

Design & Imagination in Climate Futuring

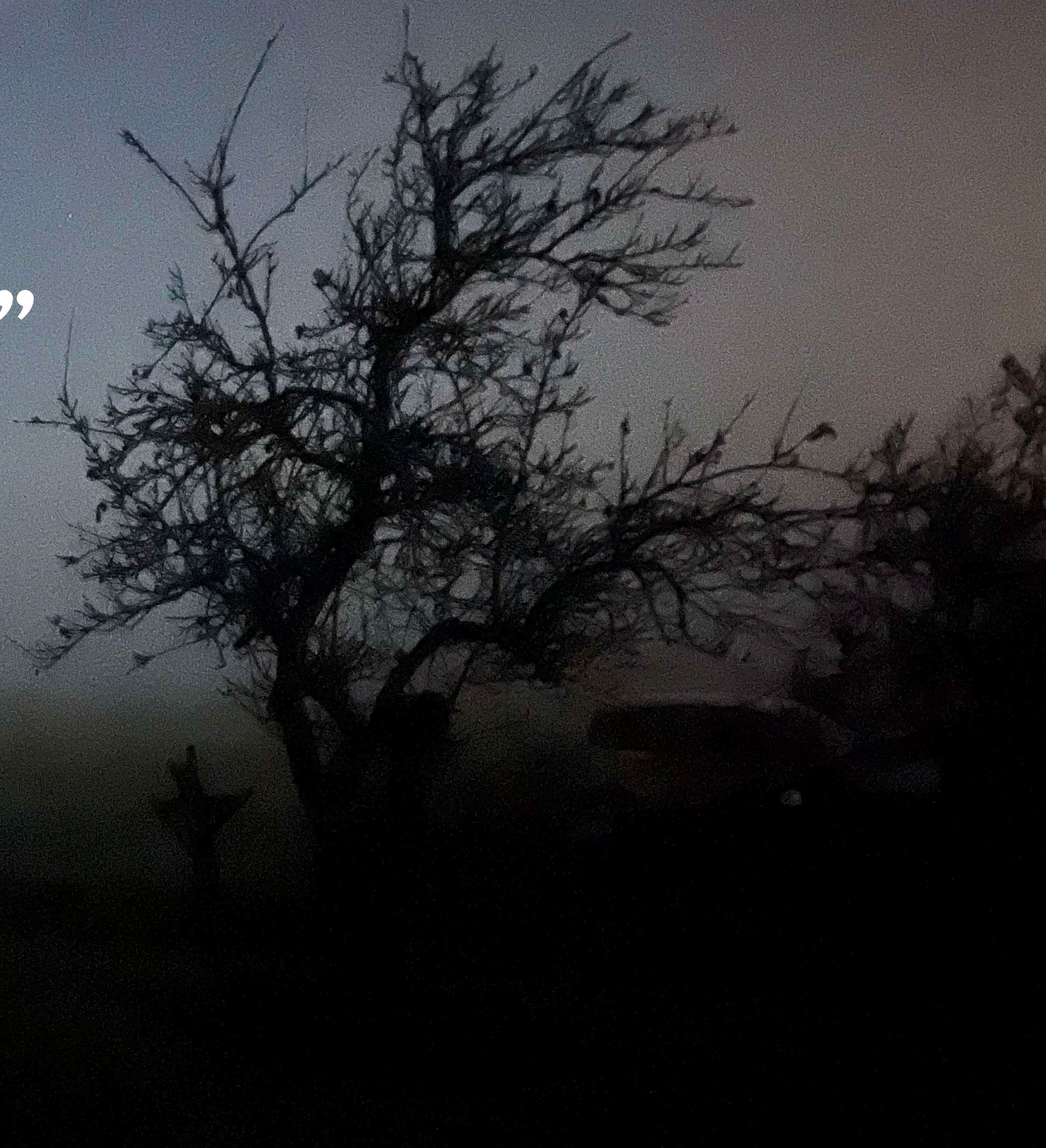
Dan Lockton
Assistant Professor,
TU Eindhoven, Netherlands

imaginariës
lab

TU/e

“a crisis of imagination”

Amitav Ghosh



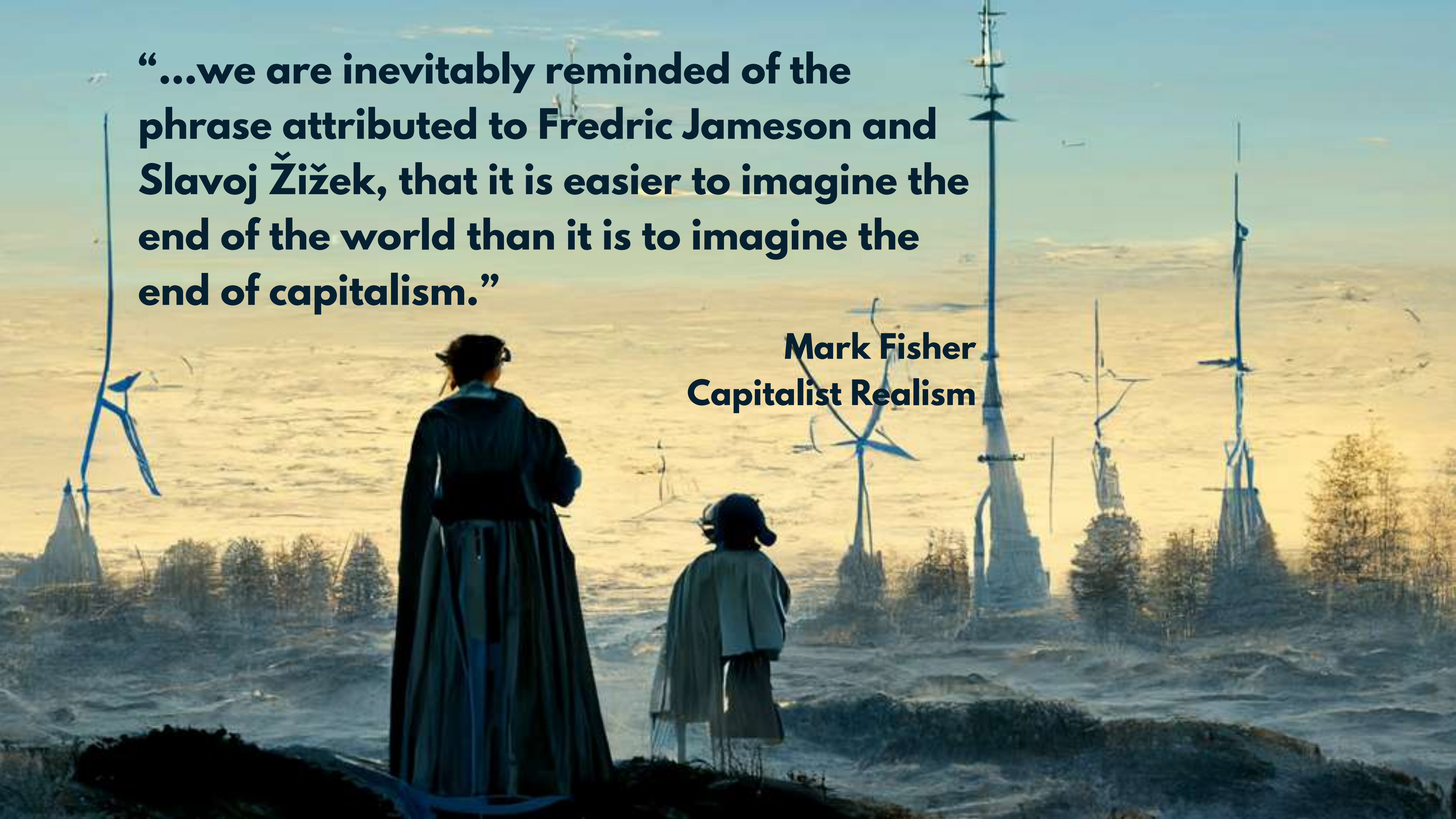


**“Reality is now a mass
of competing fictions”**

JG Ballard, 2006, South Bank Show interview

“...we are inevitably reminded of the phrase attributed to Fredric Jameson and Slavoj Žižek, that it is easier to imagine the end of the world than it is to imagine the end of capitalism.”

