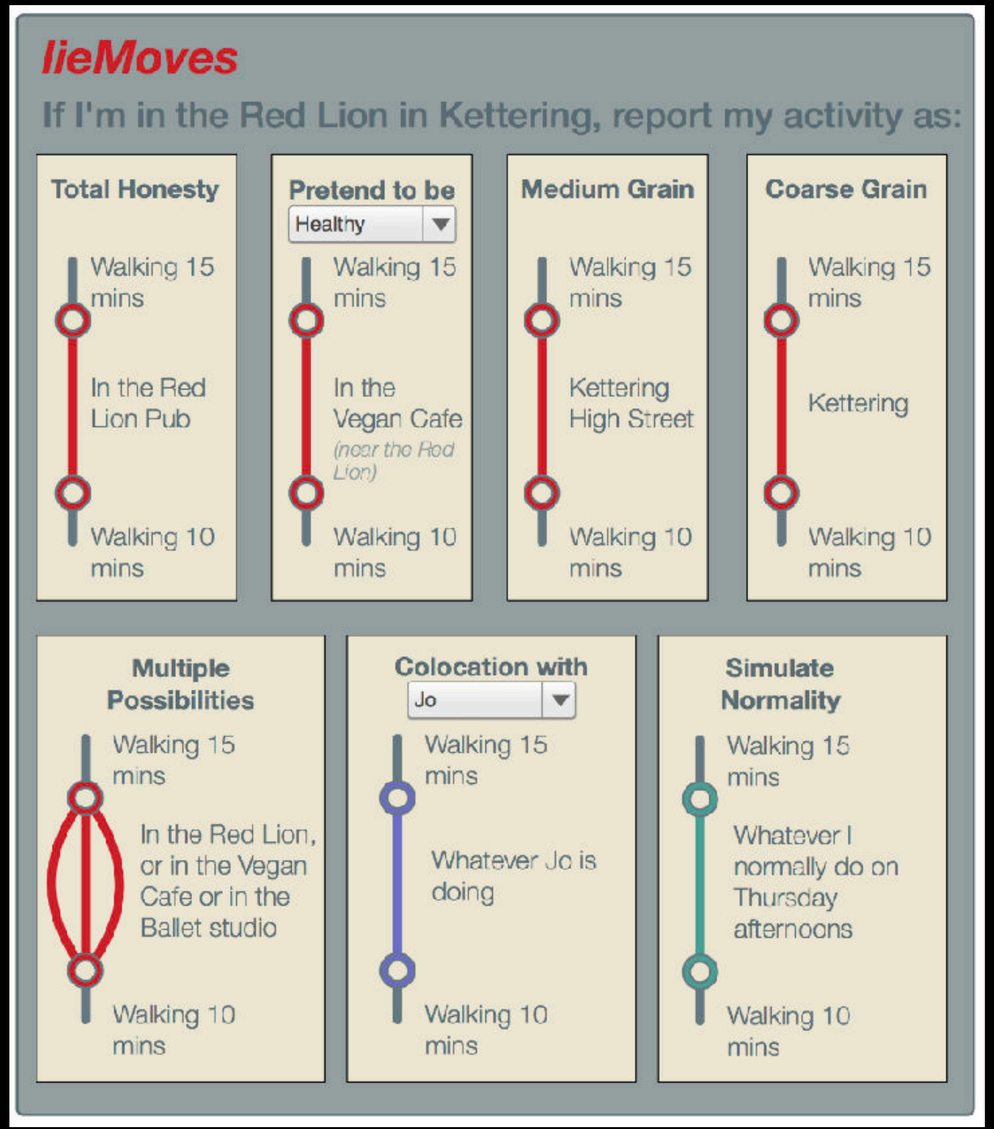
Manifest
(new relations)

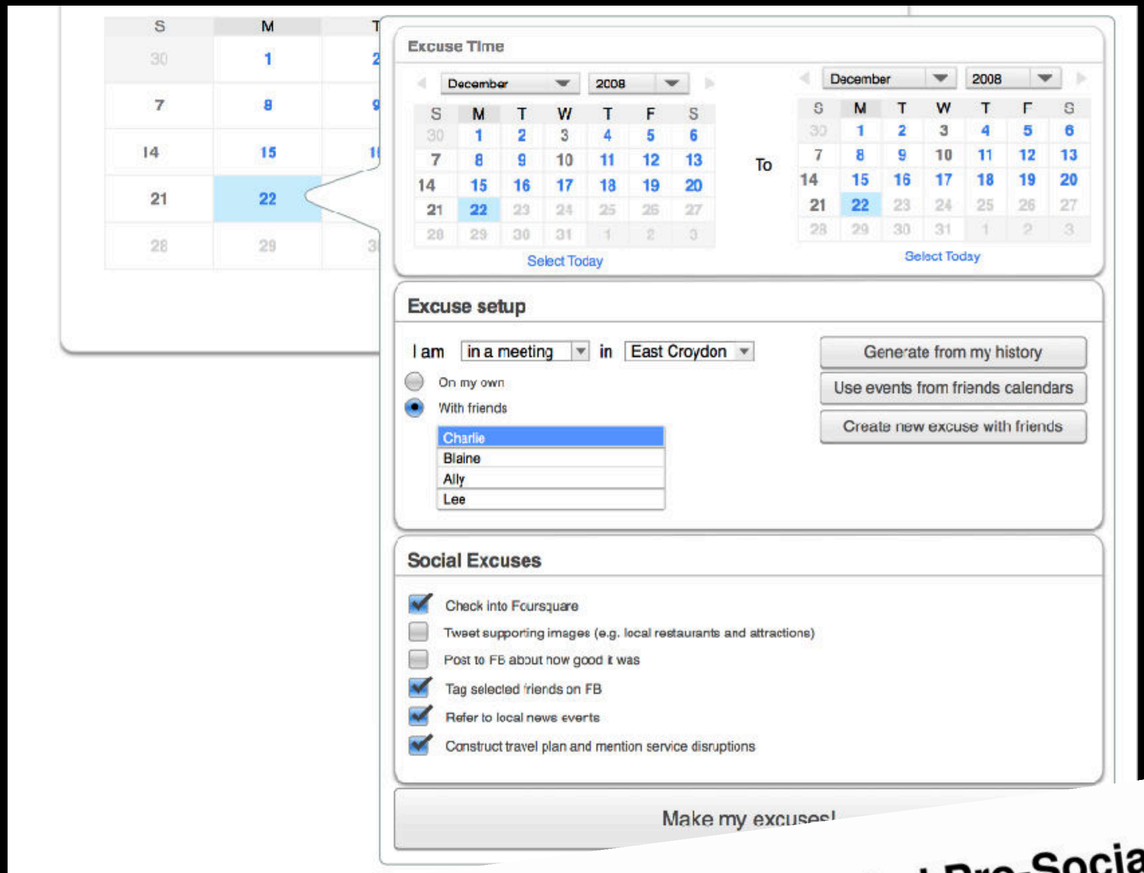
Materialise,
prototype, advise,
regulate

