



Faculty of Design

2021

## Metaphors and Systems

Lockton, Dan

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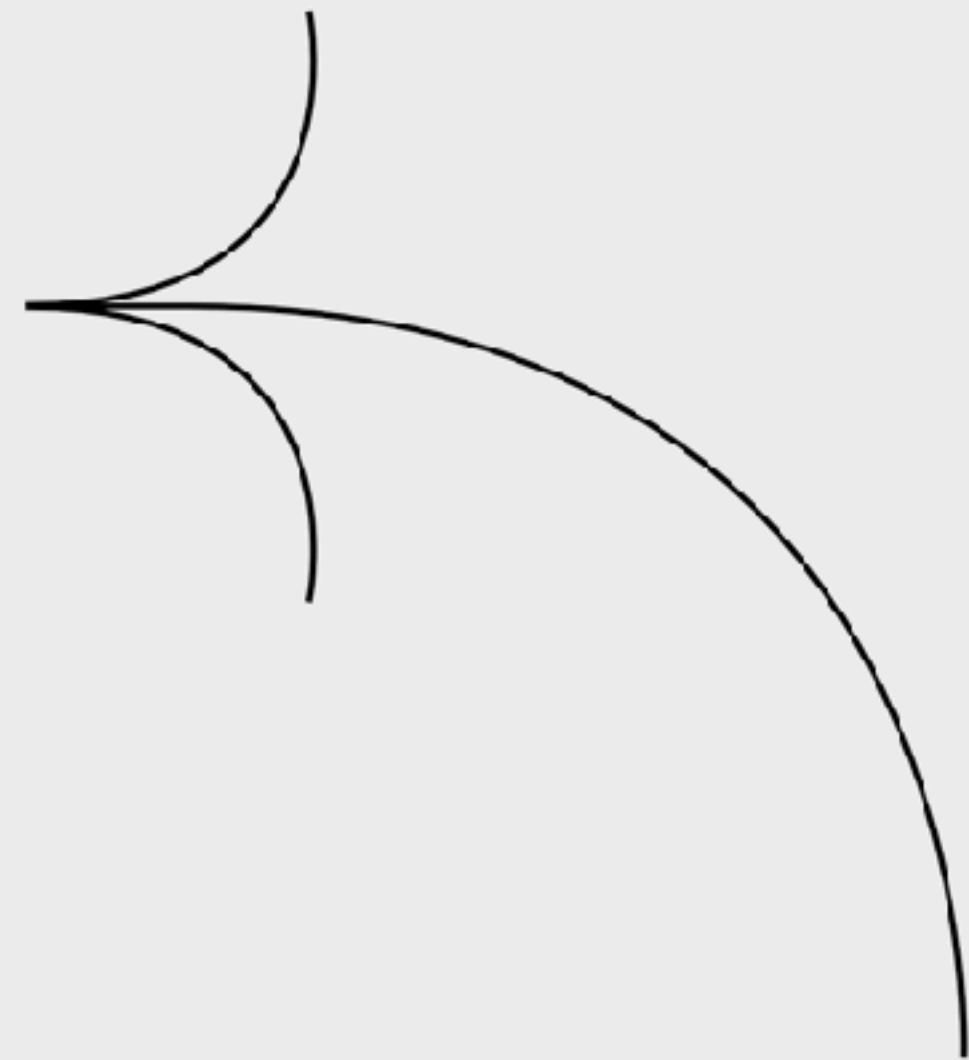
# Metaphors & Systems

**Dan Lockton**  
Assistant Professor,  
TU Eindhoven, Netherlands

imaginariés  
lab

TU/e

## Activities



## About

- Presentation
- Mission
- Trajectory
- Activities
- Partners
- Organisation (...)
- Become a member
- Support us
- Legal (...)
- Contact (...)

[plurality-university.org](https://www.plurality-university.org)

en / fr

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# The Plurality University Network

( U+ ) is a global, open organization that connects artists, designers, utopians and activists who use the power of imagination to enable alternative futures.





**Eindhoven  
University of  
Technology  
Eindhoven,  
NL  
2021-?**



**Carnegie  
Mellon  
University  
Pittsburgh,  
PA  
2016–20**

**Royal College  
of Art  
London  
2013–2016**



**Brunel  
University  
London  
2007–2012**



# imaginaries lab

We're a design research studio creating tools to support people's imagining—  
new ways to understand, and new ways to live. →

imaginari.es

Welcome to the Imaginaries Lab



Spooky Technology: Frank-Ratchye Fund for Art  
@ the Frontier

reflection on the invisible  
and otherworldly qualities in  
everyday technologies



UNTITLED Festival, 23–24 September (online):  
Heat Resilient Cities Conference, Berlin 2039  
— Juli Sikorska, Francesca Desmarais, and Dan  
Lockton



Urban Climate Futuring (in-person) workshop:  
Berlin-Neukölln 2039: 18 September, led by Juli  
Sikorska with Dan Lockton