**Mark Fisher
Capitalist Realism**



**“Another world is not only possible, she is on her way.
On a quiet day, I can hear her breathing.”**

Arundhati Roy, 2005 World Social Forum



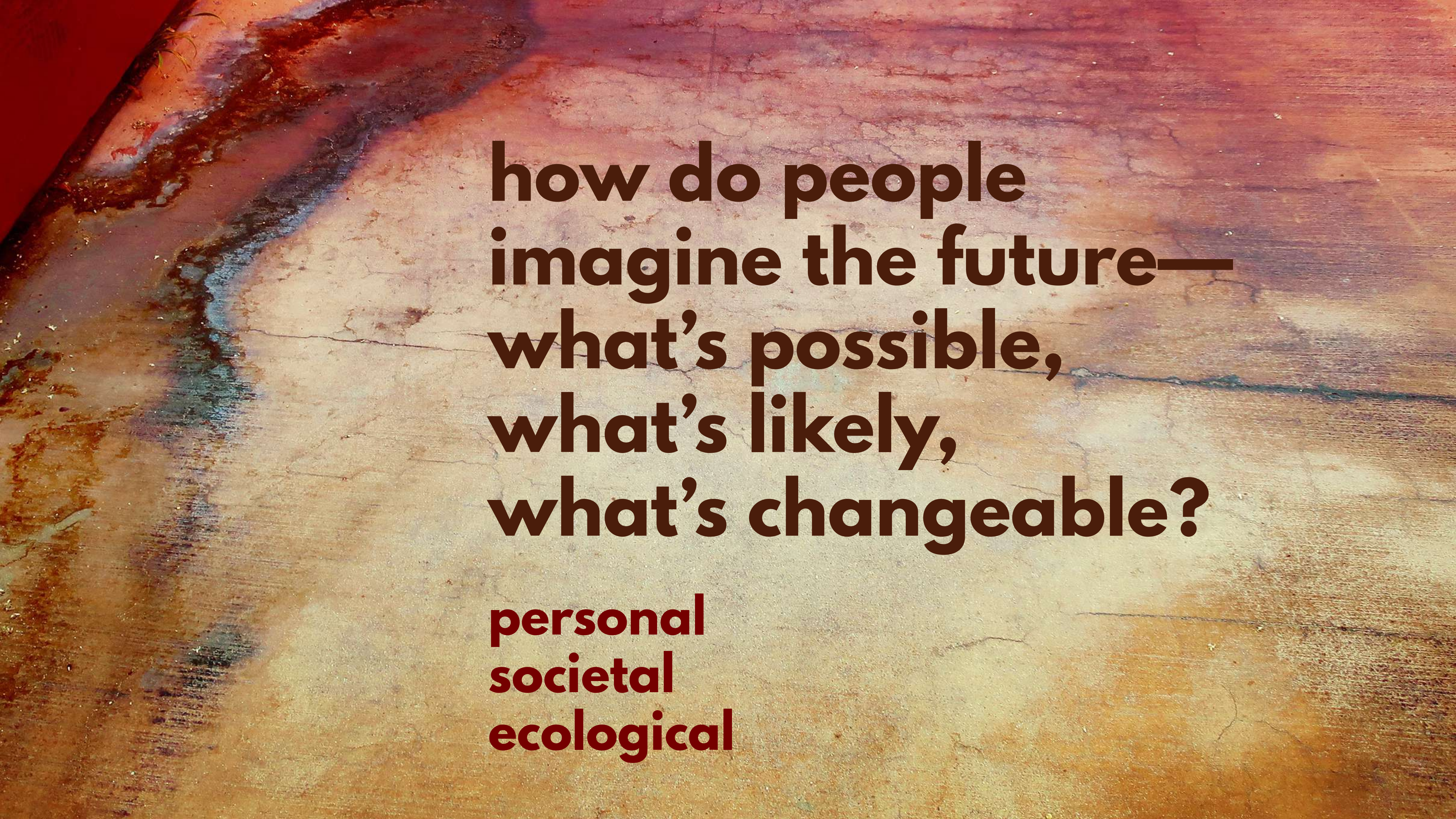
imaginaries



imaginaries

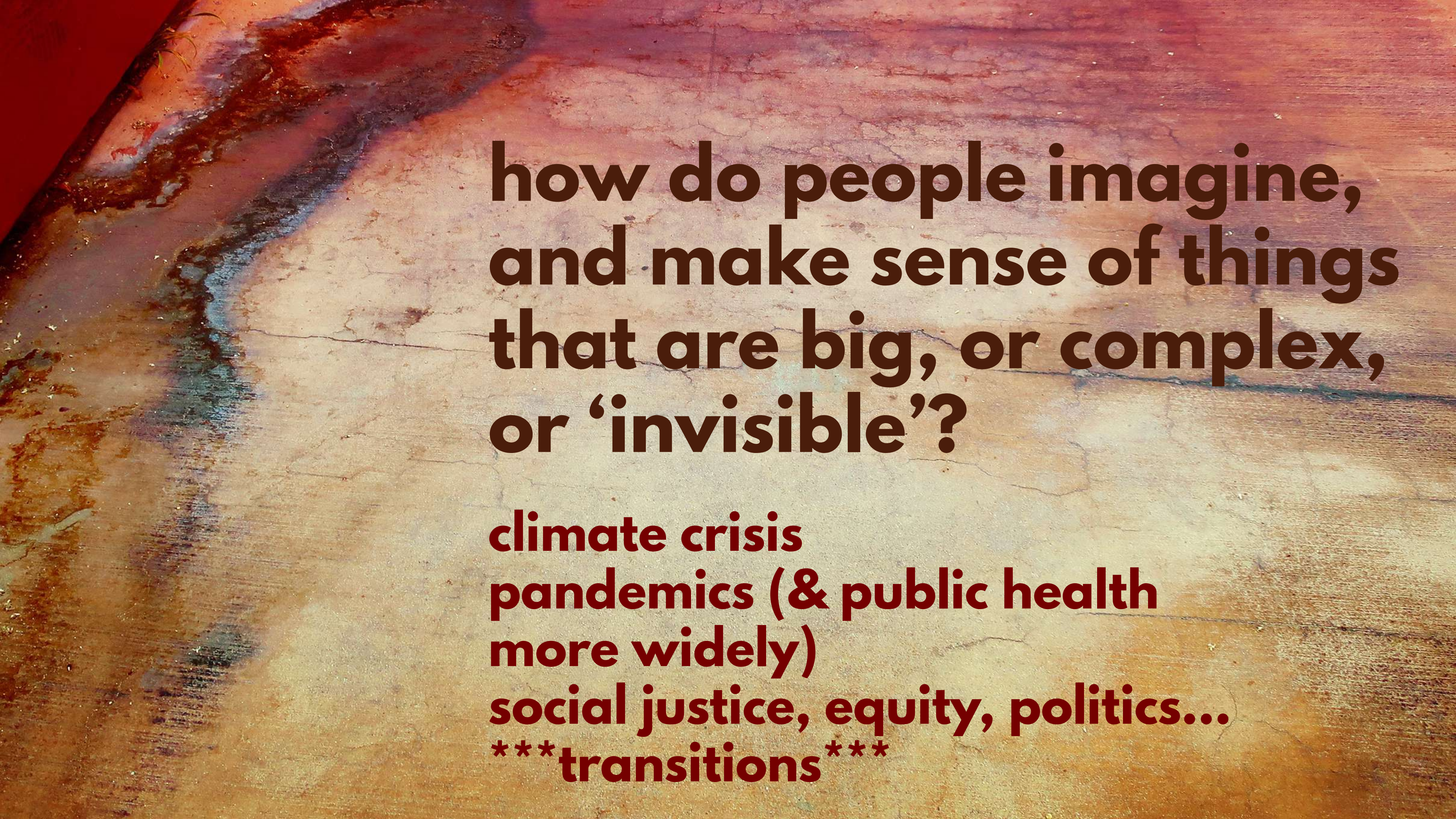
now — futures





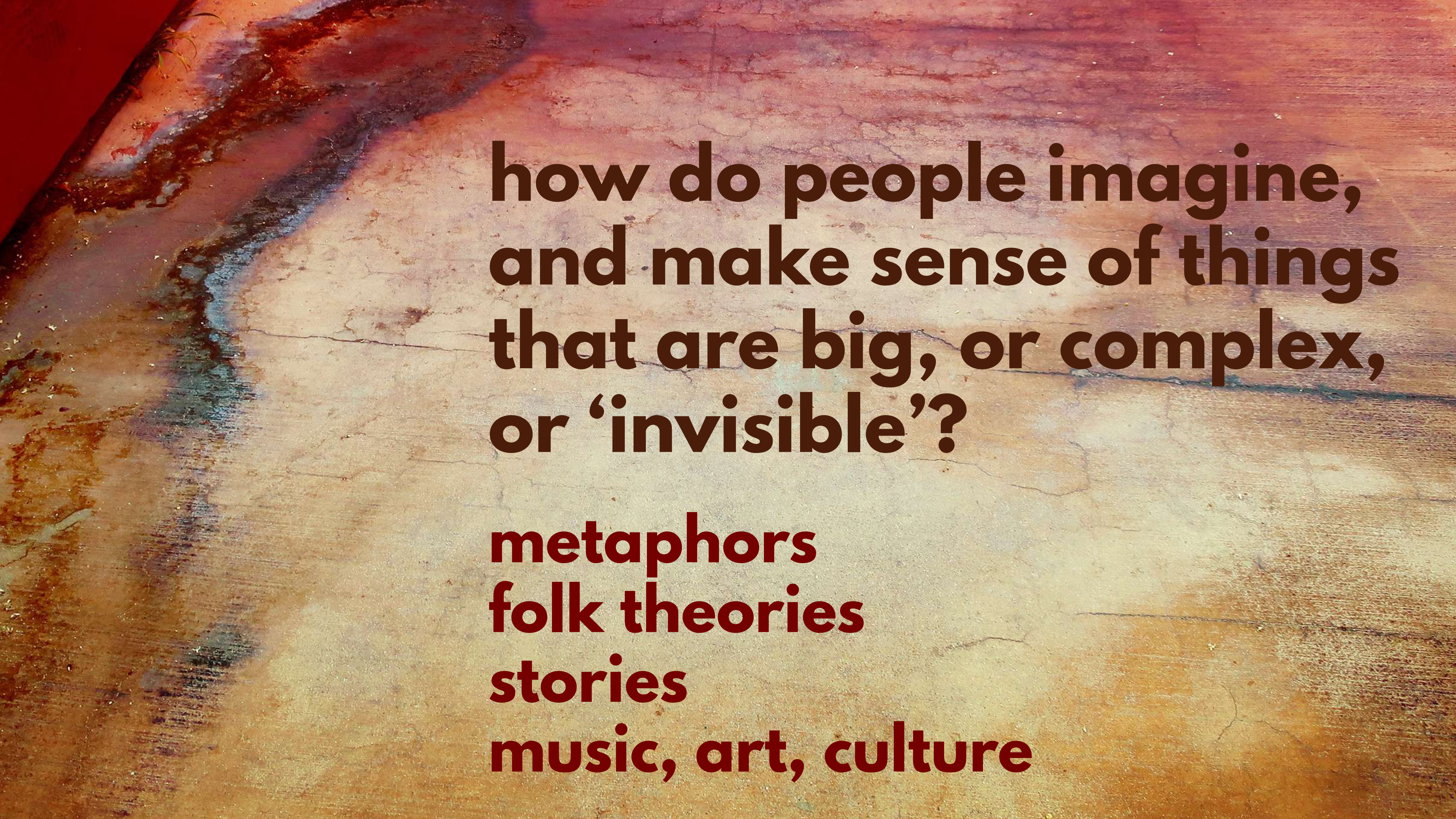
**how do people
imagine the future—
what's possible,
what's likely,
what's changeable?**

**personal
societal
ecological**




**how do people imagine,
and make sense of things
that are big, or complex,
or ‘invisible’?**

**climate crisis
pandemics (& public health
more widely)
social justice, equity, politics...
transitions**




**how do people imagine,
and make sense of things
that are big, or complex,
or ‘invisible’?**

**metaphors
folk theories
stories
music, art, culture**



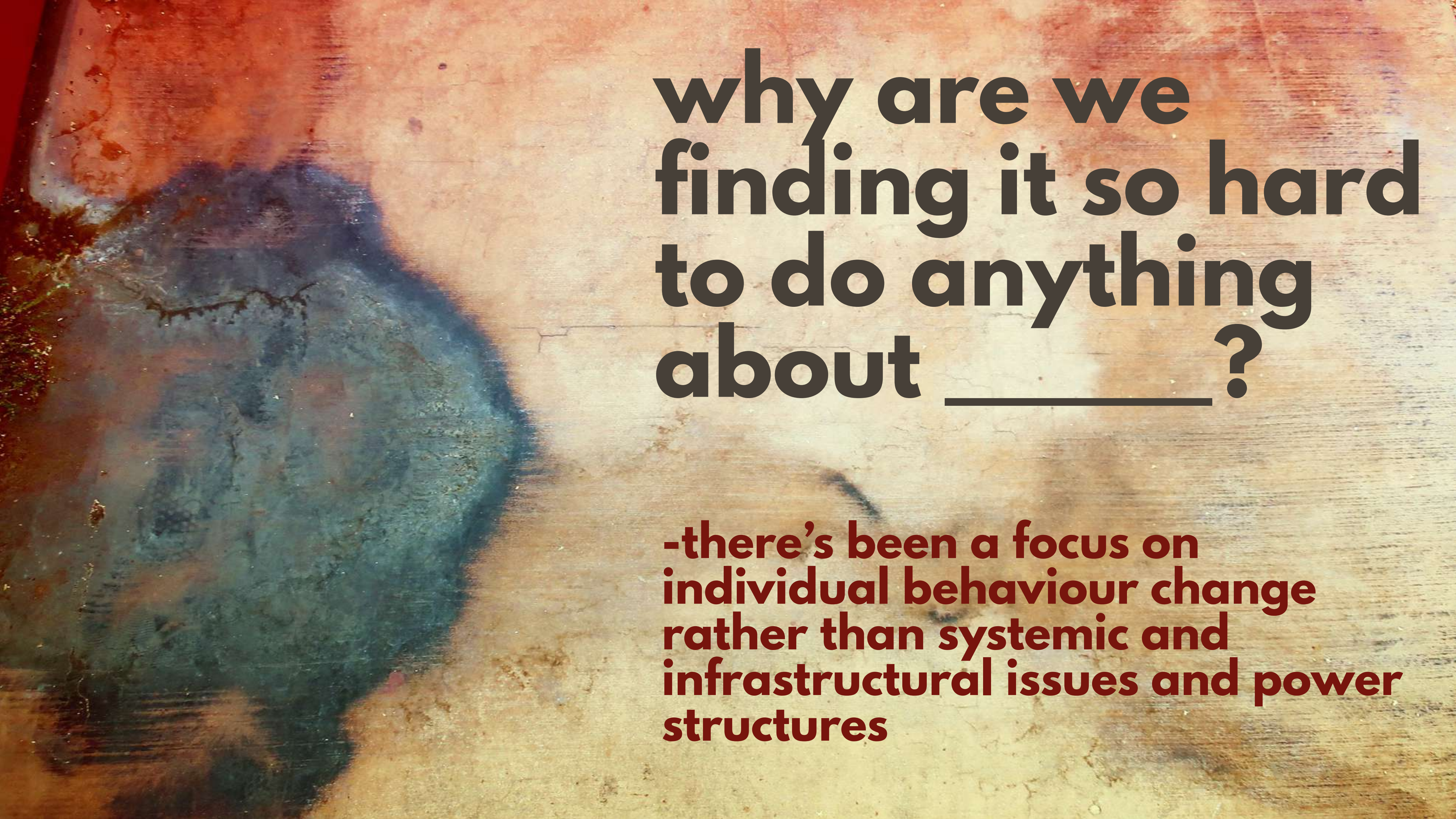
**why are we
finding it so hard
to do anything
about _____?**

**-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 _____?**

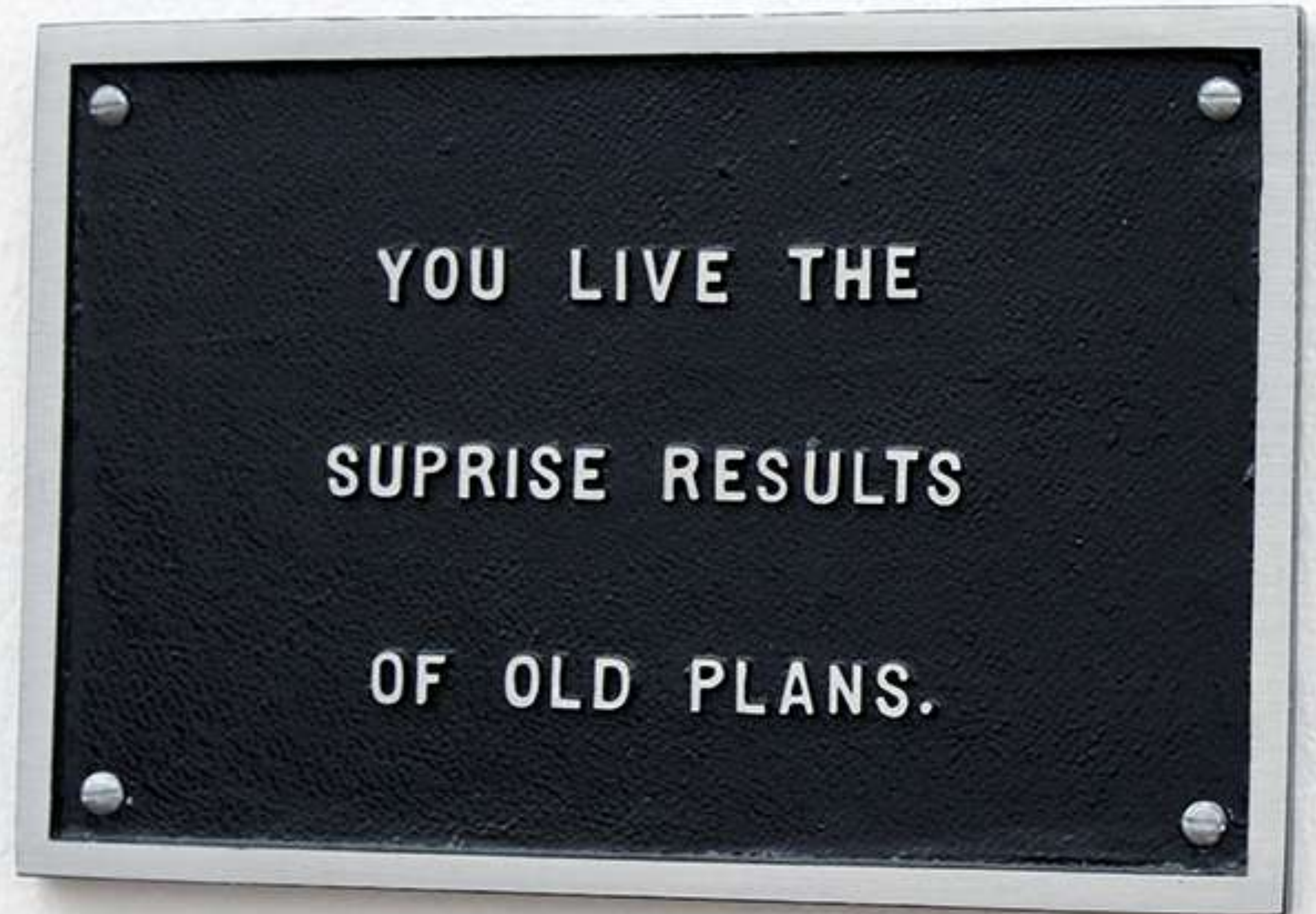
**-there's been a focus on
individual behaviour change
rather than systemic and
infrastructural issues and power
structures**