BLEye - A project by Alexandra, Charlotte, Thomas & Mirte ITD2021


Observes, Interprets
Person
Flirting
Person
Observes,
Interprets
Technology
Communicates

Thinking new relations





Computationally Mediated Pro-Social Deception

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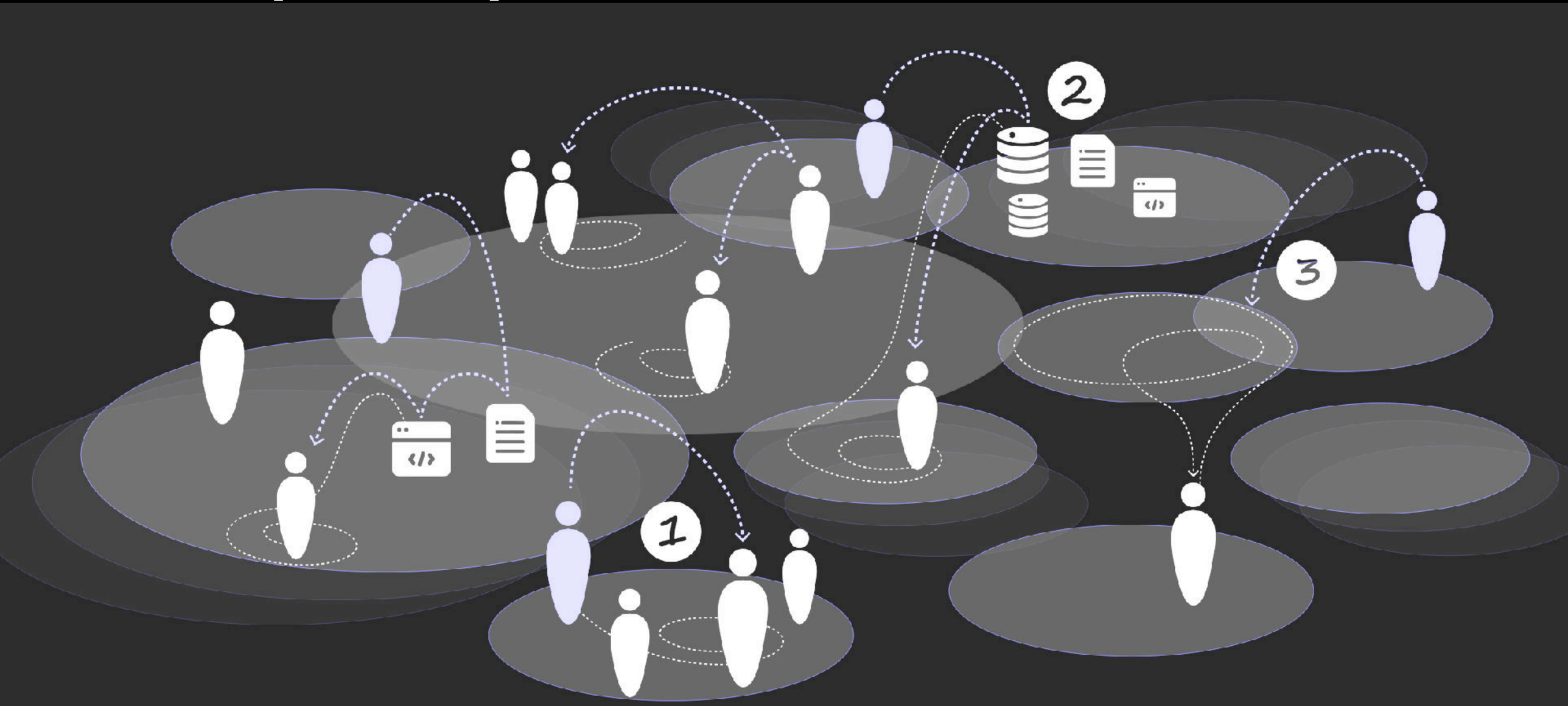
Visibility Ecosystems