New Metaphors

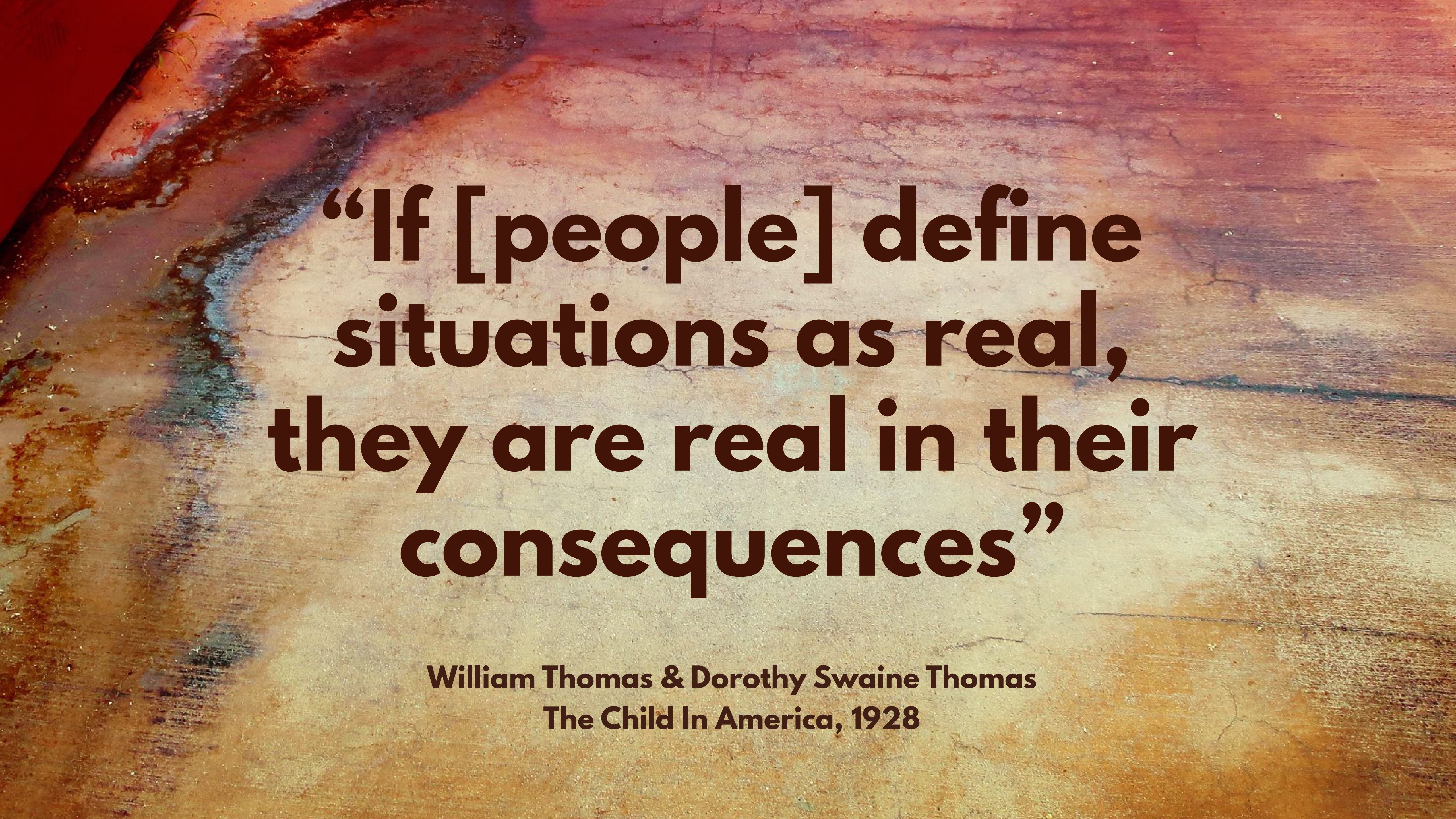


Design with Intent toolkit



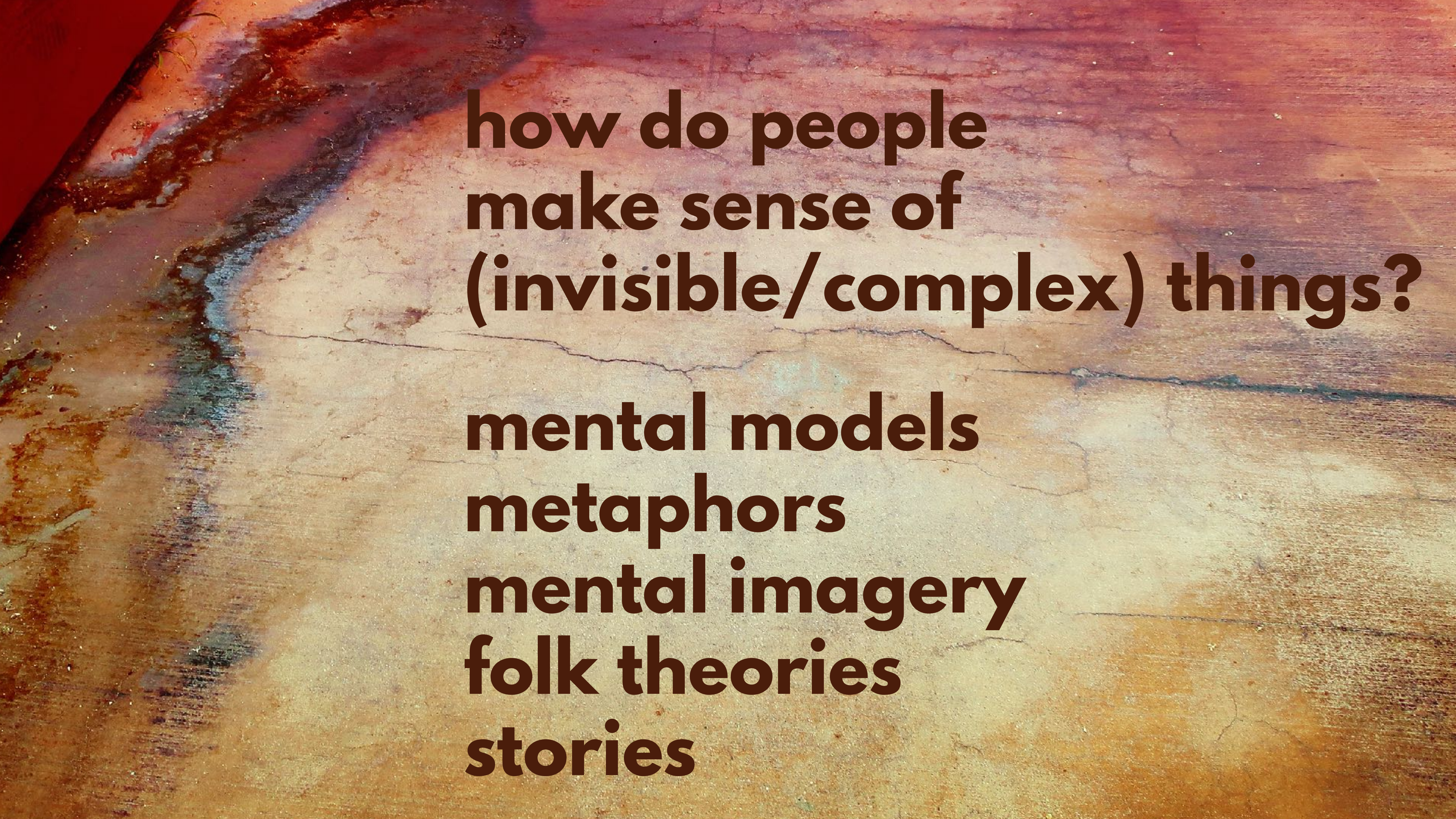


**imaginaries**



**“If [people] define  
situations as real,  
they are real in their  
consequences”**

**William Thomas & Dorothy Swaine Thomas  
The Child In America, 1928**



**how do people  
make sense of  
(invisible/complex) things?**

**mental models  
metaphors  
mental imagery  
folk theories  
stories**

Imaginarities show how  
“observed facts of nature are  
refracted through **collective  
desires for logic and order,**  
producing authoritative  
representations of how the  
world works—as well as **how it  
should work**”



Sheila Jasanoff  
and Sang-Hyun Kim, *Dreamscapes  
of Modernity*, 2015



**people often act  
on their 'model'  
of the situation**

**(designers work with this a lot)**

**‘When we don’t know  
how a thing works,  
we make it up’**

**Lou Downe, former Head of Design,  
UK Government Digital Service**



**climate crisis**  
**public health (inc pandemics)**  
**resources**  
**social justice**  
**the law**  
**the government**  
**the economy**  
**quality of life**