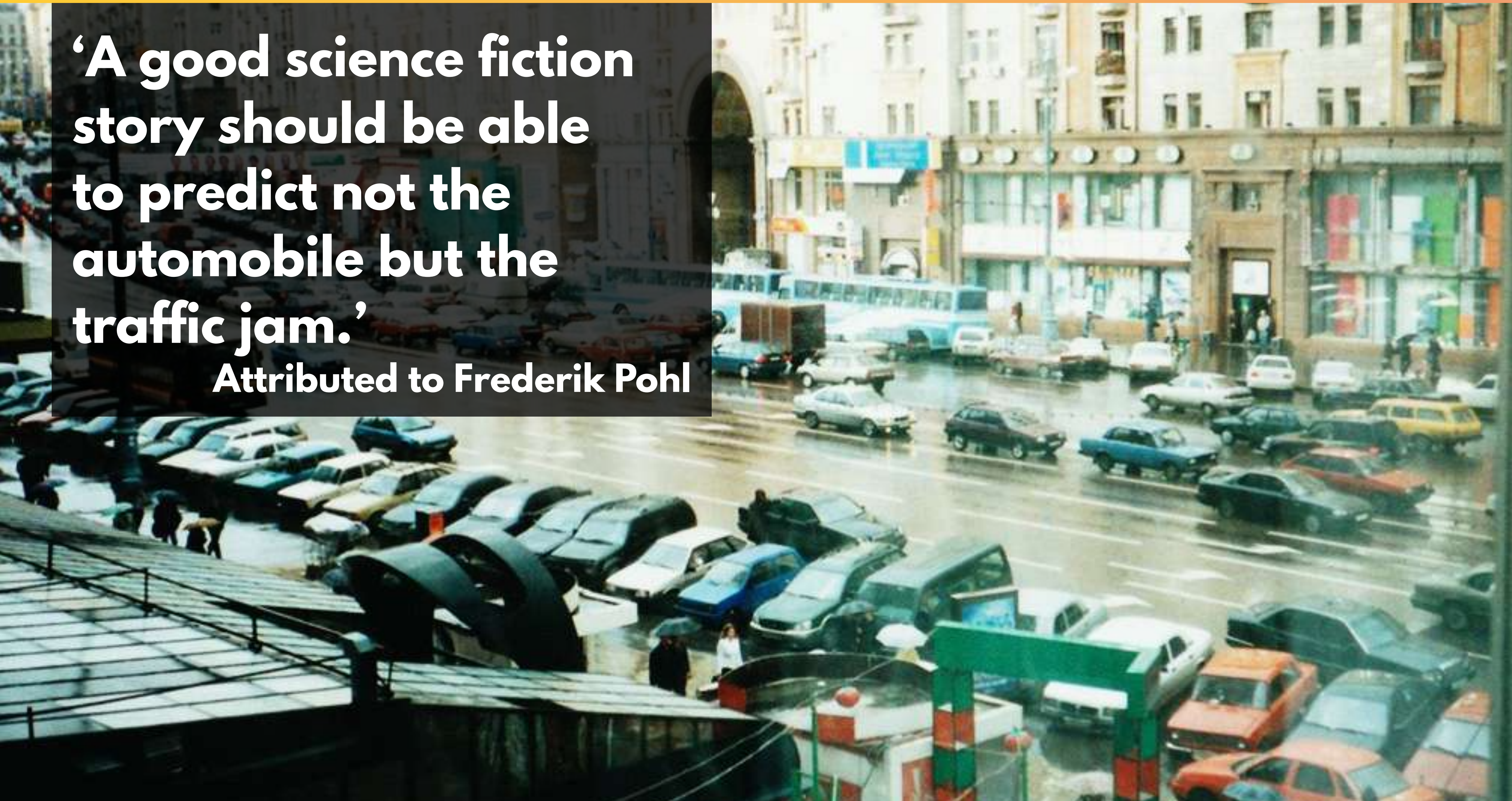
Jenny Holzer, Survival (1983-5)

Photo by Peter Chamberlain Cann >

^ Photo by Wikiartis



‘A good science fiction story should be able to predict not the automobile but the traffic jam.’
Attributed to Frederik Pohl



**design enabling us to
'rehearse the future'**



**design enabling us to
'rehearse futures'**





Eindhoven

Urban Room
Stadhuisplein 2a
Opened each day at
12:00 - 17:00

A room about our city,
for our city.

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and explore the status quo

CO₂ emi

Process

Climate Realities

Research Set-up

Collective Climate Action

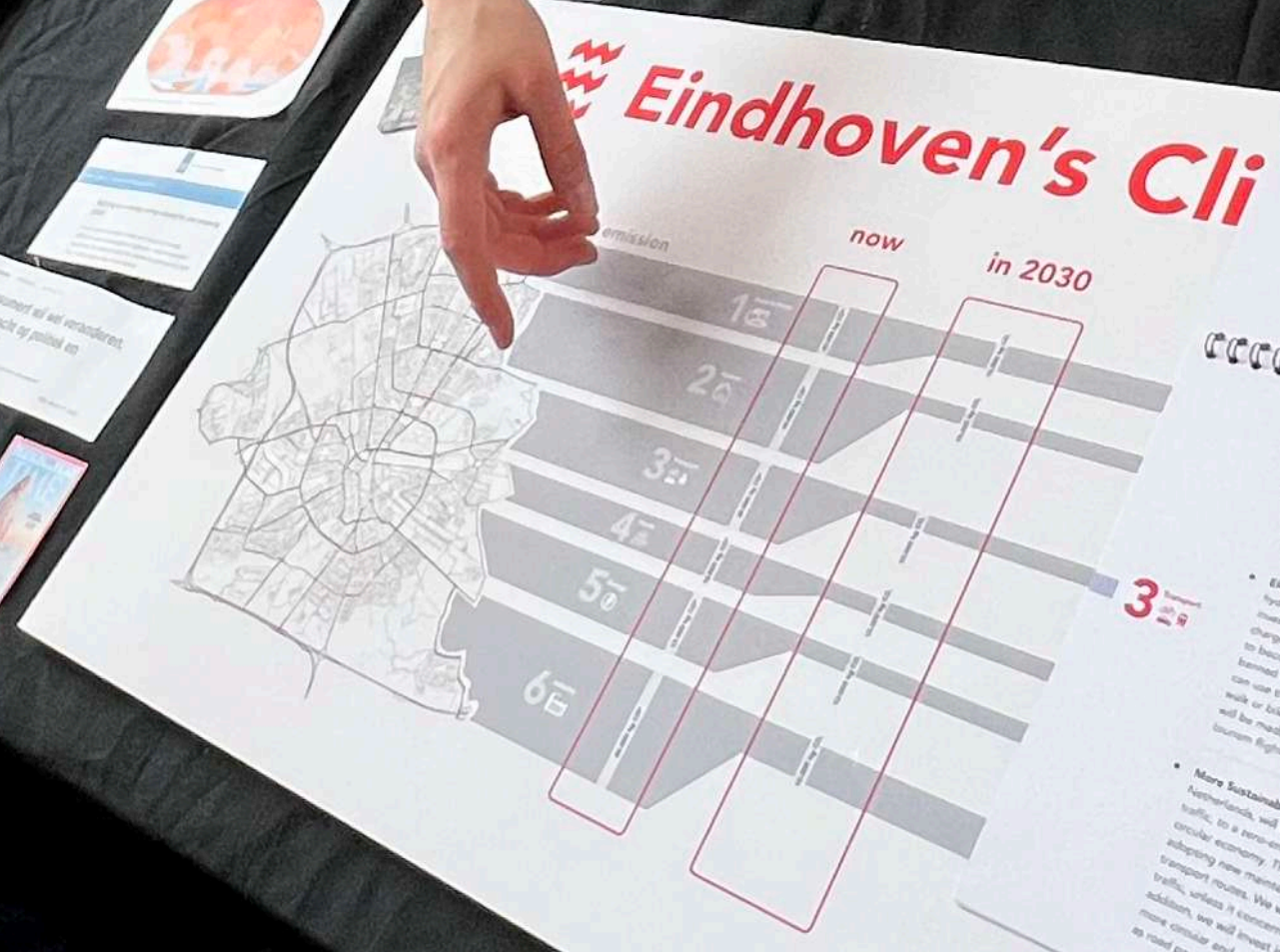
IFUTURES

How it works

SYNO

Other Settings

SYNO



Mark Rutte, 20. Mink je als je klimaatleiderschap toont

Advised against me speaking to you about the climate crisis.

for the municipality:

- Sustainable Energy Carriers
- Electric (Passenger) Traffic
- More Sustainable Logistics

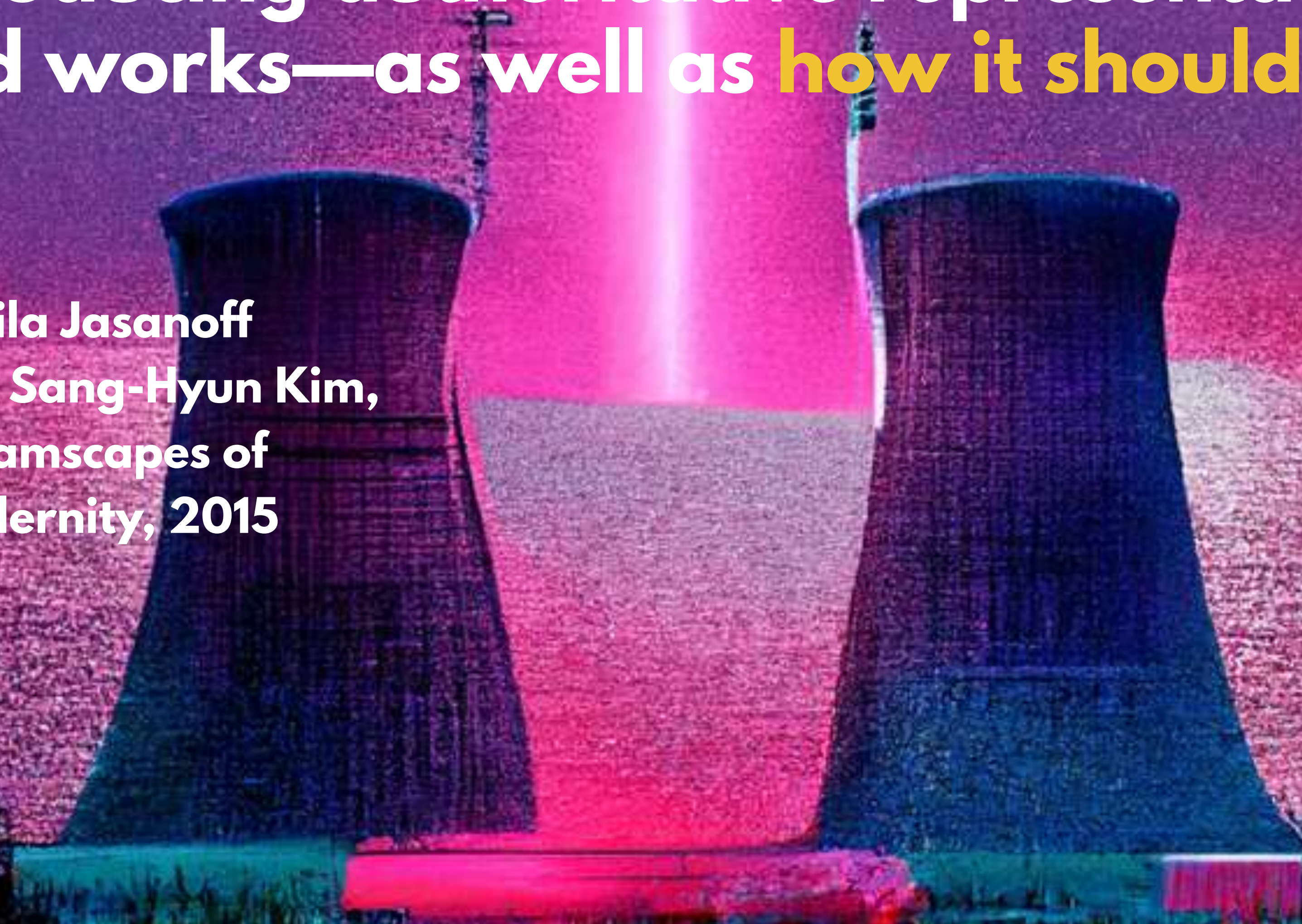
for you:

- Change your view upon cars
- Change the way in which you move through your city
- You can still fly via Schiphol Airport
- If you buy something that should be shipped to your place

Imaginaries 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**”

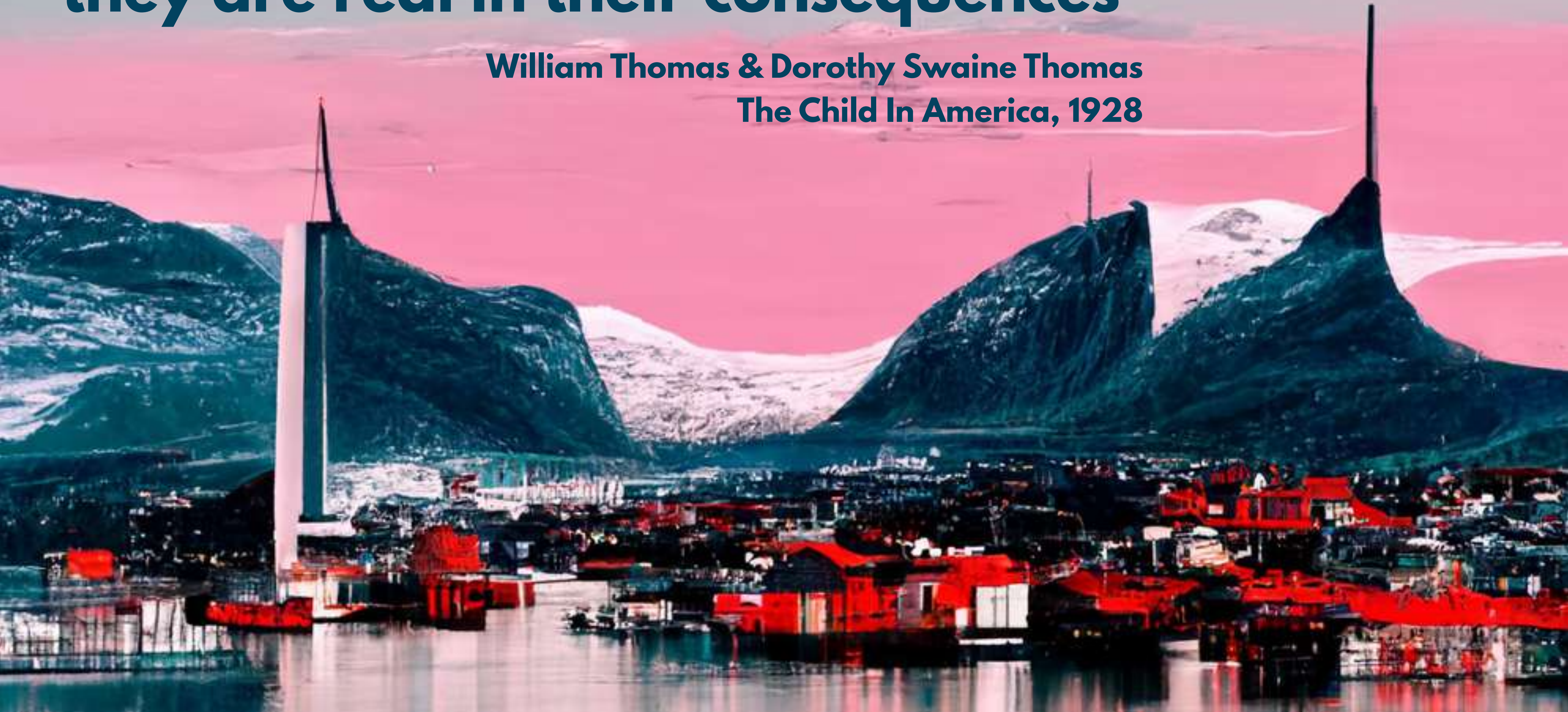


Sheila Jasanoff
and Sang-Hyun Kim,
*Dreamscapes of
Modernity*, 2015



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

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





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What are the dominant imaginaries we have of (sustainable) futures?