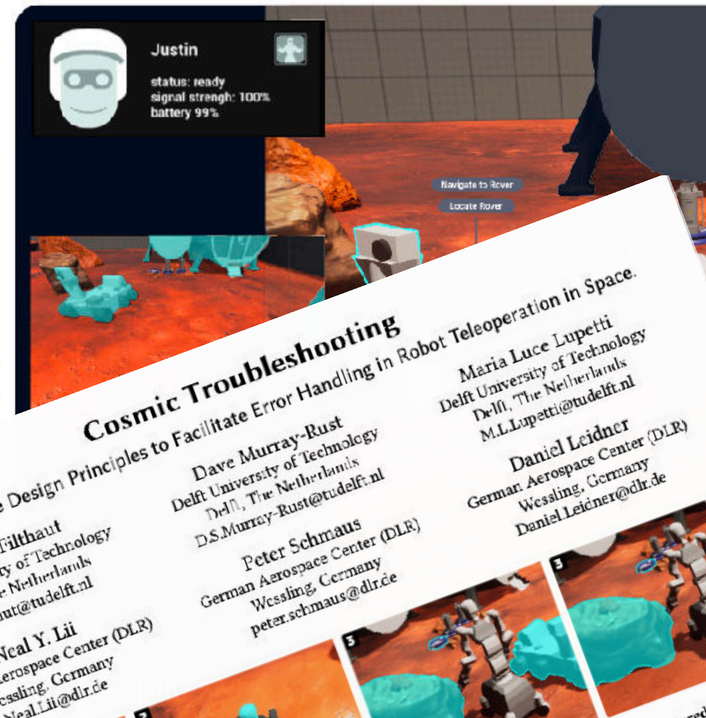
Mahan Mehrvarz, Dave Murray-Rust, Himanshu Verma and Ben Wagner, **Framing the (in)visible: Insights into Visibility Practices of Remote Knowledge Workersn**(CHIWORK 2025)

Cosmic Troubleshooting - Robots exploring Mars

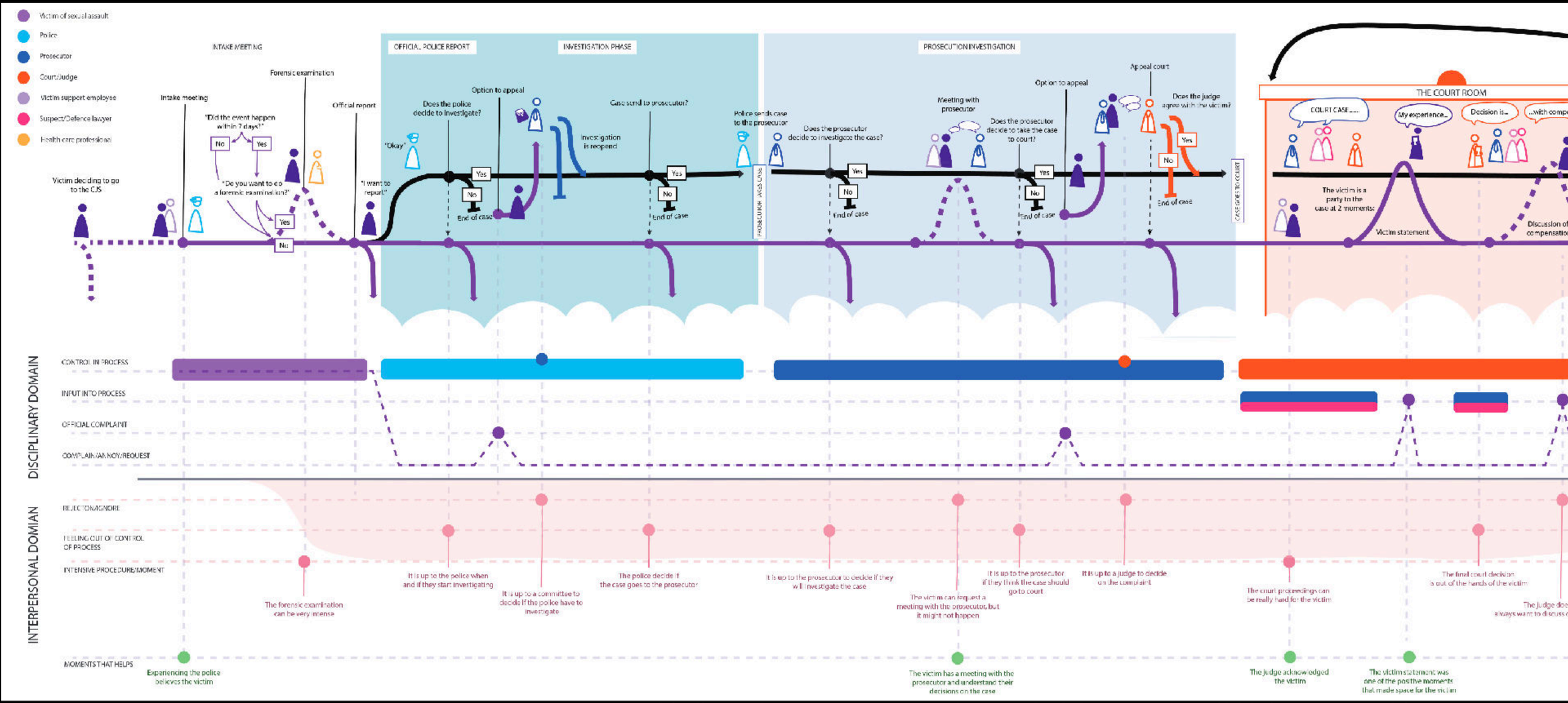
- Cognitive robots - lots of ‘AI’ - planning, pathfinding, manipulation
- Big communication delays
- Confusing limits to robot intelligence
- How to negotiate boundaries of agency between astronauts and robots?