**energy systems**

**‘transitions’ in general**

**artificial intelligence**

**‘algorithms’**

**personal data and privacy**

**social media**

**‘the Internet’**



**cities (and rural areas)**

**neighbourhoods**

**communities**

**regions**

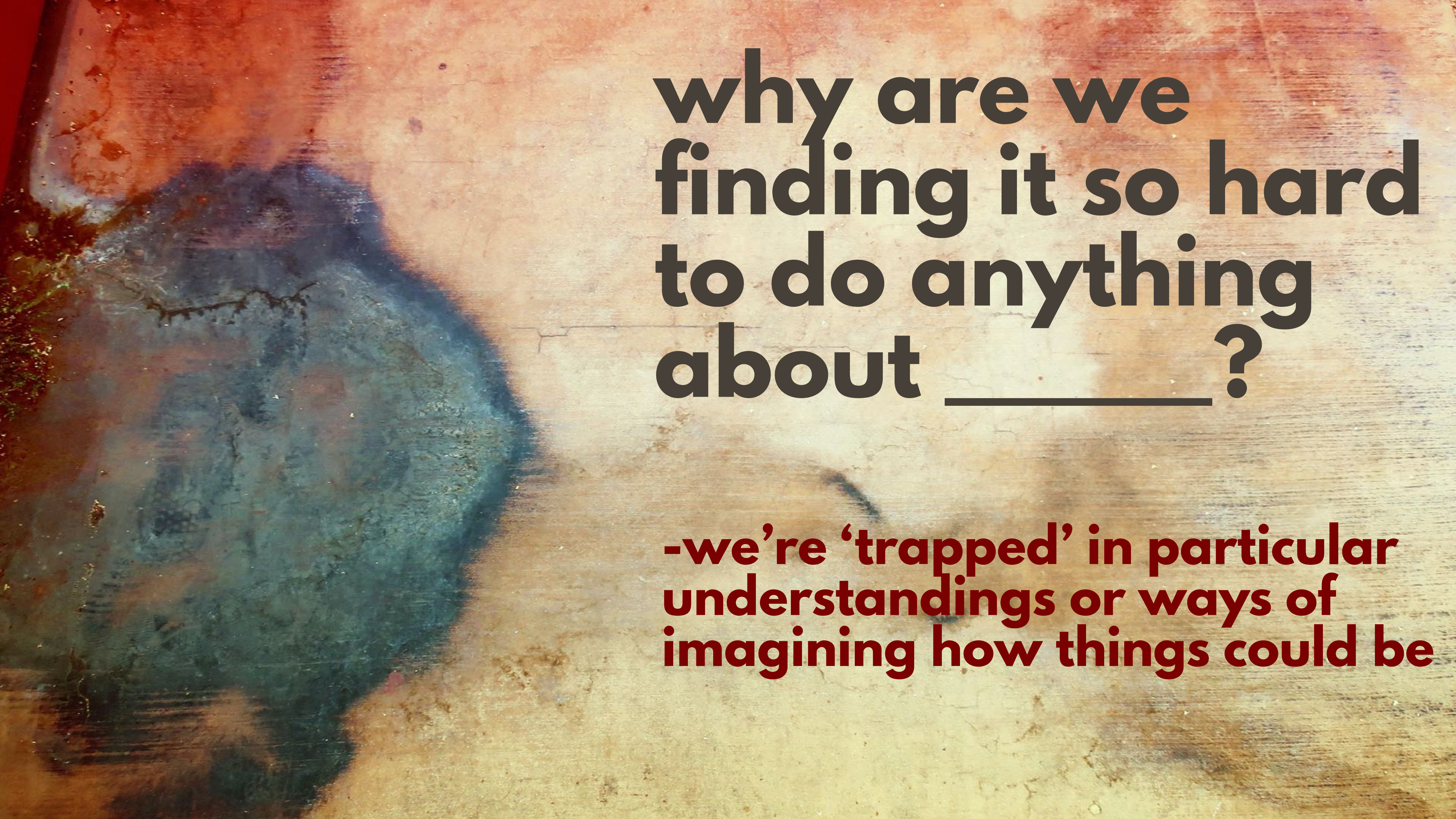
**organisations**

**nations**



**why are we  
finding it so hard  
to do anything  
about \_\_\_\_\_?**

**-our narratives, our  
understandings of ourselves  
and the systems we're in, are  
limited by enormity or  
complexity or invisibility**



**why are we  
finding it so hard  
to do anything  
about \_\_\_\_\_?**

**-we're 'trapped' in particular  
understandings or ways of  
imagining how things could be**



**why are we  
finding it so hard  
to do anything  
about \_\_\_\_\_?**

**-there's been a focus on  
individual behaviour change  
rather than systemic and  
infrastructural issues and power  
structures**

**Get imaginaries out  
of people's heads  
and into a shared  
space, together**

**“When thought  
overwhelms the mind,  
the mind puts it into  
the world”**

**Barbara Tversky**  
professor emerita of psychology at Stanford University and  
professor of psychology and education at Columbia University



**making**

**imaginaries**

**tangible**

**making  
imaginaries  
tangible**

**personal  
development  
& futuring**

Carnegie Mellon  
**Design**

Delanie Ricketts and Dan Lockton  
(2019). Mental Landscapes:  
externalizing mental models through  
metaphors. Interactions 26, 2









# Imagination Landscapes

[imaginari.es/landscapes](http://imaginari.es/landscapes)

Den Lockton  
Delanie Ricketts  
Tammar Zee-Wolfson  
Lisa Brawley  
John Fass  
Laura Forlano  
Manuele Aguirre Ulloa  
2016 to date

**imaginariés  
lab**

Participatory futuring & design with landscape metaphors



Dan Lockton  
Delanie Ricketts  
Tammar Zee-Wolfson  
Lisa Brawley  
John Fass  
Laura Forlano  
Manuela Aguirre Ulloa  
2016 to date

imaginaries  
lab

design with landscape metaphors

making  
imaginaries  
tangible

inter-  
disciplinarity

IIT Institute of Design

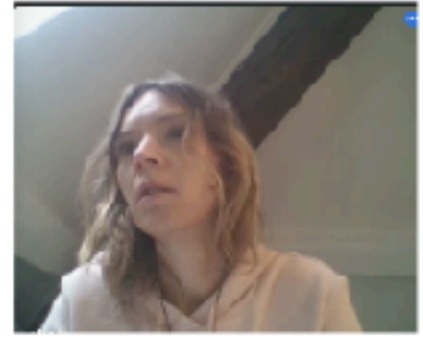
SYSTEMIC  
DESIGN

Dan Lockton, Lisa Brawley, Manuela Aguirre Ulloa, Matt Prindible, Laura Forlano, Karianne Rygh, John Fass, Katie Herzog, Bettina Nissen (2019). *Tangible Thinking: Materializing how we imagine and understand interdisciplinary systems, experiences, and relationships*. RSD 8, Chicago, October 2019

Dan Lockton, Laura Forlano, John Fass, Lisa Brawley (2020). *Thinking with Things: Landscapes, Connections and Performances as Modes of Building Shared Understanding*. IEEE Computer Graphics & Applications, forthcoming







Four slide thumbnails representing different stages of a process:

- First pass: Your environment.** Includes an image of a desk with a laptop and various items.
- Second pass: Digital artefacts.** Includes an image of a hand holding a smartphone displaying a profile.
- Third pass: Digital environment.** Includes an image of a laptop screen showing a website.
- Fourth pass: Connections.** Includes a diagram showing a central node connected to three peripheral nodes.