What is contested?

IMAGINE sets out to research the power of *cultural imaginaries* of sustainable futures. We understand imaginaries as complex networks of ideas, ideologies, utopias, dreams and knowledge that are spun between actors within and between cultural contexts. **By unpacking and disentangling different ways of imagining the future, IMAGINE will produce new knowledge about the dominant imaginaries of the present that project our sustainable future.** In doing so, we aim to create a democratic space for discussing controversies open to public dialogue and impact current practices.



“For let us make no mistake: the climate crisis is also a crisis of culture, and thus of the imagination”
(Ghosh, 2018, p.9)

OSLOMET



TU/e



● NORSK FOLKEMUSEUM



<https://imagine.oslomet.no>

how does imagination relate to transitions?



how does imagination relate to (just) transitions?



FOUR AREAS OF CO-EVOLVING KNOWLEDGE & SKILLSETS

**imaginaries
as co-created visions
of futures**

Co-created visions of long-term futures that are sustainable, equitable & desirable inform projects in the present, & **act as 'steps' along a transition pathway** toward the future.

**working with
imaginaries in
the design
process**

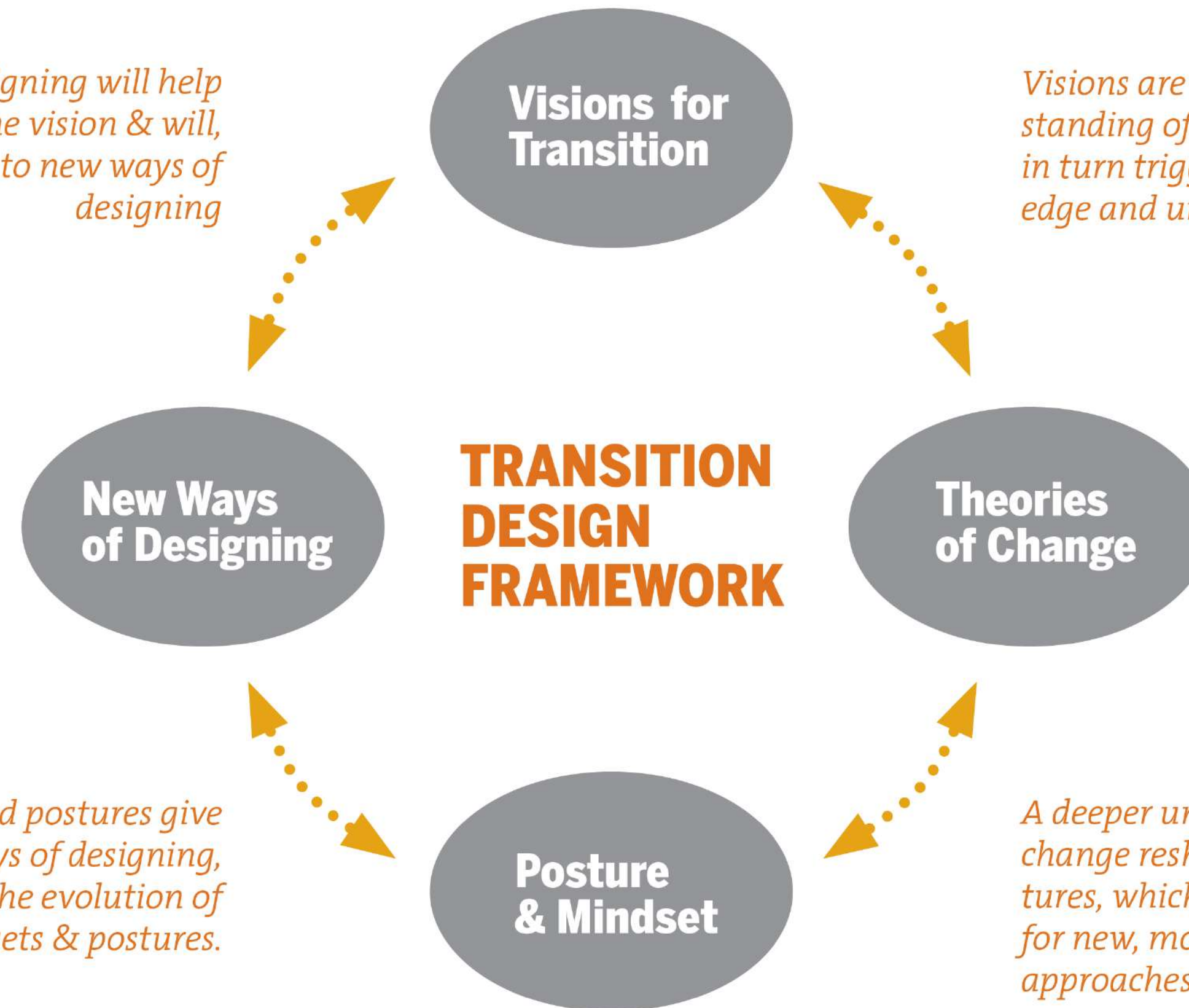
Designing systems interventions that amplify existing efforts and that **solve for multiple issues**, simultaneously, over many years or even decades.

New ways of designing will help realize/evolve the vision & will, in turn, give rise to new ways of designing

Visions are informed by a deep understanding of systems. These visions in turn trigger searches for new knowledge and understanding.

**understanding
(often tacit)
imaginaries of
how change
happens**

Theories from different fields & disciplines inform a deep understanding of the **dynamics of change** within complex, **open systems** (and wicked problems).



**imaginaries
as mindsets
and worldview**

Conference Paper



Full-text available




A Vocabulary for Visions in Designing for Transitions




June 2018
DOI: [10.21606/dma.2017.558](#)

Conference: Design Research Society (DRS) 2018 · At: University of Limerick, Ireland · Volume: Proceedings of DRS2018, Vol. 1

 Dan Lockton ·  Stuart Candy



Research Interest   36.4

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0 new

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Abstract and figures

Visions of sustainable futures have been proposed as a key component of transition design, offering a way for today's situations and design proposals to be compared and critiqued in the light of desired future states. Such ambitions are necessarily wide-ranging, and call for drawing together strands on design and speculation from diverse sources. Here we seek to add to the momentum by exploring a set of concepts relating particularly to this role of vision in designing for transitions. Building on perspectives and projects from other fields, we present elements of a visionary vocabulary, situating these terms in relation to challenges and opportunities for transition thinking and practice in design research.

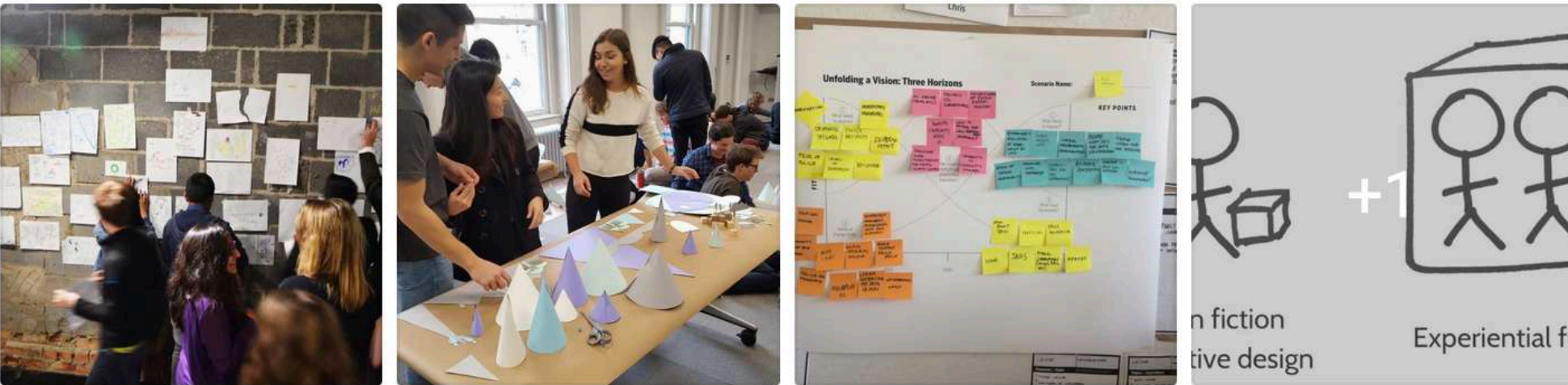


Figure content uploaded by [Stuart Candy](#)

Author content


Related research

**Journal of Futures Studies Perspective
Testing the 'Thing from The Future
Minecraft Education edition' with
secondary education students**

Article

Full-text available

January 2022

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how can design methods
help people imagine,
explore, and experience
different futures,
for themselves and
society more widely?



A wide-angle photograph of a golf course. In the foreground, a large, well-maintained green fairway stretches across the frame. To the left, a small figure of a person is visible on the grass. In the background, a dense line of tall, dark green trees separates the golf course from a city skyline. Several modern skyscrapers are visible, including a prominent one with a red sign on top. The sky is a pale, hazy blue.

**we need public
imagination**

A vibrant green golf course with a person on the left and a city skyline in the background. The text "we need participatory imagination" is overlaid on the right side of the image.

we need
participatory
imagination

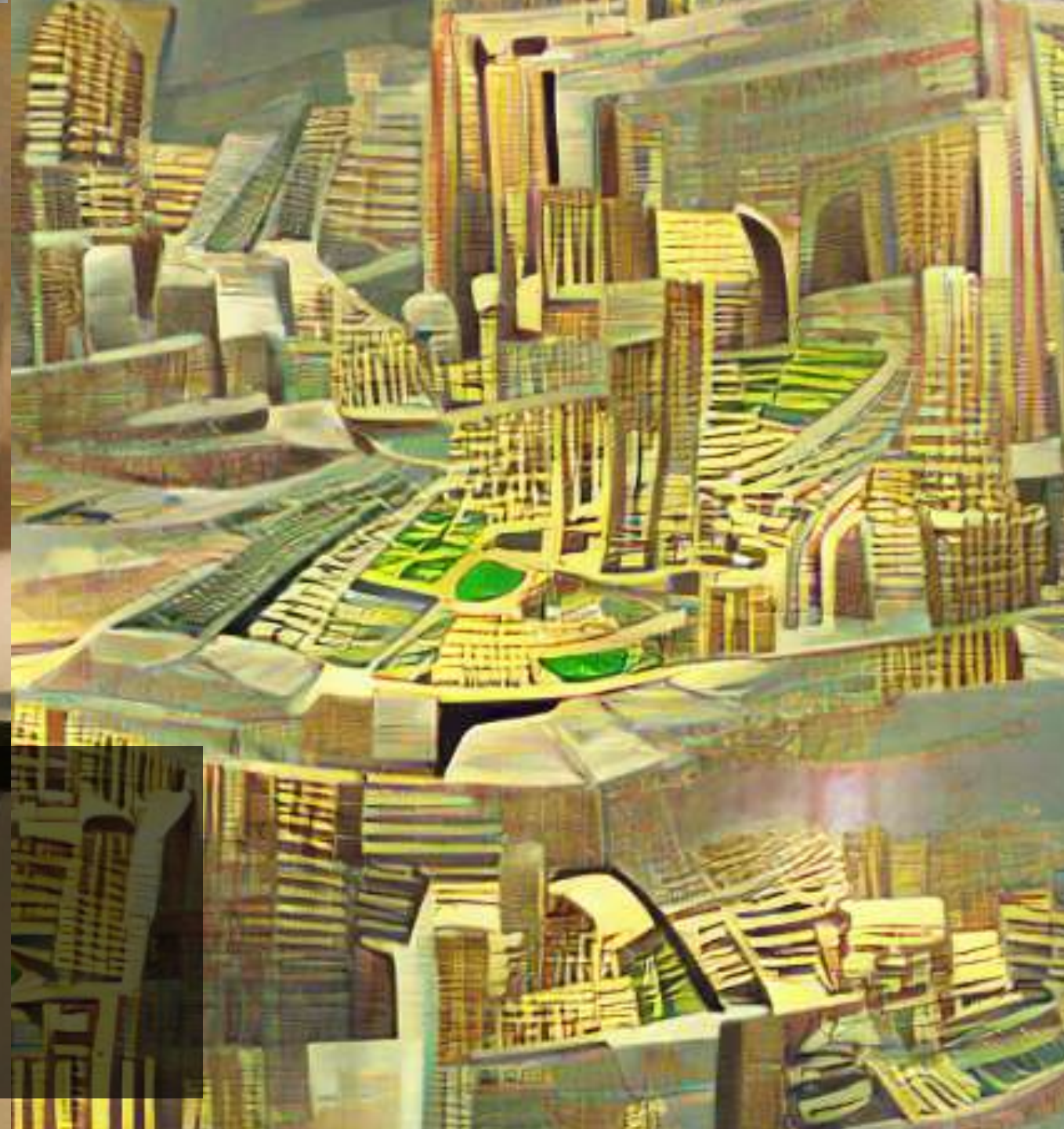
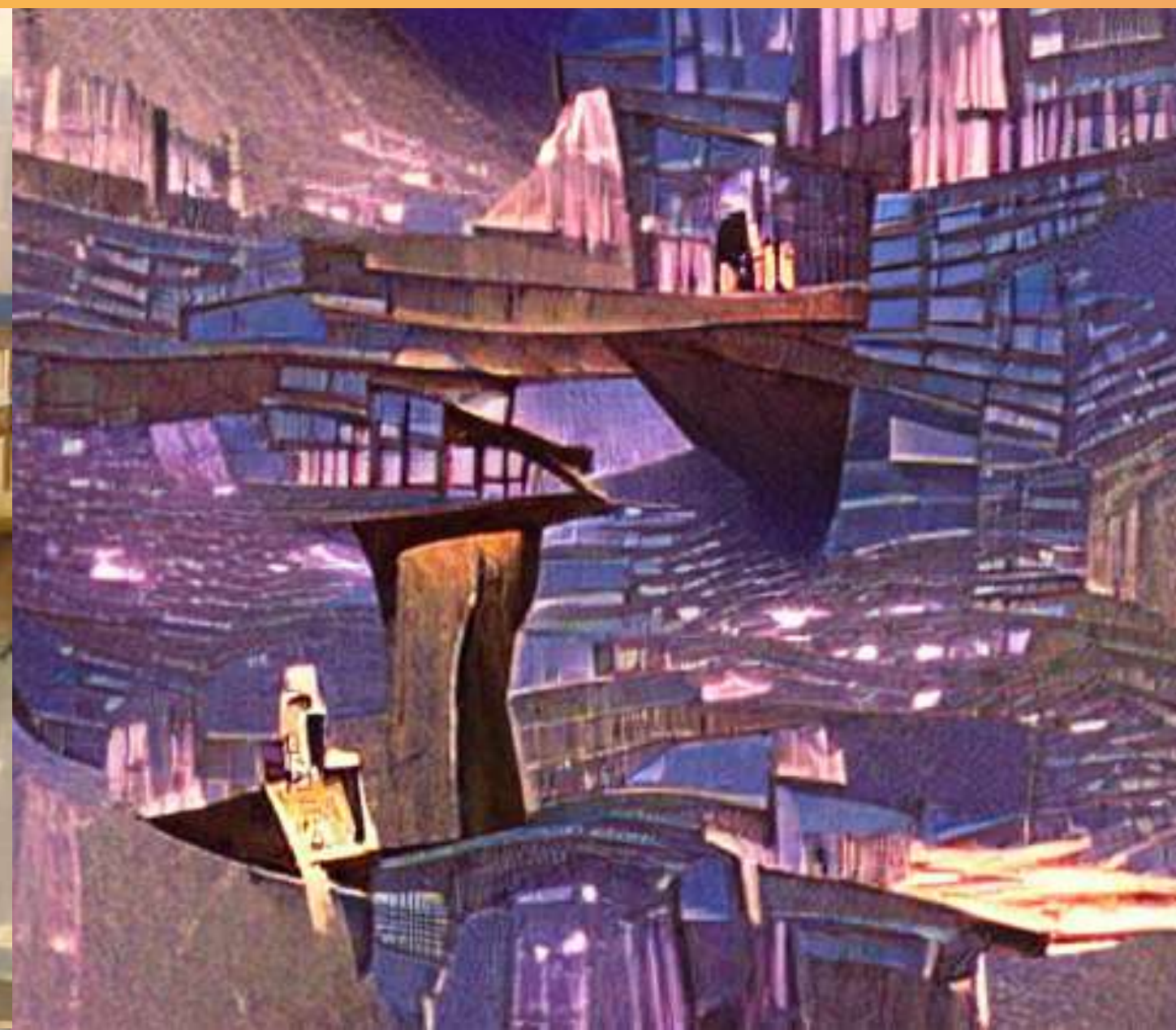
A vibrant green golf course with a person on the left and a city skyline in the background. The text "we need collective imagination" is overlaid in the lower right.