awareness of system limitations

intuitive and effective interaction



Power/Journey Mapping



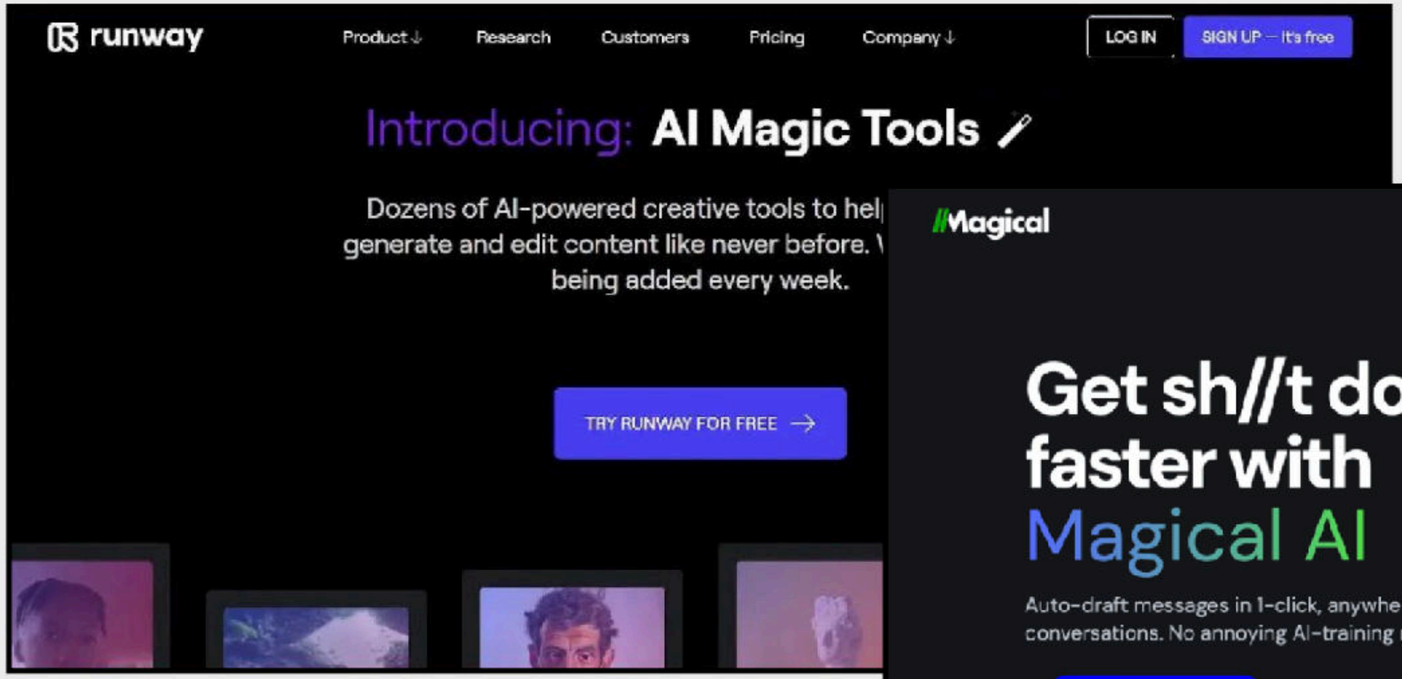
Dideriksen, S., Murray-Rust, D., Visser, F. S., & Stappers, P. J. (2026). En route without a steering wheel — a victim-centred mapping of power in the criminal justice system. Legal Design Journal.