- Mouse cursor
- Grid
- Text
- Image
- Shape
- Line
- Eraser
- Pen
- Highlighter
- Eraser
- Selection
- More options

A collection of visual artifacts on the whiteboard:

- A photograph of a yellow convertible car.
- A photograph of a bicycle parked on a street.
- A photograph of a 3D printer labeled "Liftwaker".
- A grid of small images, possibly a gallery or a collection of social media posts.
- A tilted document or list of items with text and checkboxes.
- A small diagram with a central node and three branches.

Zoom controls and navigation:

- Navigation icons: back, forward, home, search.
- Zoom level: 306%

making  
imaginaries  
tangible

mental health



Michal Luria, Ulu Mills, Jen Brown, Dan Lockton, et al. (2021). Materialising Mental Health: Design Approaches for Creative Engagement with Intangible Experience. In: Deborah Lupton and Deana Leahy (eds.), Creative Approaches to Health Education. London: Routledge.





BALANCING REPLY  
+ FUTURE GOALS



SELF-DOUBT



Sadness



Apathetic



Disgust



STRESS



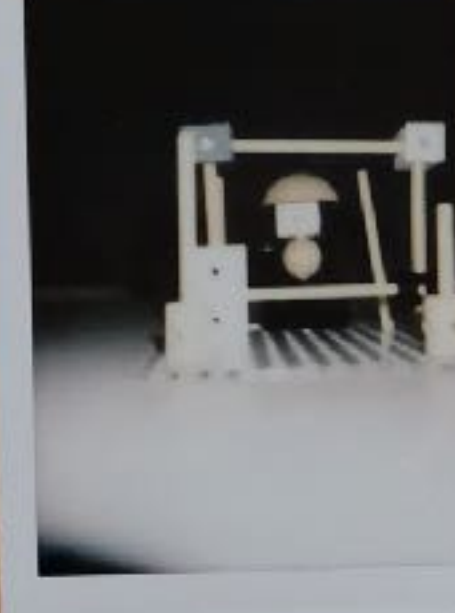
Roller Coaster



LOWLINESS



SlOth (but COzy)



Structured Chaos



Con Fusion



EXHAUSTION



Lonliness



Disillusion  
Hopefulness



Surprise



ANTICIPATION



Imbalance



Family of emotion



Anx, tired, excited



Wired / con fused



Singular and Shared – Exploring metaphors and systems, Online Whiteboard for Visual Collaboration

https://miro.com/app/board/o9J... Search

miro Star Share Meeting

Instructions (2x)

1. Choose one word
2. Use words and visuals to communicate the meaning of the word as you understand it.
3. This is an opportunity to think creatively so there are no right or wrong answers. Feel free to go beyond the conventional ways of describing the word and come up with new and interesting ones!
4. When answering, keep your audience in mind.

Structure

Time

Uncertainty

System

Add your own 'systemic design' word

Martha Teye

Joanna Bohnert

duplicate this somewhere on the board

Marie Davidova

11:37

+1m +5m

Zoom Meeting 18:02 View

Participants (14)

RSD10 Dan Lockton

RSD10 - Azhim

Visiting Explorer

Visiting Architect

Maria Buckenmayer Maria

Dumini Perera

Who can see your messages?

To: Everyone

Type message here...

Unmute Start Video Security Share Screen Reactions More Leave

making  
imaginaries  
tangible

new  
metaphors

Dan Lockton, Devika Singh, Saloni Sabnis, Michelle Chou, Sarah Foley, Alejandro Pantoja (2019). *New Metaphors: A Workshop Method for Generating Ideas and Reframing Problems in Design and Beyond*. ACM C&C 2019