we need
collective
imagination



‘the future’...

Artwork by Charles Schridde, for Motorola. 1960s



...vs. futures

Artwork by VQGAN+CLIP image generator, 2021
with prompt 'A future city'

338



N. HOLBERT ET AL.

futures including personal and communal histories

Nathan Holbert, Michael Dando & Isabel Correa (2020) *Afrofuturism as critical constructionist design: building futures from the past and present*, *Learning, Media and Technology*, 45:4, 328-344



Figure 6. Jalise's city included various districts with each producing different resources (such as water, power, or food) sustainably. The city was built using found and recycled materials, African textiles, as well as lasercut acrylic and paper.

These ideas are implemented throughout her city: Bio-waste produced by a farm community is collected and used for energy; 'buildings are gonna have green roofs;' and skyscrapers are made with a glass-like substance that 'collects solar energy through the walls, and converts that to energy;' etc. Every aspect of Jalise's proposed city is interconnected so that the city is self-sustaining and environmental resources are protected. Also, her city had a marked African aesthetic, expressed through thoughtful selection of colors and fabric textures.

Rather than imagine an entirely new futuristic city, Tasia's environmental concerns are centered on everyday problems and experiences she faces as a resident in a large urban city. Tasia states,



Home



Notifications



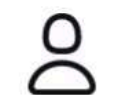
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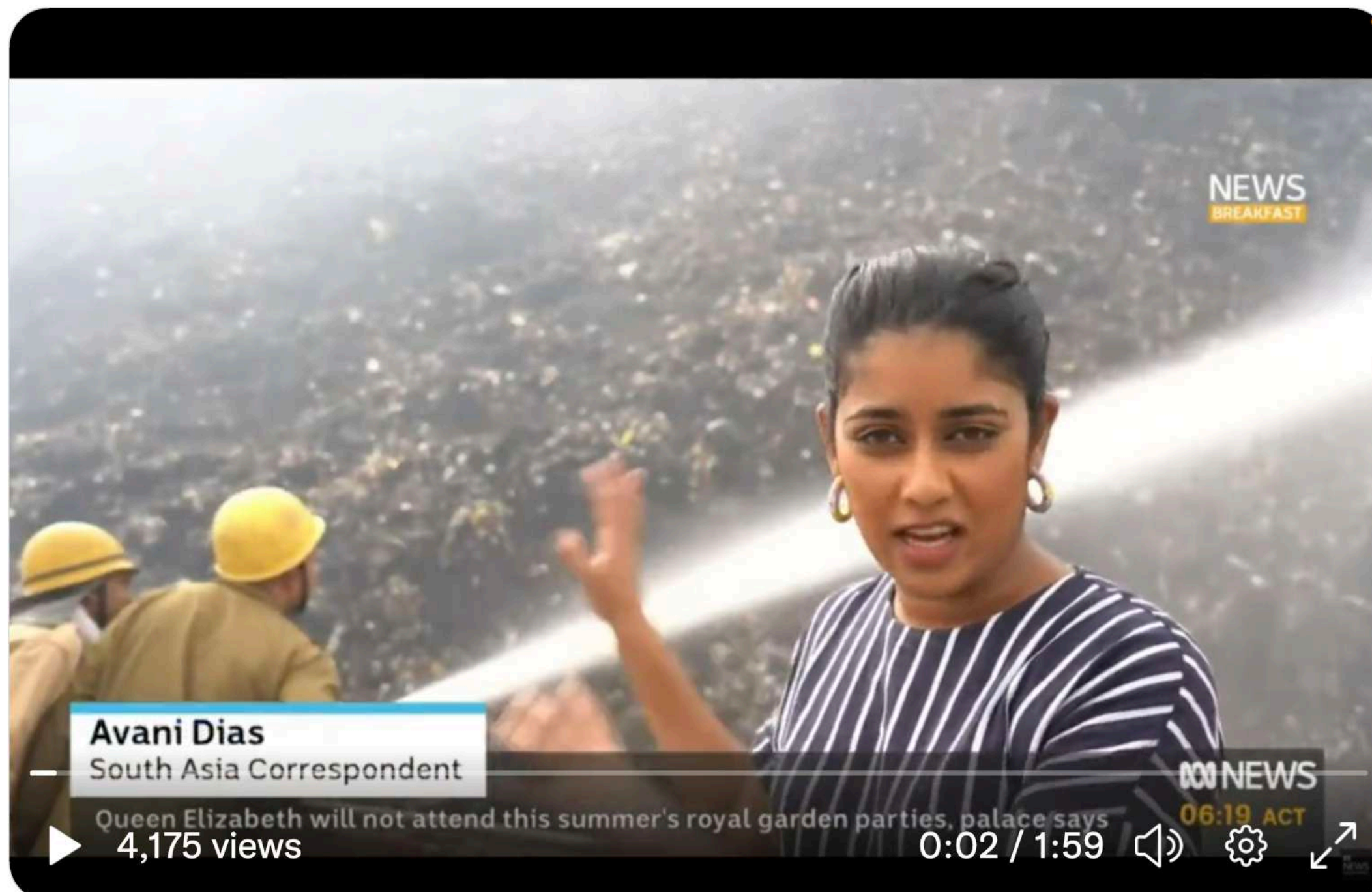
Avani Dias

@AvaniDias



Wondering what climate change looks like?
Researchers say it's this 17 storey high rubbish pile in Delhi that spontaneously caught fire during a record breaking heatwave. Toxic fumes are affecting people who live nearby. A literal bin fire.

My @abcnews cross on this:



6:15 AM · May 6, 2022 · Twitter for iPhone



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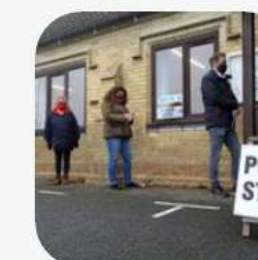
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Local Elections results: latest updates as the votes are counted



British Royal Family · Trending

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2,698 Tweets

**‘The future is already here
— it’s just not very evenly
distributed’**

William Gibson, 1999



‘Cars lumbered past like ponderous elephants of rusty steel, not so different from the cars of 30 years ago, and seemed not to belong in the same world as the tattooed kid punching code into his laptop nearby.








Under the spell of this book, I suddenly understood my surroundings not as a discrete contemporary tableau but as a hodgepodge of 1910, 1980, 2011 and 2020’


Pagan Kennedy, 2012, reviewing Gibson’s *Distrust That Particular Flavor*





**what bits of our
future(s) are others
already living?**



**ClimateVisuals**
a Climate Outreach project

Climate Visuals

Evidence

Impact

Licensing

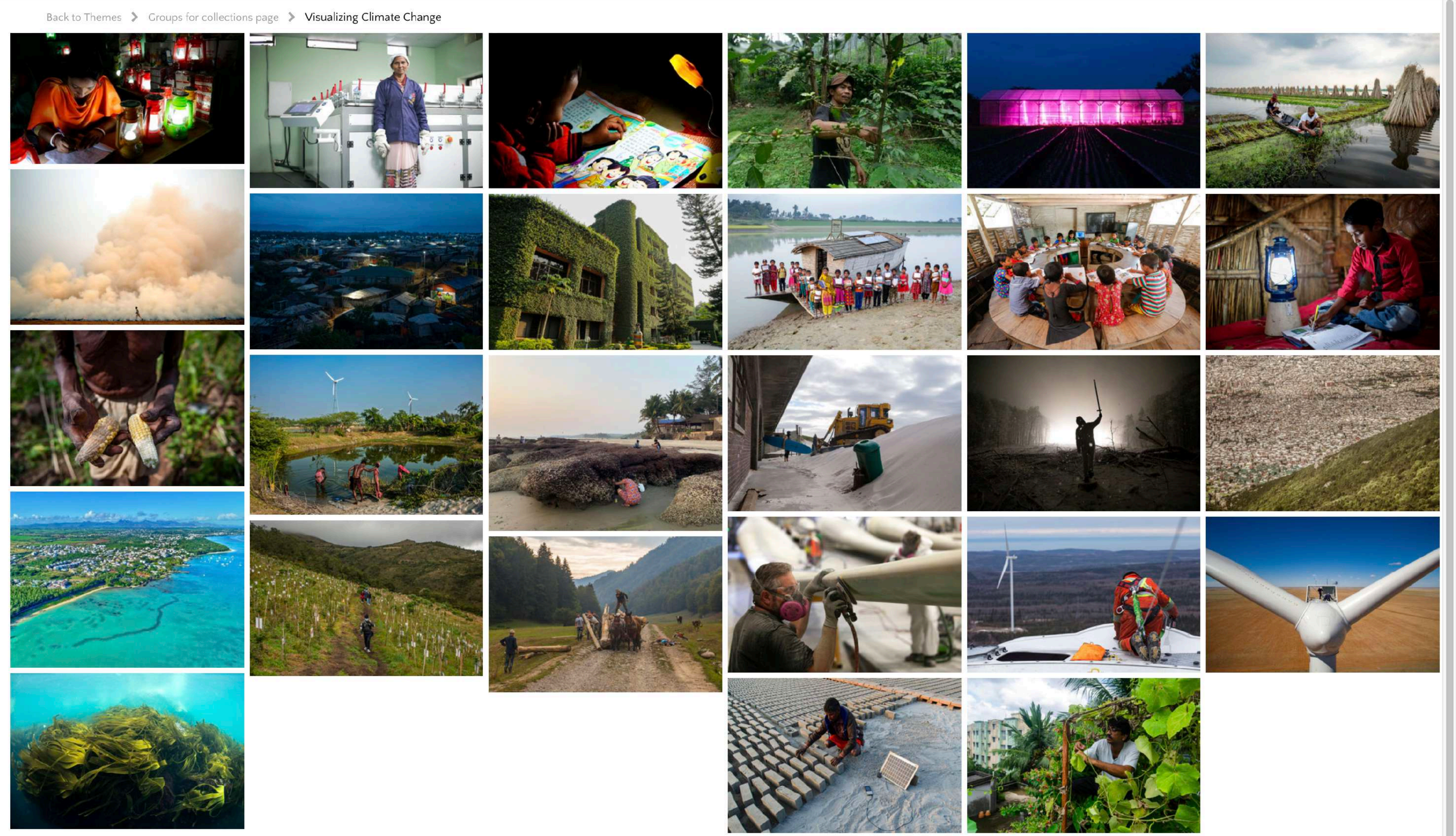
Climate Outreach

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Back to Themes > Groups for collections page > Climate Visuals' Principles