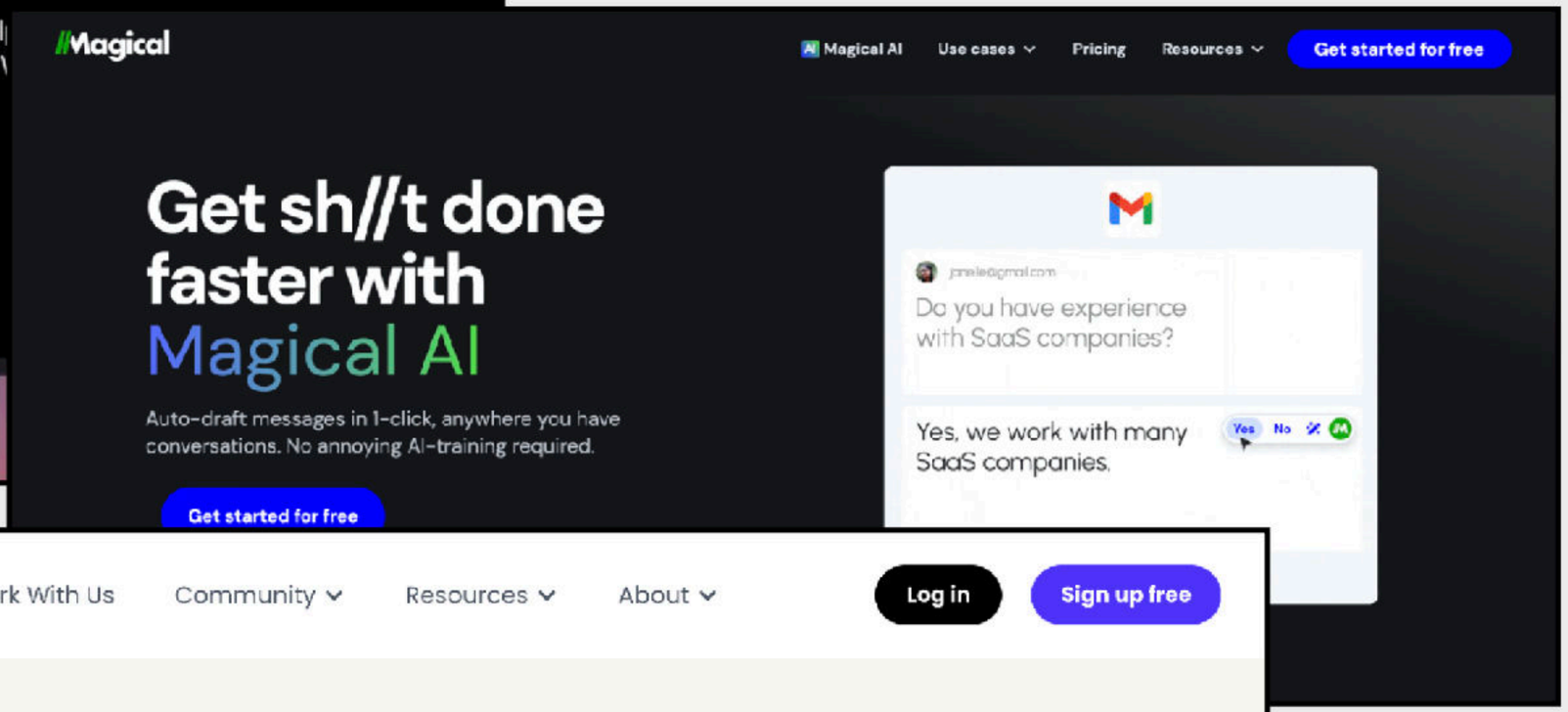
Enchantment and AI

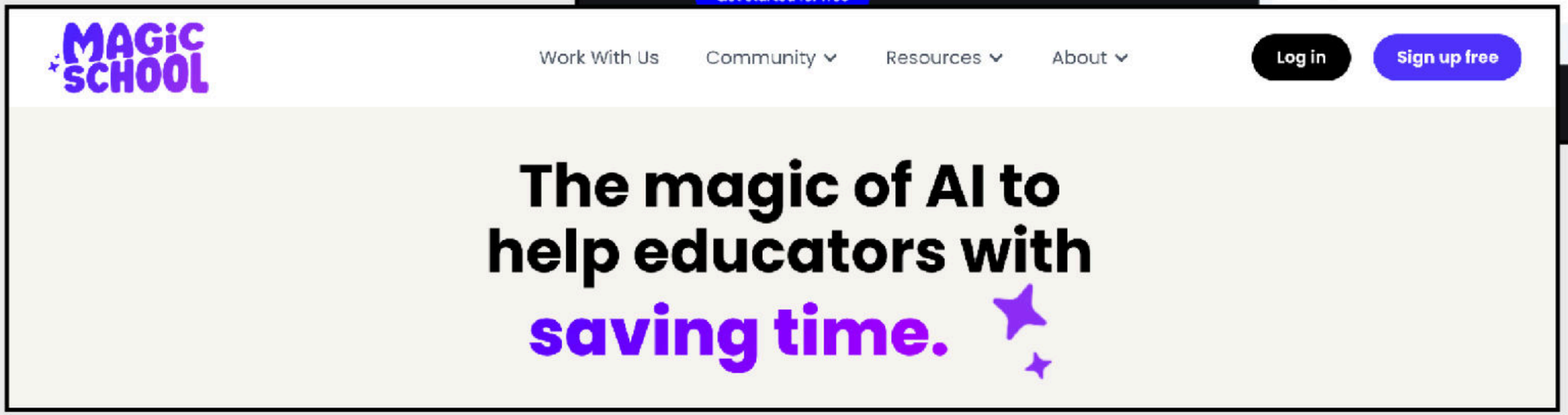
The new AI can write and talk! It can draw, do fake photos and even make video! It even has AI folklore. Authentic little myths. Legendry.

- Bruce Sterling

Maria Luce Lupetti & Dave Murray-Rust


runway
Product
Research
Customers
Pricing
Company
LOG IN
SIGN UP — It's free
Introducing: AI Magic Tools
Dozens of AI-powered creative tools to hel
generate and edit content like never before.
being added every week.
TRY RUNWAY FOR FREE


Magical
Magical AI
Use cases
Pricing
Resources
Get started for free
Get sh//t done faster with Magical AI
Auto-draft messages in 1-click, anywhere you have conversations. No annoying AI-training required.
Get started for free
Do you have experience with SaaS companies?
Yes, we work with many SaaS companies.


MAGIC SCHOOL
Work With Us
Community
Resources
About
Log in
Sign up free
The magic of AI to help educators with saving time.

Perils of Enchantment

Working in this magical domain allows designers to focus on mastery of the illusions that they create … but this also minimizes concern for the consequences they cause

enchantment becomes a mechanism for masking exploitative work ethics, power struggles, and dramatic environmental impacts

Campolo, A., & Crawford, K. (2020). **Enchanted determinism: Power without responsibility in artificial intelligence**. Engaging Science, Technology, and Society.

Magic Metaphors:
builds on Harry Potter's concept of deluminator: a magical lighter-like device that is used to absorb as well as return light from any light source to provide cover to the user

Figure 11: *LUMI*: embodying light energy through the magic metaphor of an enchanted lantern.