new  
metaphors

developed  
with  
designers

IXDA

Google Design



new metaphors

...and with students

UDD Universidad del Desarrollo

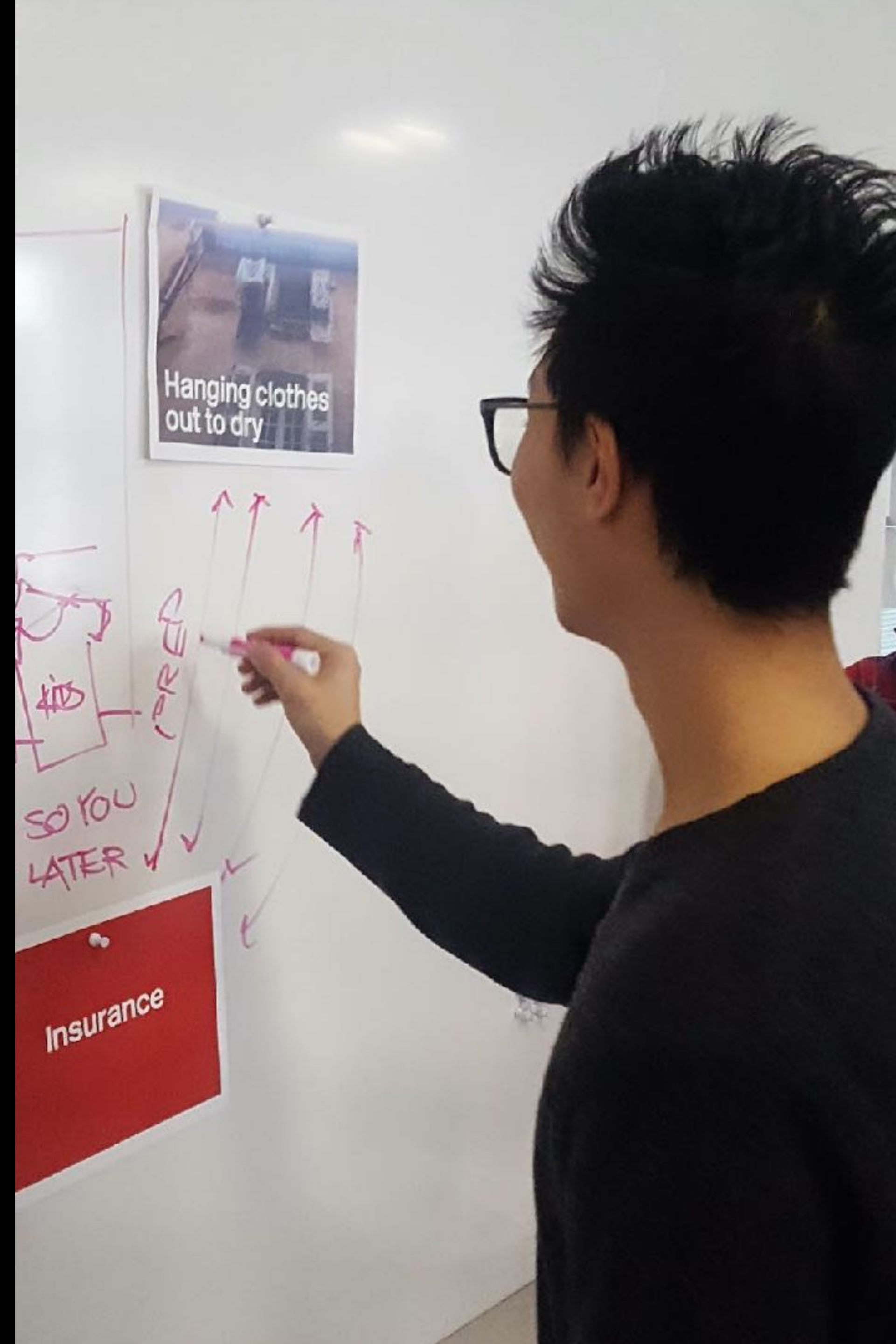
Carnegie Mellon Design

So/-

Carnegie Mellon University



SPJIMR Bharatiya Vidya Bhavan





⑤ movement transition.

⑥ common → m/v  
diff →

① issue being an immigrant.