Climate Visuals' Principle 1

1. Show Real People, not staged photo-ops
429 assets



Climate Visuals' Principle 2

2. Tell New Stories
339 assets



Climate Visuals' Principle 3

3. Show climate causes at scale
76 assets



Climate Visuals' Principle 4

4. Climate impacts are emotionally powerful
143 assets



Climate Visuals' Principle 5

5. Understand your audience
54 assets



Climate Visuals' Principle 6

6. Show local (but serious) climate impacts
193 assets



Climate Visuals' Principle 7

7. Be very careful with protest imagery
17 assets

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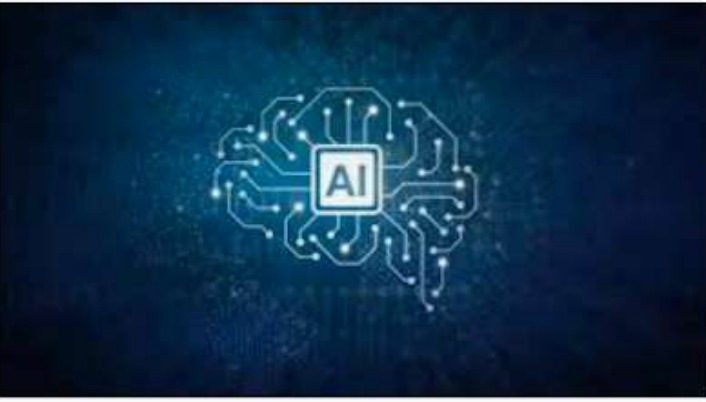
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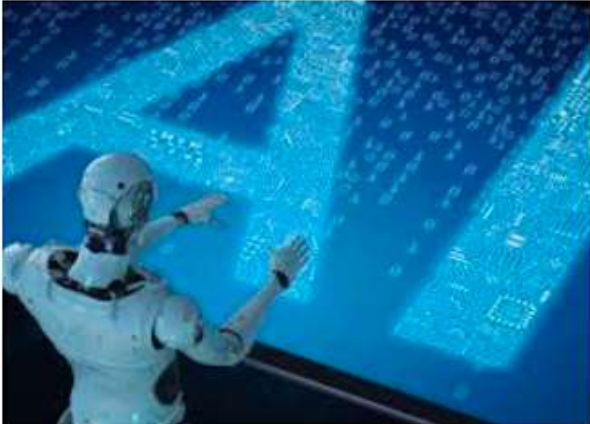
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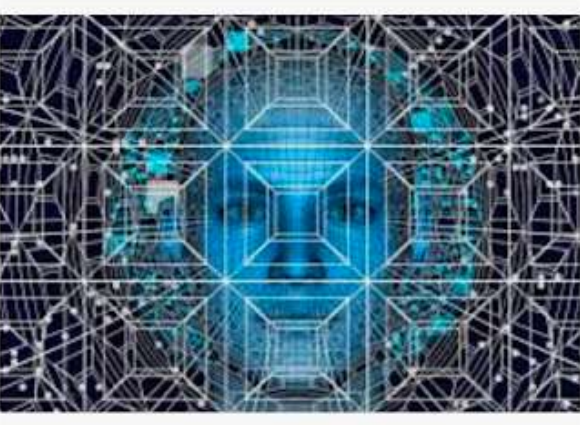
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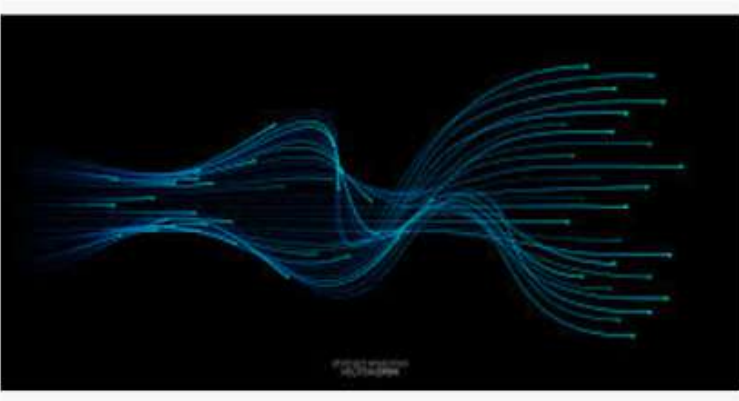
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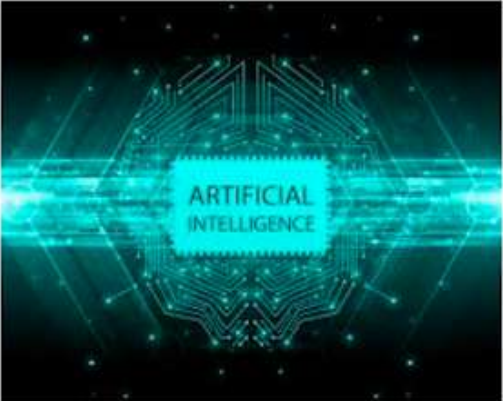
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future cities



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Danielle Baskin
@djbas

I'm so glad we decided to convert the Golden Gate Bridge to train tracks in the late 1970s. Especially since the bridge is not that nice for walking, biking, or driving. Makes commuting to Marin County so much better.
[#dalle](#) [#dalle2](#)

10:33 PM · Apr 26, 2022 · Twitter Web App

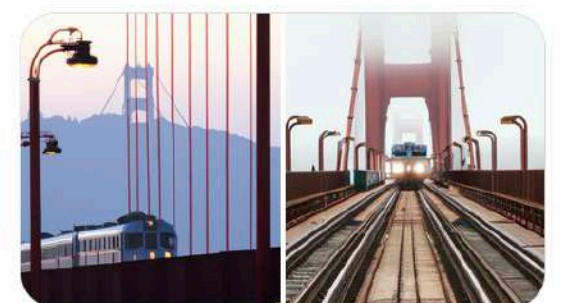
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Danielle B... @djba... · Apr 27
Replying to @djbas

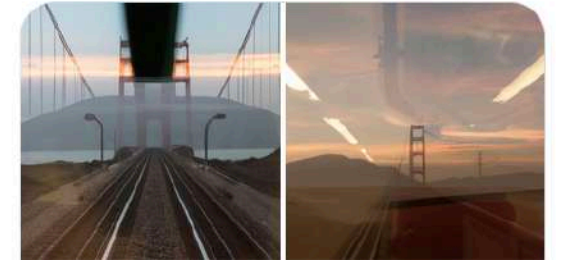
But seriously, I love seeing those train lights in the foggy haze of the Bay.
[🚆 #dalle #dalle2](#)



7 6 241

Danielle B... @djba... · Apr 27

More photos through the window as the train rolls into the Presidio, overlooking Marin in the distance. You're extra lucky if you're traveling during sunset.



San Francisco's Golden Gate Bridge is one of my most favorite train routes in the world. We're so lucky that this is our public transit. ✏️🔥



10:26 PM · Apr 26, 2022 · Twitter Web App

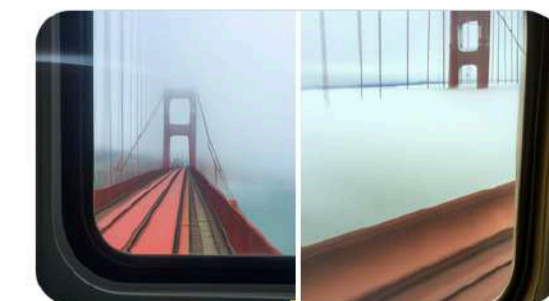
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4,052 Likes



 **Danielle B...** @djba... · Apr 26 ...
Replying to @djaskin

I love watching the fog roll in through the train windows when I take BART to Sausalito. #dalle #dalle2

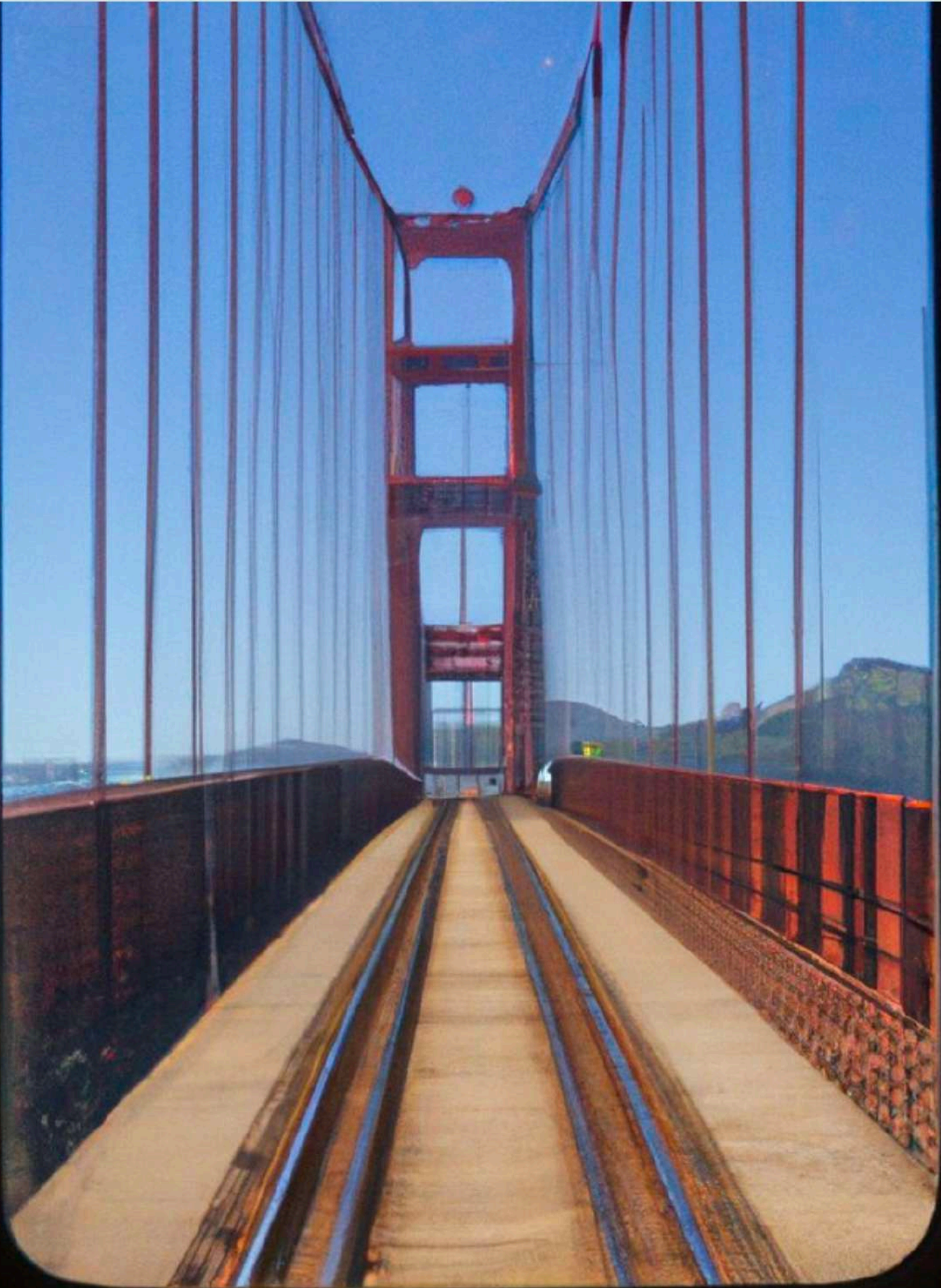


8 26 513

 **Danielle B...** @djb... · Apr 26 · ...

I'm so glad we decided to convert the Golden Gate Bridge to train tracks in the late 1970s. Especially since the bridge is not that nice for walking, biking, or driving. Makes commuting to Marin County so much better. [#dalle](#) [#dalle2](#)





Danielle Baskin @djbaskin

.@OpenAI's DALL-E 2 is sooo good at fully visualizing alternative (and better) timelines.

I also experienced the wistful "This could have been us!" after the first render. *sigh*

Maybe converting dreams quickly into vivid images can convince more people to pursue them.

1:33 AM · Apr 27, 2022 · Twitter Web App

22 Retweets 7 Quote Tweets 389 Likes

Reply

Adam Sch... @ad... · Apr 27 ...
Replying to @djbaskin and @OpenAI
I really like that idea. Could it be that imagined futures is the killer app for DALL-E? Are we gonna see applications in urbanism like "bike friendly Los Angeles street with no traffic jams"?

Danielle B... @djba... · Apr 27 ...
I've been rendering city streets full of bikes. Will it convince car-advocates to adopt a new future? To be continued...

Show replies

Gustav Sv... @GuS... · Apr 28 ...
Replying to @djbaskin and @OpenAI



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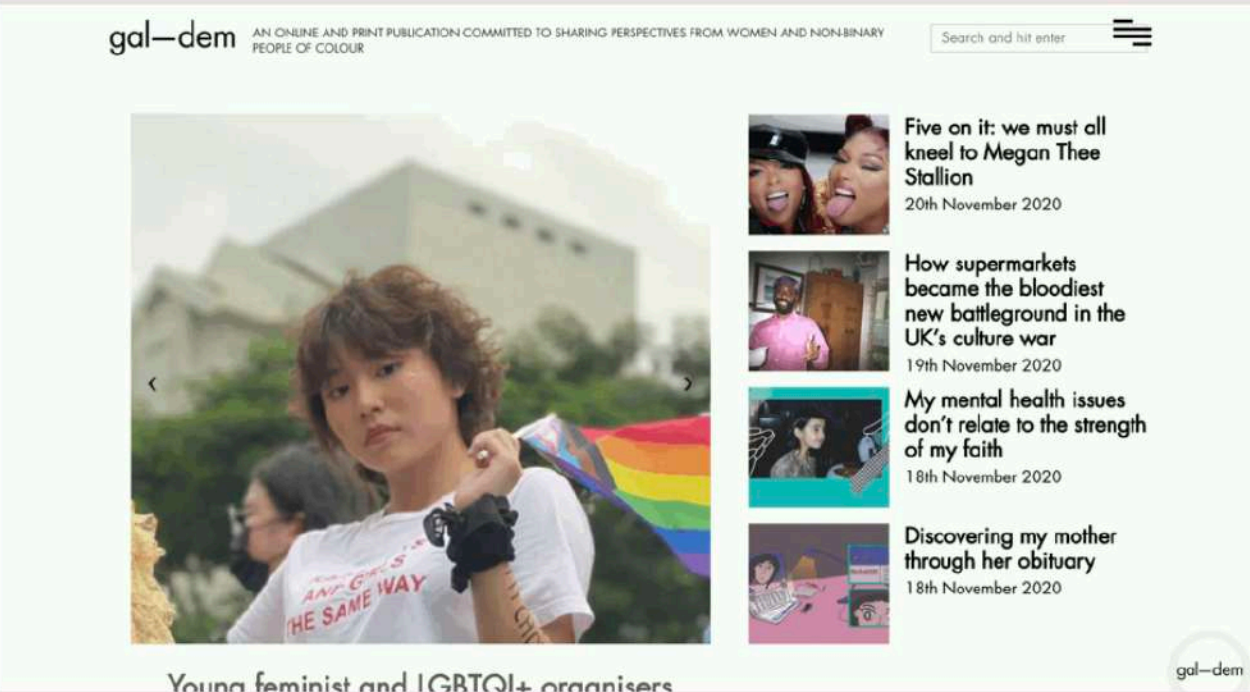
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Cassie Robinson