Figure 10: *Under the Loop*: citizen participation in placemaking using a magic magnifying glass to collect data and opinions

Stage Magic:
Of all this technical functioning, the user only perceives the presence of the microphone and interacts with a button.

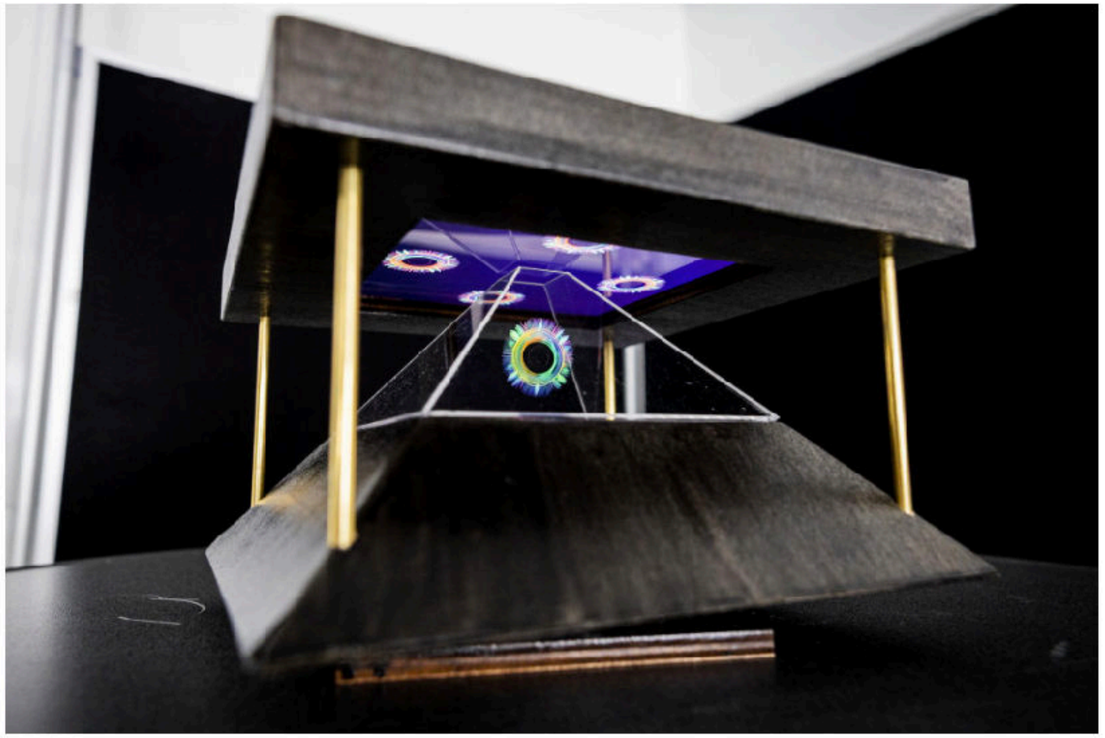


Figure 12: *Reframe your Thought*: generative AI techniques that create the illusion of a superintelligent being assisting in therapy.

Summoning Supernatural Entities:
The underlying assumption is that AI is capable of understanding what human struggles are and what better alternatives there could be.

Materialise Beliefs:
Makes evident how using AI capabilities for generating personalized content can easily turn into an instrument of power.

Figure 13: *Colored Realities*: a dynamic digital newspaper generated by large language models that allow users to control the political leanings and writing style of the text of any given news item.

Manifest Mechanisms:
embodies the hidden mechanisms at play when we interact with AI-powered products that heavily leverage user profiling and provide info and recommendations based on hidden parameters