② an old skin } meta use

THE OPPORTUNE MOMENT

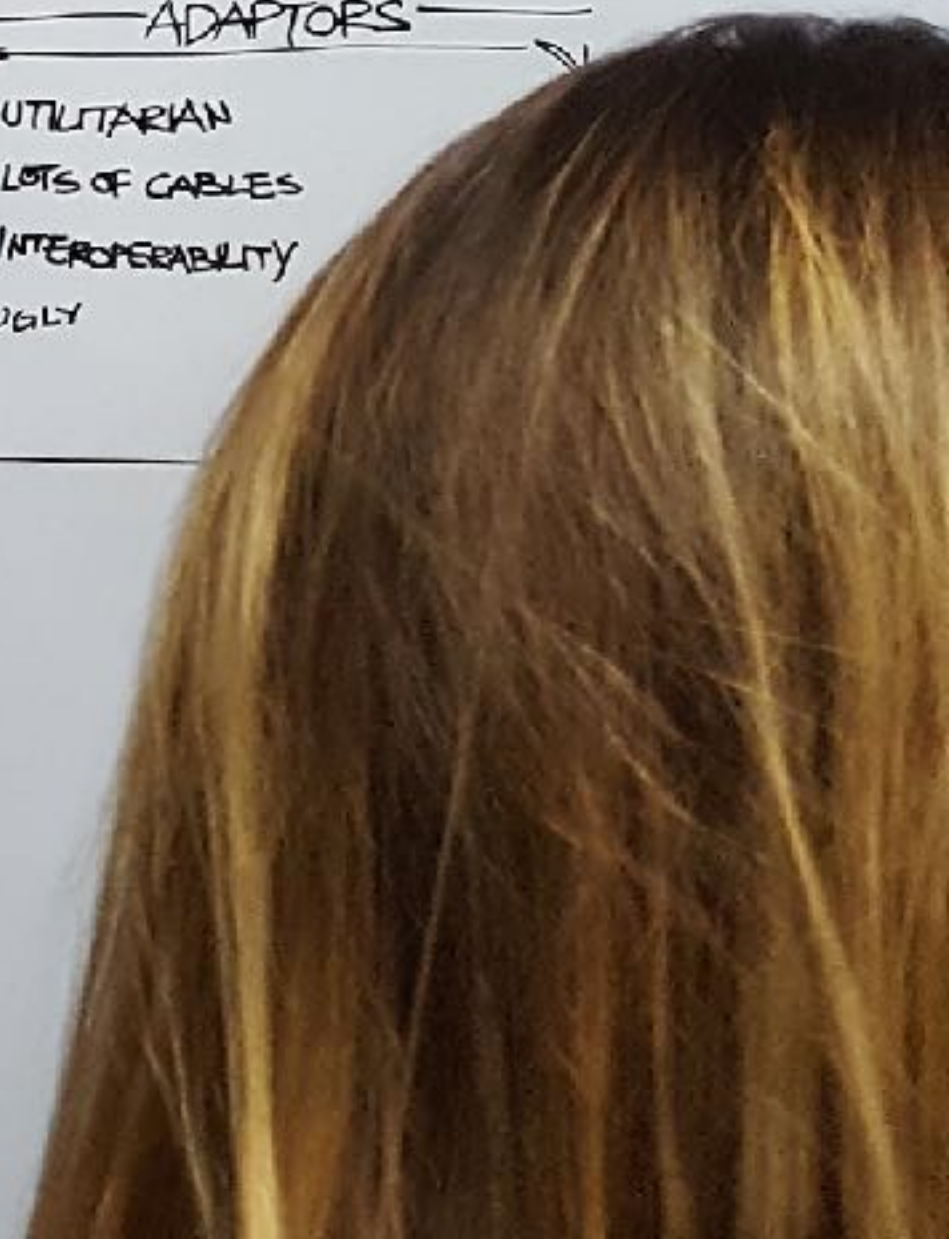
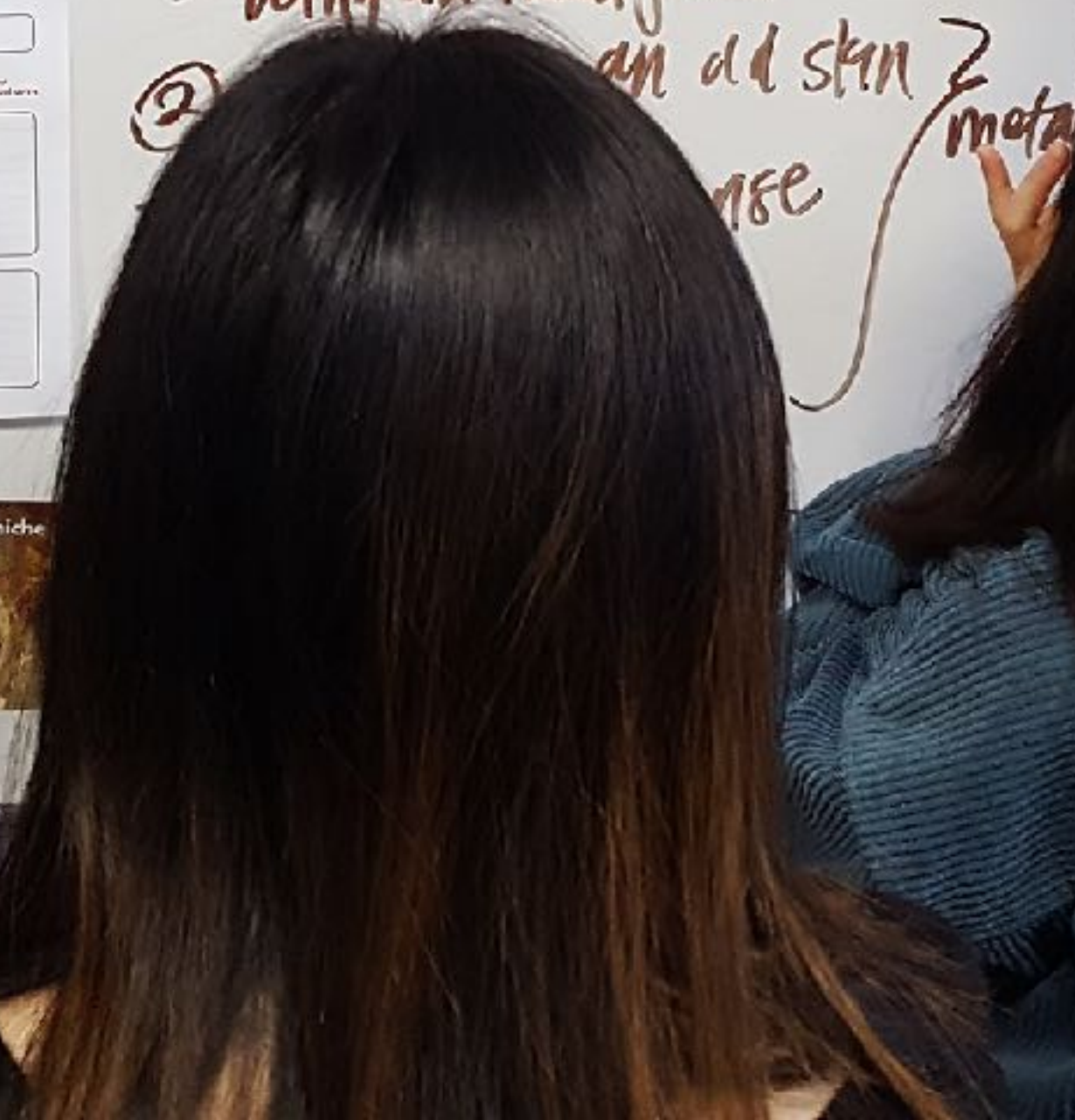
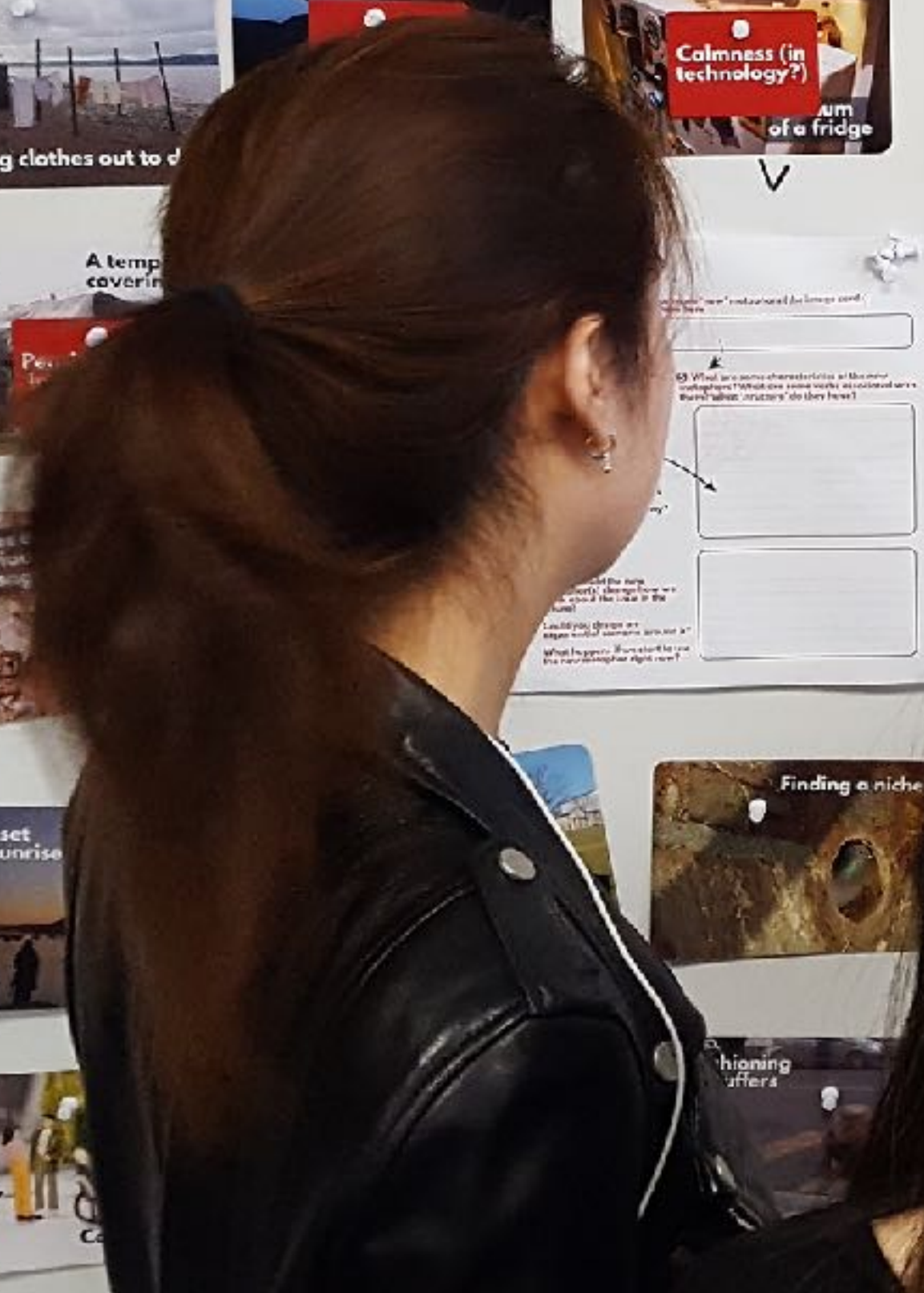
- HAVE IT WHEN YOU NEED IT
- GRATIFYING

SOLIDARITY

- UNITY
- PART OF A WHOLE

ADAPTORS

- UTILITARIAN
- LOTS OF CABLES
- INTEROPERABILITY
- UGLY



# New Metaphors

How could

be a metaphor for...?



Democracy

Idea generation through  
juxtaposition, or bisociation  
(Arthur Koestler)

[newmetaphors.com](http://newmetaphors.com)

[Try another metaphor...](#)

New Metaphors is a creative toolkit for generating ideas and reframing problems.