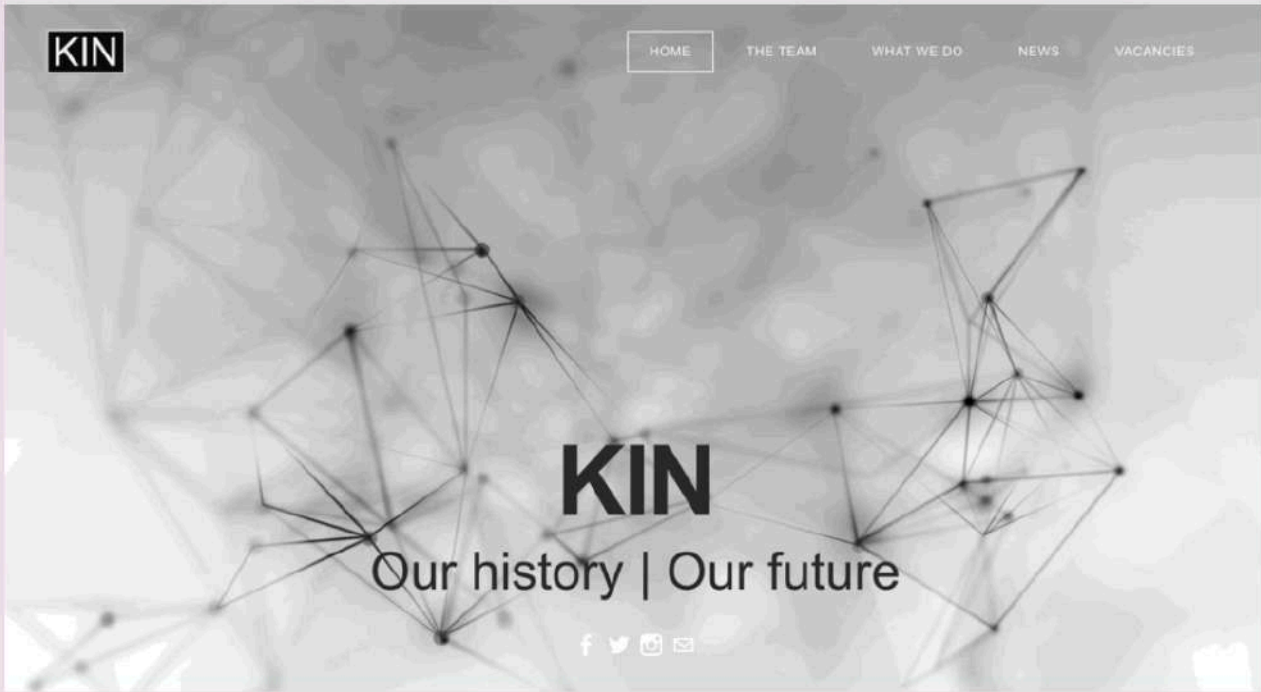
<https://www.cassierobinson.work>

“we are in a *transition* with important questions to ask; these grants are enquiries.”

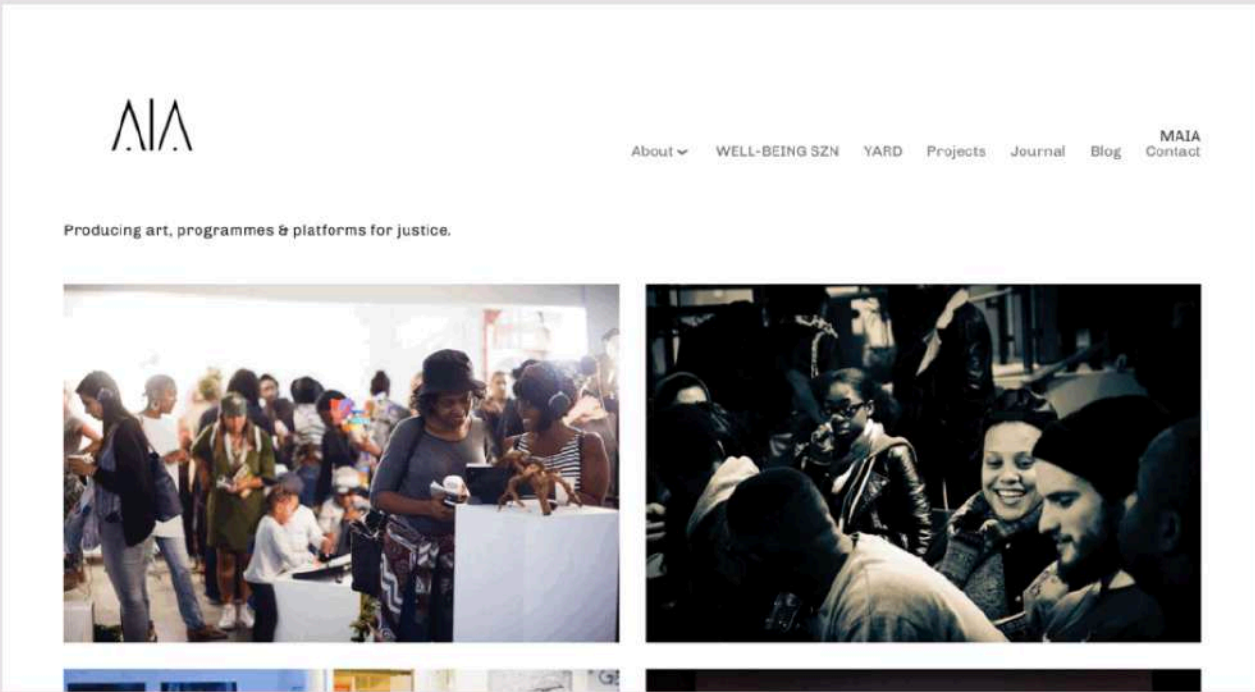
— [From crisis to recovery: Supporting communities to transition from the immediate crisis towards recovery and renewal](#)



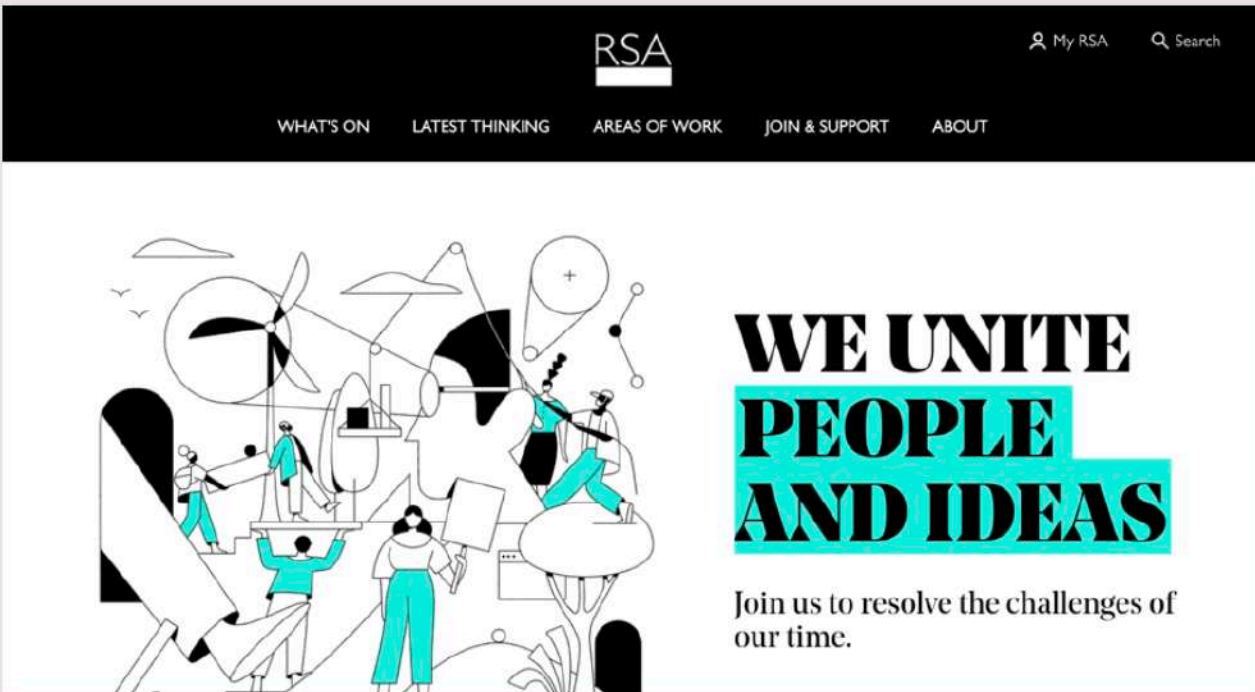
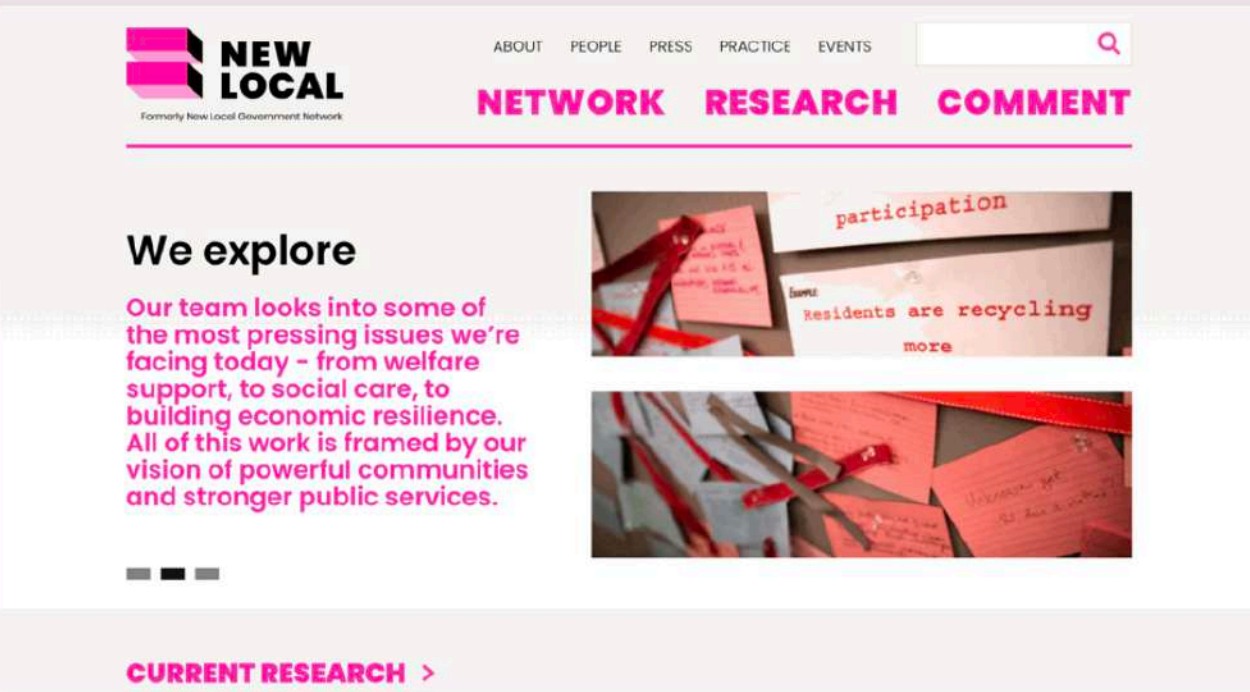
Sending writers to gather ideas for the future from women and non-binary people of colour to be more involved in shaping the future of civil society

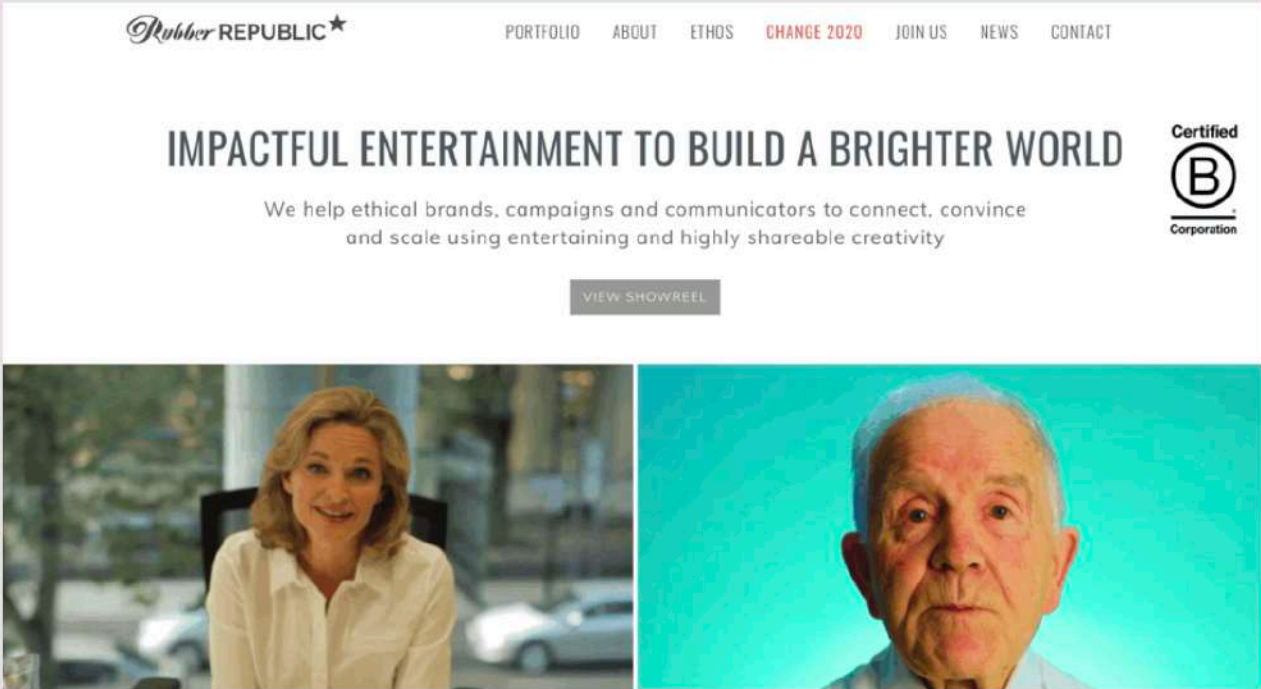


Gathering Black leaders to strengthen and rebuild their communities after the COVID-19 pandemic, resulting in a community-informed future vision