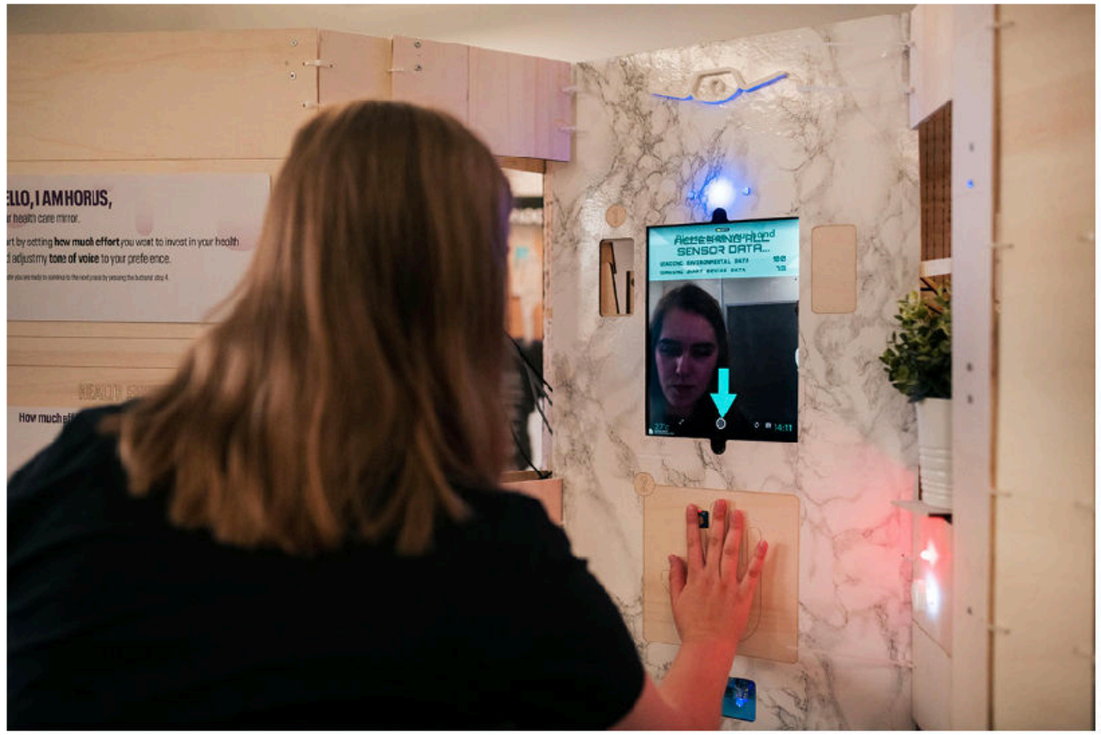
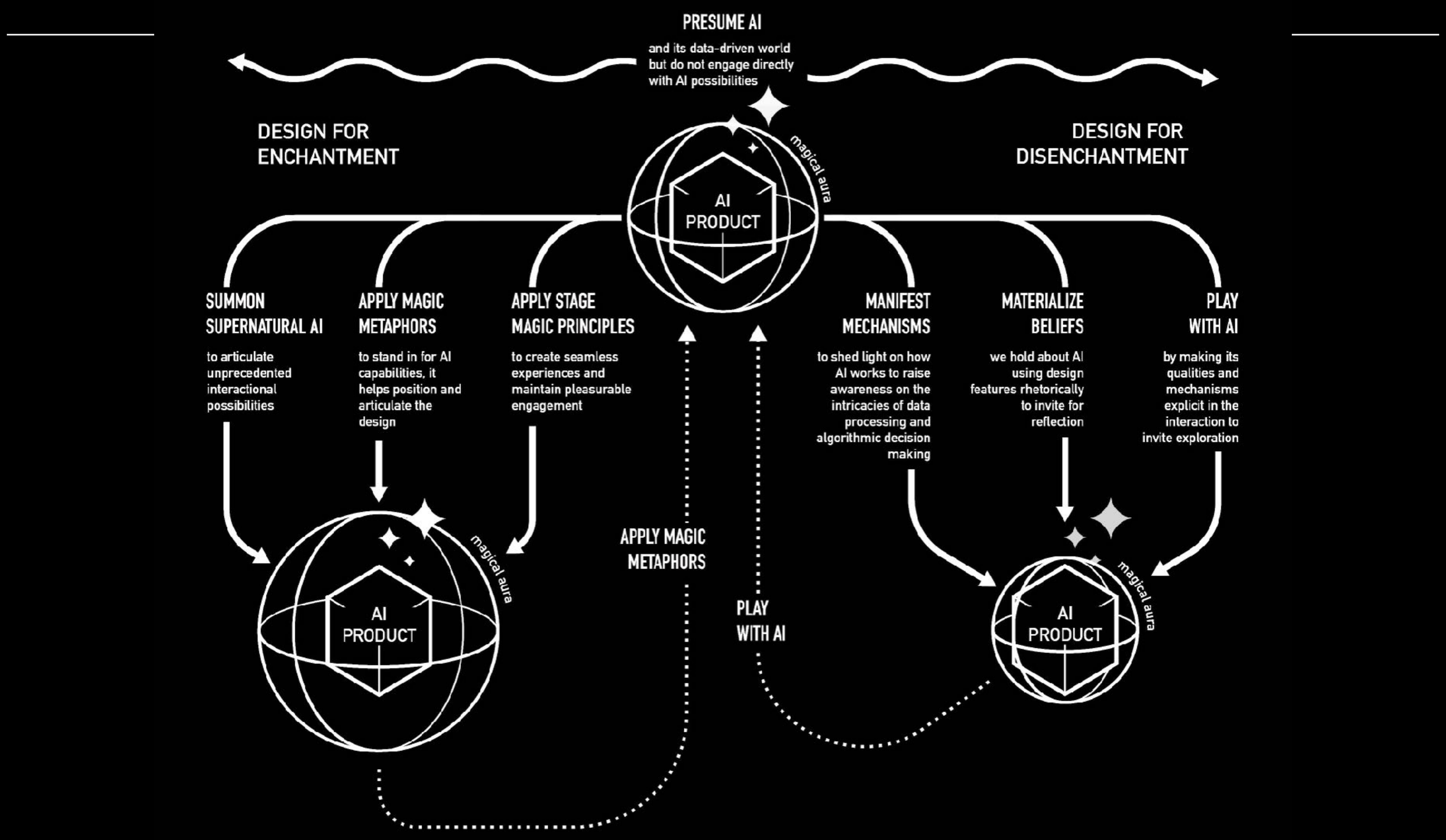


Figure 14: ***A Closer Look*****: a critical exploration of AI data collection and personal wellbeing, manifesting surveillance capitalism through a magic mirror, that invites visitors to play the role of either a client or the invisible data architectures that supply them with pharmaceuticals.**

Figure 15: ***Future Dialogue*****: playful control of small home appliances through training on personal vocal languages.**

Play with AI:
Disenchants the users who grasp the hidden workings of AI, yet, at the same time also invites the user to suspend their disbelief and "play along"


PRESUME AI
and its data-driven world but do not engage directly with AI possibilities
DESIGN FOR ENCHANTMENT
DESIGN FOR DISENCHANTMENT
AI PRODUCT
magical aura
SUMMON SUPERNATURAL AI
to articulate unprecedented interactional possibilities
APPLY MAGIC METAPHORS
to stand in for AI capabilities, it helps position and articulate the design
APPLY STAGE MAGIC PRINCIPLES
to create seamless experiences and maintain pleasurable engagement
MANIFEST MECHANISMS
to shed light on how AI works to raise awareness on the intricacies of data processing and algorithmic decision making
MATERIALIZE BELIEFS
we hold about AI using design features rhetorically to invite for reflection
PLAY WITH AI
by making its qualities and mechanisms explicit in the interaction to invite exploration
APPLY MAGIC METAPHORS
PLAY WITH AI

What if and why?