**metaphors**



**A net**



# A signpost

Rua do Bojador

Rua do Bojador

Canto de Música  
Playground

F.I.L.(Feira Internacional de Lisboa)  
Lisbon International Fair

Pavilhão Atlântico  
Arena

Centro Comercial  
Shopping Centre

REPÚBLICA  
DA  
CERVEJA

REPÚBLICA  
DA  
CERVEJA

The  
road  
ahead





# Conversation



# Mosaics and tiles



**Things growing on things**

# literally 'carrying across'

μετά (*meta*), "after, with,  
across"

φέρω (*pherō*), "to bear",  
"to carry"





# literally 'carrying across'

μετά (*meta*), "after, with,  
across"

φέρω (*pherō*), "to bear",  
"to carry"

**“It is the same kind of looking that recognises the spirals of growth in shells as the frozen form of cyclones and galaxies.”**

**Mary Catherine Bateson,  
1984**

**“the **secret connections** between things.”**

**Jorge Luis Borges, 1986**







**a metaphor is:**

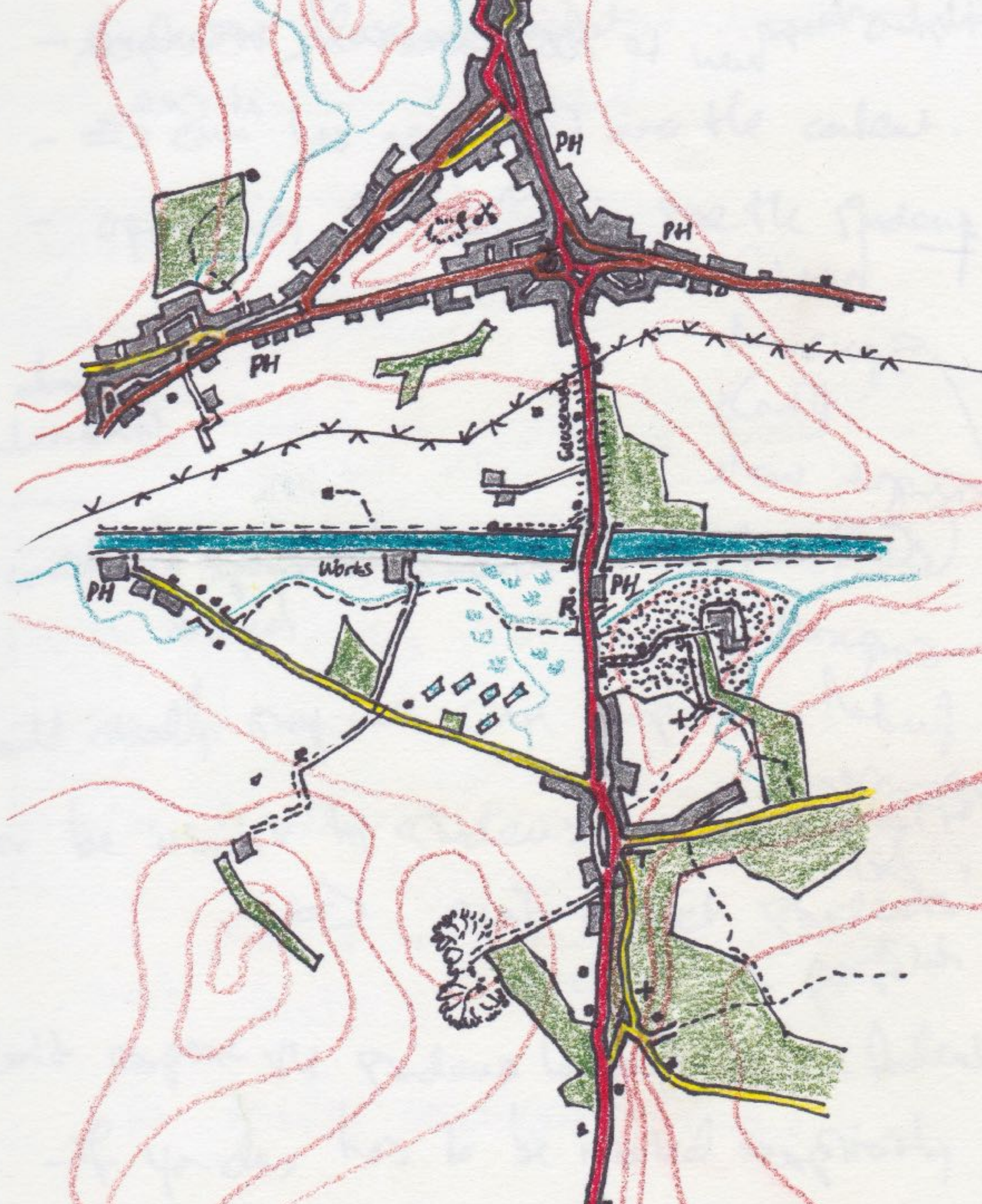
☀ **not the thing itself**

☀ **a map, not the territory**

☀ **a model**

**‘All models are wrong, but some  
are useful’  
(George Box)**

**All metaphors are wrong, but  
some are useful, sometimes**

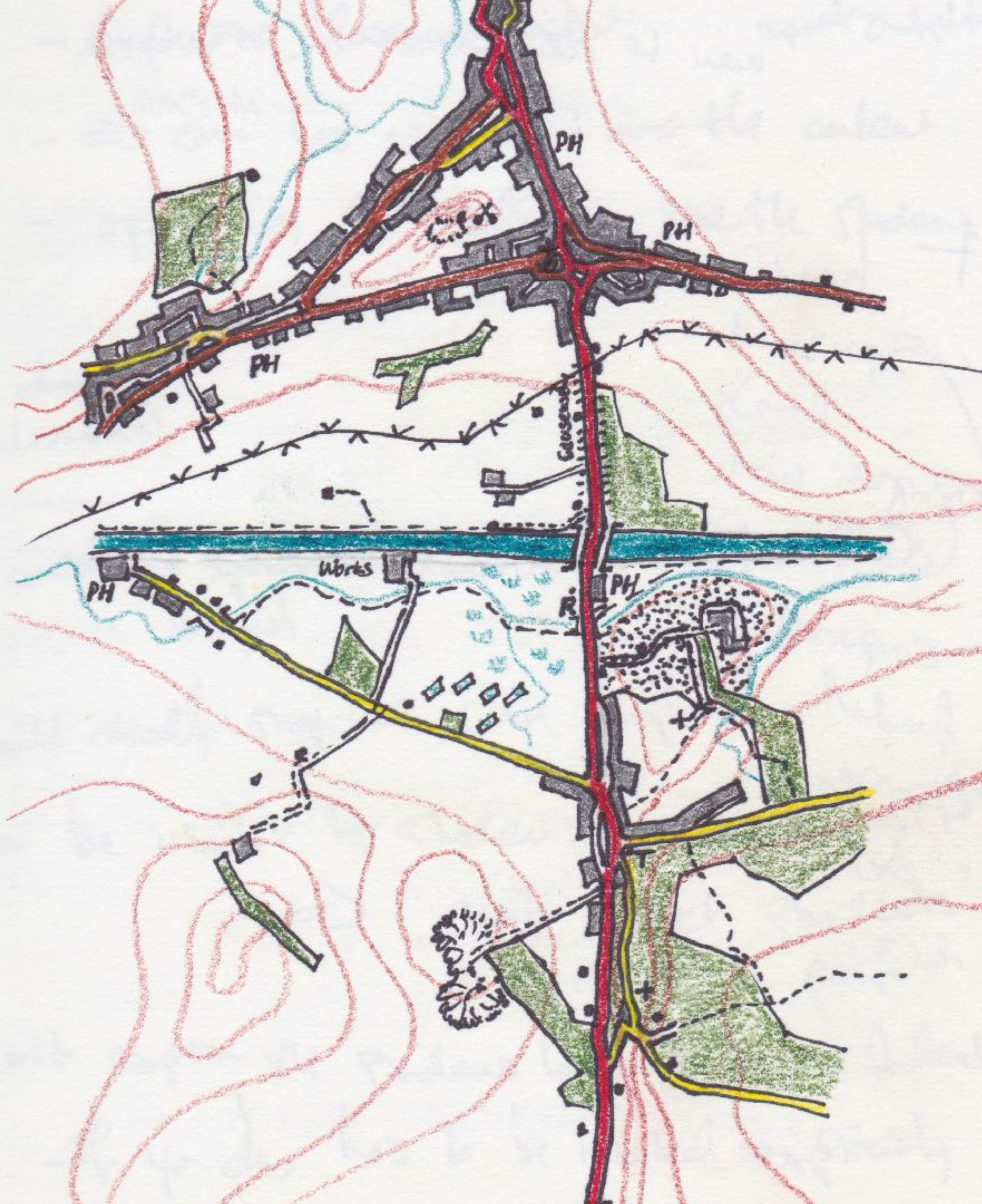


**a metaphor is:**

- ☀ **not the thing itself**
- ☀ **a map, not the territory**
- ☀ **a model**

**‘All models are wrong, but some are useful’  
(George Box)**

**All metaphors are wrong, but  
some are useful, sometimes**



**a metaphor is:**

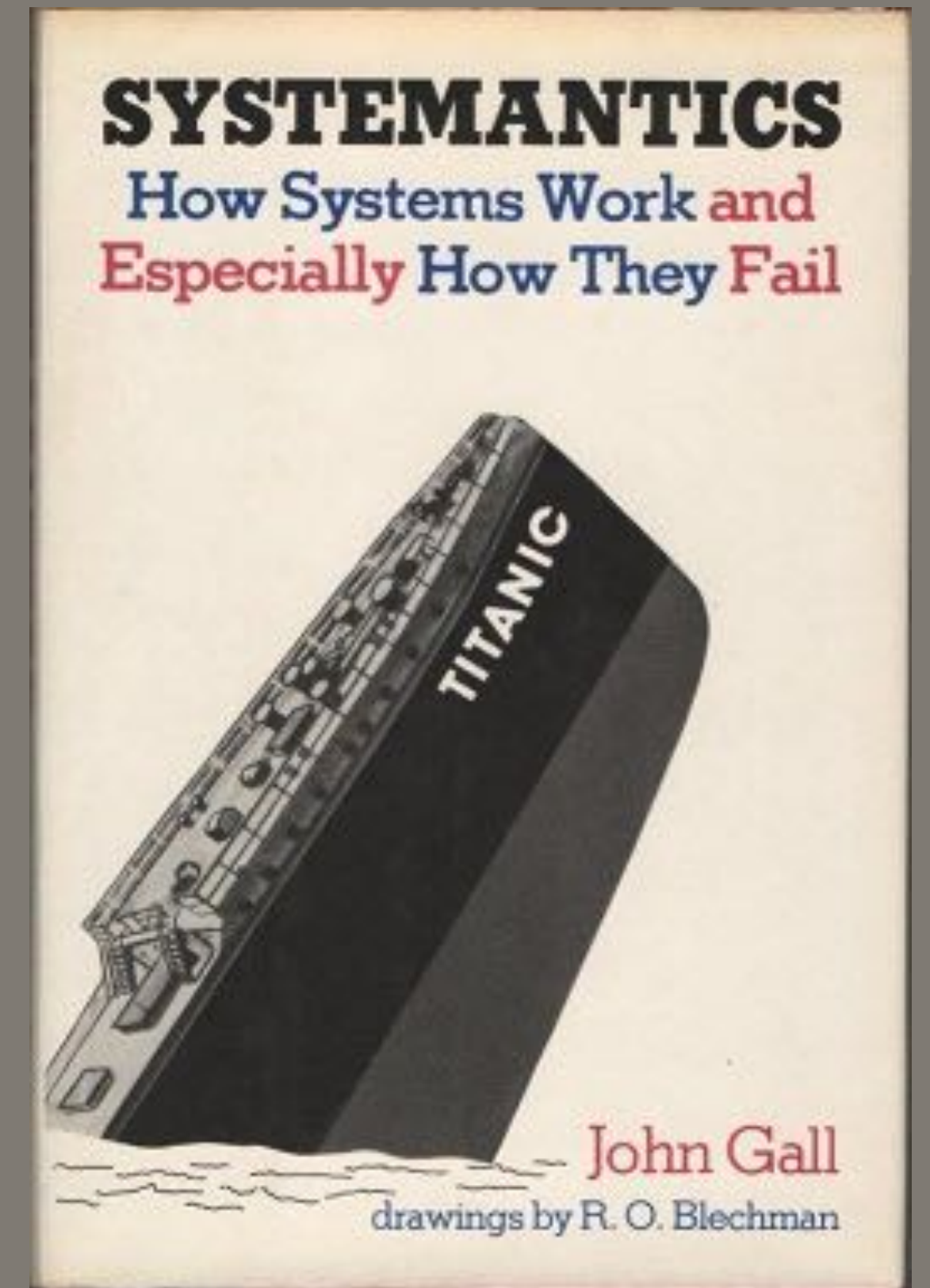
- ☀ **not the thing itself**
- ☀ **a map, not the territory**
- ☀ **a model**

**‘All models are wrong, but some are useful’  
(George Box)**

**All metaphors are wrong, but  
some are useful, sometimes**

**systems don't exist**

**systems don't exist**



**all ways of describing systems  
use metaphors**

**but what does that do?  
(if we act as if they are real  
rather than abstractions?)**

Table 1. A small selection of metaphors in common use in systems terminology (of course, there are many, many more)

soft and hard systems	loops	feedback and feedforward
layers (pace layers, shearing, other)	knots and double-binds <sup>5</sup>	leverage points
horizons and foresight	paths	frontiers
transitions	landscapes	connections
forces	emergence	networks
stability and equilibrium	black (and white) boxes	goals and targets
boundaries	circularity	steering
nested systems	maps	probing
open and closed systems	machine metaphors	ecology



“The main conference theme **explores** design and systems thinking practices as **mediators** to deal **fruitfully** with **tensions**. Our human tendency is to relieve the tensions, and in design, to resolve the so-called “**pain points**.” But tensions reveal paradoxes, **the sites of connection, breaks in scale, emergence** of complexity. Can we **embrace** the tension, the paradoxes as **valuable** social **feedback** in our **path** to just and sustainable futures?”

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Thank you!

imaginari.es  
dan@imaginari.es