Principle	What if...
Presume AI	...product X would implicitly leverage an AI infrastructure?
Summon Supernatural AI	...product X would have supernatural AI capabilities?
Apply Magic Metaphors	...product X would embed AI looking and behaving as Y?
Apply Stage Magic Principle	...product X would use AI as a magic trick?
Manifest Mechanism	...product X would declare the AI mechanisms embedded into it?
Materialize Beliefs	...product X would manifest designers' or users' beliefs about AI?
Play with AI	...product X would invite users to play with AI?

Principle	Why...
Presume AI	...would a product X implicitly leverage an AI infrastructure?
Summon Supernatural AI	...would a product X have supernatural AI capabilities?
Apply Magic Metaphors	...would a product X embed AI looking and behaving as Y?
Apply Stage Magic Principle	...would a product X use AI as a magic trick?
Manifest Mechanism	...would a product X declare the AI mechanisms embedded into it?
Materialize Beliefs	...would a product X manifest designers' or users' beliefs about AI?
Play with AI	...would a product X invite users to play with AI?

Metaphors and AI

- Metaphors can
  - Explain
  - Persuade
  - Speculate
- … and with language models, they become part of ‘programming’

Artificial Intelligence and other Speculative Metaphors

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Abstract

to the probabilistic imitations of human communication [9]. Th
science fiction author Ted Chiang, discussed AI as “a blurry JPEG
the Web” [29], implying lossy compression that distorts fine de
Hicks *et al.* [60] suggested an even more provocative metap
when they described ChatGPT outputs as “bullshit”, using a
logical taxonomy distinguishing between “hard bullshit”, int
to deceive, and “soft bullshit”, aiming at general plausibilit
Such metaphors can help us think and talk about what A
what it is *not*. Some are *persuasive*, in that they frame
view of AI while aiming to influence others. Man
in that they relate to technical features
ful or poetic. Phil Agre discussed
they readily assimilate a
listic parrot cen
tical

Model *as* a collection of examples

- **Form**: instead of thinking of a model as a magic black box, think of it as a way to represent all the examples it has been provided
- **Centres**:
  - Data - things from the world are contained in the model
    - Sometimes literally true - the vectors in a support vector machine are the examples that define the boundary (Veale et al., 2018)
    - Choice of data is critical
  - Limitations: models see things in terms of the inputs that they have received
- **Marginalises**: the way a particular model works
- **Design implications**: cases over magic bullets; diffraction around examples and lives

Clockwise from top left: Anna Ridler - Myriad (Tulips), Memo Akten - Learning to see, Jake Elwes - ML Porn, Jake Elwes - Zizi

Metaphors

- Metaphors are personas for relations
- Shape the way we think about technology
- Change over time - ‘metaphorical dynamics’

- … and are great fun to play with


DRS BOSTON 2024 JUNE 24 — 28

Metaphor Gardening: Experiential engagements for designing AI interactions

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https://doi.org/10.21606/drs.2024.376

1. KEEP AN EYE ON BLOSSOMING METAPHORS

Some metaphors are intentional, some accidental, some linguistic, some visual. Notice what is present, at various scales and modes of explanation, and how they relate.

2. UNDERSTAND METAPHORS' ECOLOGY

Do the metaphors touch the surface, behaviour or systemic aspects [25] of the work? Do they give ideas about the shape and form, or the affordances or do they speak of the relations to be engendered?

3. SEE WHAT SUITS THE SOIL

Weed out the metaphors that are tangling the design; look for the needy metaphors, that require lots of cognitive fertilisation to keep growing and pick them out. Keep the ones that give back to the soil, that grow while nourishing the rest of the ecology as well.

4. LET METAPHORS BE SEASONAL

Different metaphors may help at different stages: an explanatory metaphor for understanding the system may not translate to the final design. Relational metaphors may need to be discarded after they have done their work, and a new conception at the end of a process might be the necessary bridge to pull everything together.

5. EXPERIMENT WIDELY AND BOLDLY

As crops may need variation and rest, semantic understanding benefits from experimenting with a multitude of surreal, silly, uncomfortable, irreverent metaphors. These can be generative of new possibilities and lead towards creative divergent thinking, but also be convergent at the same time.

A METAPHOR GARDENING MANIFESTO

(by way of overwrought metaphor)

Prefiguration through AI

Prefiguration activates the imagination and triggers future-oriented thinking, a capacity whose use extends well beyond actualizing said imagined future.

Pierce, J. (2021). In Tension with Progression: Grasping the Frictional Tendencies of Speculative, Critical, and other Alternative Designs. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems, 1—19.

Wrapping up

- *Relational* questions are as important as functional ones
- *Prototyping* is not just about making better stuff, it’s a way of thinking through doing
- We can understand technology through particular relations: power, visibility, care
- Relational concepts like boundary of agency, enchantment, metaphors
- Developing a critical imagination is key to building positive futures

Thanks for listening!

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