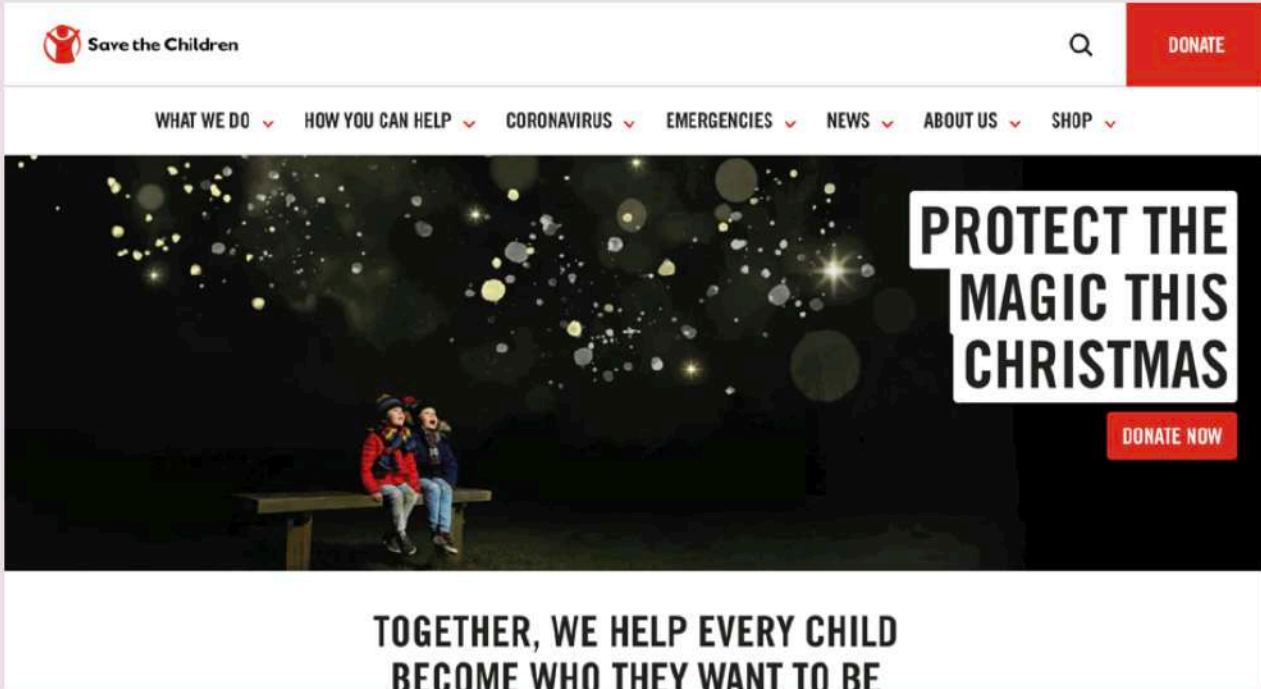
Delving deep into the Black-led interconnection between space, built environs, cultures and community work to repattern society coming out of the long crisis





Project Lifeline by Rubber Republic Labs

Exploring unusual and empowered responses to COVID-19 to find core shared themes and feelings to unite us



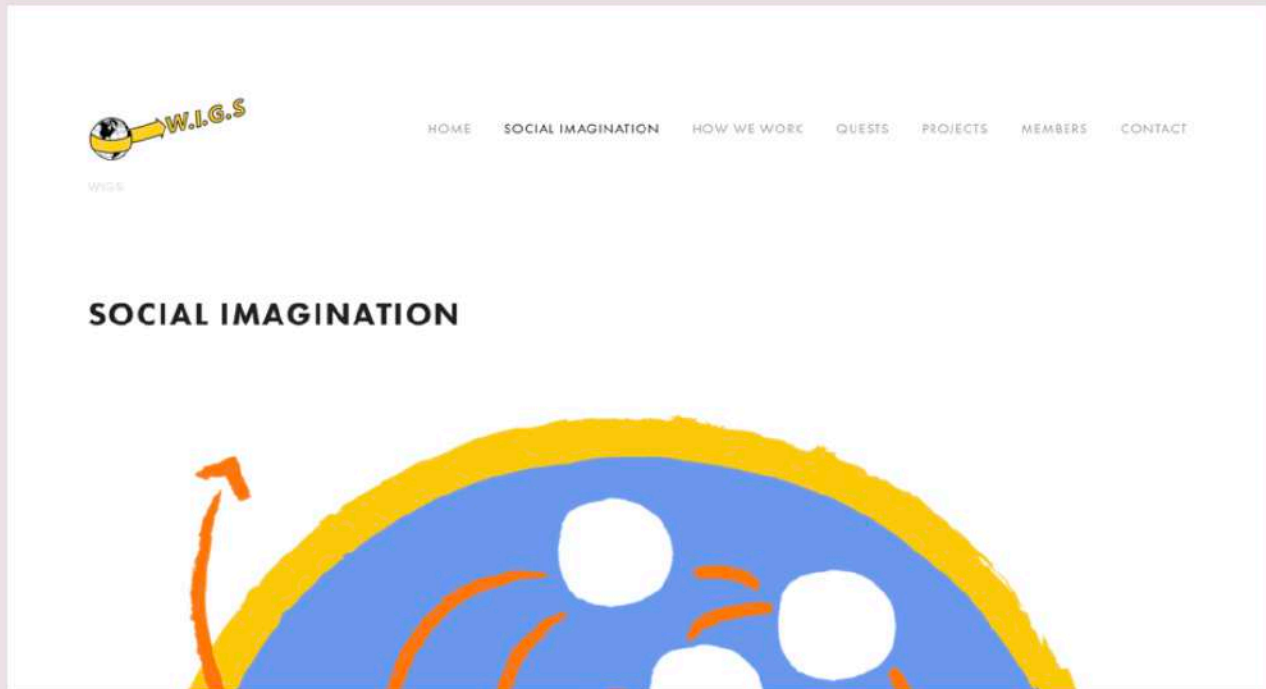
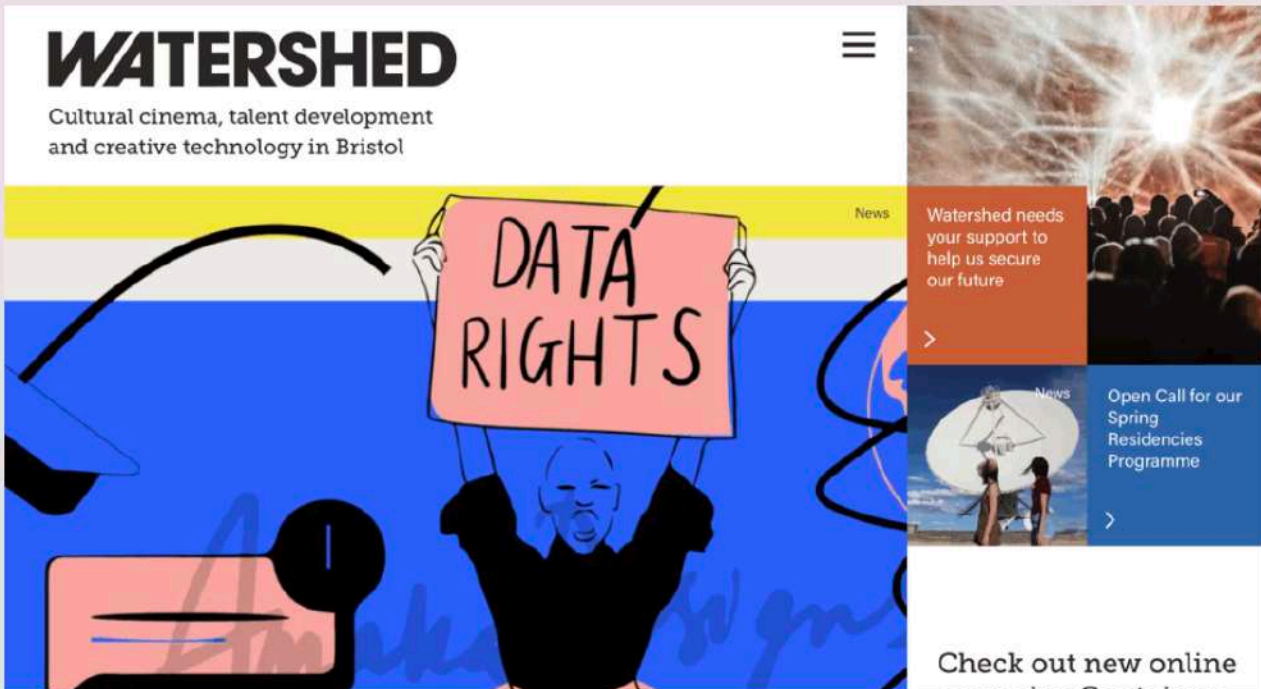
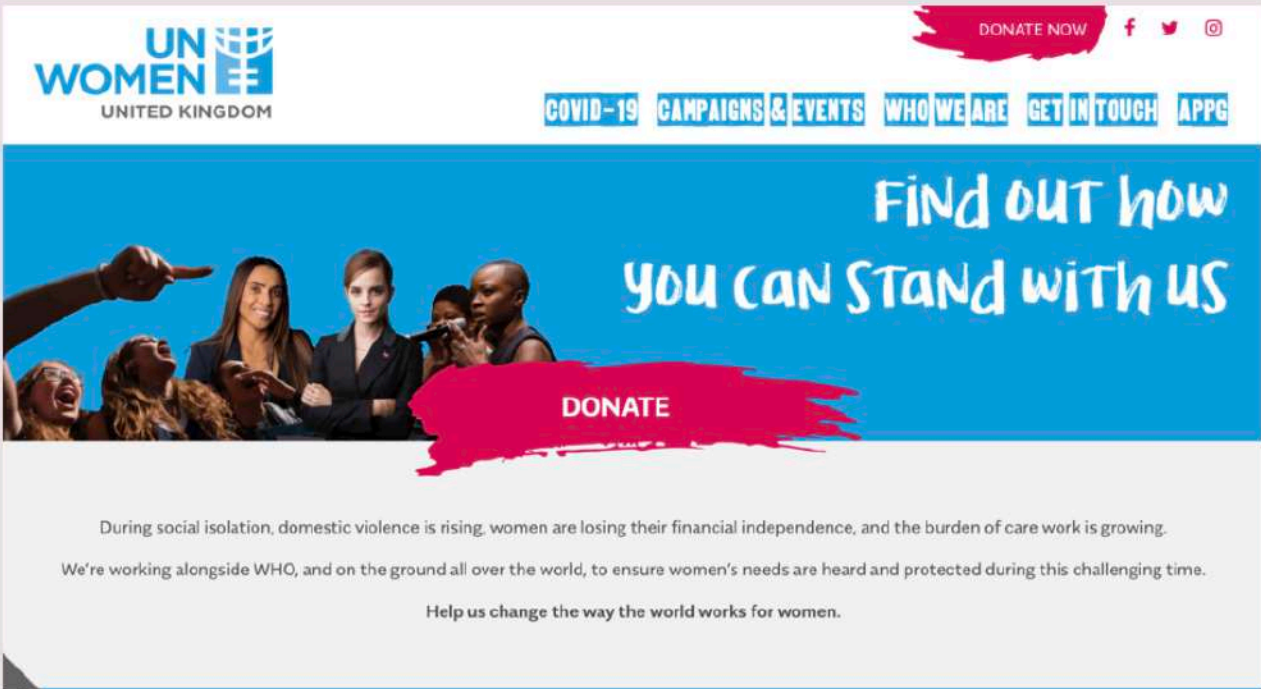
Changing Narratives for the Future of Childhood by Save the Children

Local and national workshops designed to unite across diverse communities to develop a compelling direction for childhood development



Hope In The Heat by Somerset House

Developing coherent future visions with a newly formed Youth Collective about living in the inevitable hotter world





Depicting new narratives for Brussels

Images of the future inspire and can shape societies. Starting from your questions about the city, we explore what might come next. Every six months we select one question to work around, together with citizens, entrepreneurs, experts and creatives. With them, we choose the futures we prefer and turn them into stories.

Current exploration



Future Fertilisers 2035



Windows to Brussels 2030

BRUSSELS FROM THE SKY • BRUSSELS FROM THE SKY • BI

BRUSSELS AND YOU • BRUSSELS AND YOU

WHAT IS YOUR STORY?

HERE!? • QUESTIONS ABOUT BRUSSELS IN 2030 HERE!? • Q!

What do you want to know about Brussels in 2030?
20 QUESTIONS IN SPACE

😊

Bxl
How will Belgium demonstrate a united country to address all social issues, that also impact our climate?

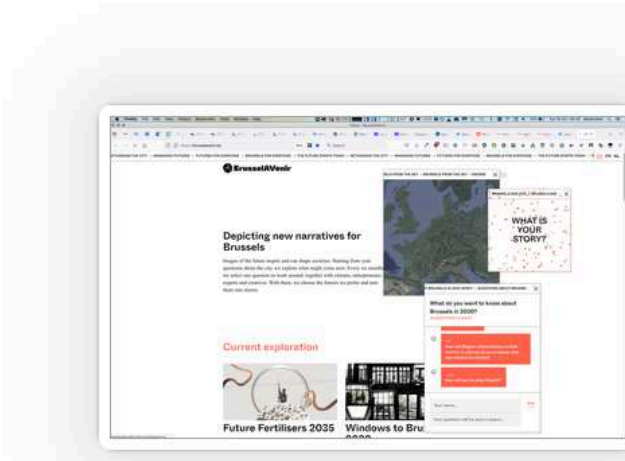
😊

Lucie
How will we live after Covid19?

Your name... Ask

Your question will be sent in space...

BrusselAVenir
Khushboo Balwani,
Ellen Anthoni



Jaouad goes to chat with
the plantain vendor
in the first carriage.

BrusselAVenir
Khushboo Balwani,
Ellen Anthoni



FOUR AREAS OF CO-EVOLVING KNOWLEDGE & SKILLSETS

**imaginaries
as co-created visions
of futures**

Co-created visions of long-term futures that are sustainable, equitable & desirable inform projects in the present, & **act as 'steps' along a transition pathway** toward the future.

**working with
imaginaries in
the design
process**

Designing systems interventions that amplify existing efforts and that **solve for multiple issues**, simultaneously, over many years or even decades.

New ways of designing will help realize/evolve the vision & will, in turn, give rise to new ways of designing

Visions are informed by a deep understanding of systems. These visions in turn trigger searches for new knowledge and understanding.

**understanding
(often tacit)
imaginaries of
how change
happens**

Theories from different fields & disciplines inform a deep understanding of the **dynamics of change** within complex, **open systems** (and wicked problems).

**New Ways
of Designing**

**TRANSITION
DESIGN
FRAMEWORK**

**Theories
of Change**

**Posture
& Mindset**

Changes in mindset and postures give rise to new ways of designing, which, in turn, lead to the evolution of new mindsets & postures.

A deeper understanding of systems change reshapes mindsets and postures, which in turn, ignites searches for new, more relevant knowledge & approaches.

Living in & through **transitional times** requires a change in mindsets & postures: mindfulness, humility, 'service,' self-reflection, **radical collaboration**, and **openness and respect for 'other'** (including the 'non-human')

**imaginaries
as mindsets
and worldview**



**‘Future
Everyday’**

**Eindhoven
University of
Technology**

**Eindhoven,
Netherlands**

imaginaries lab

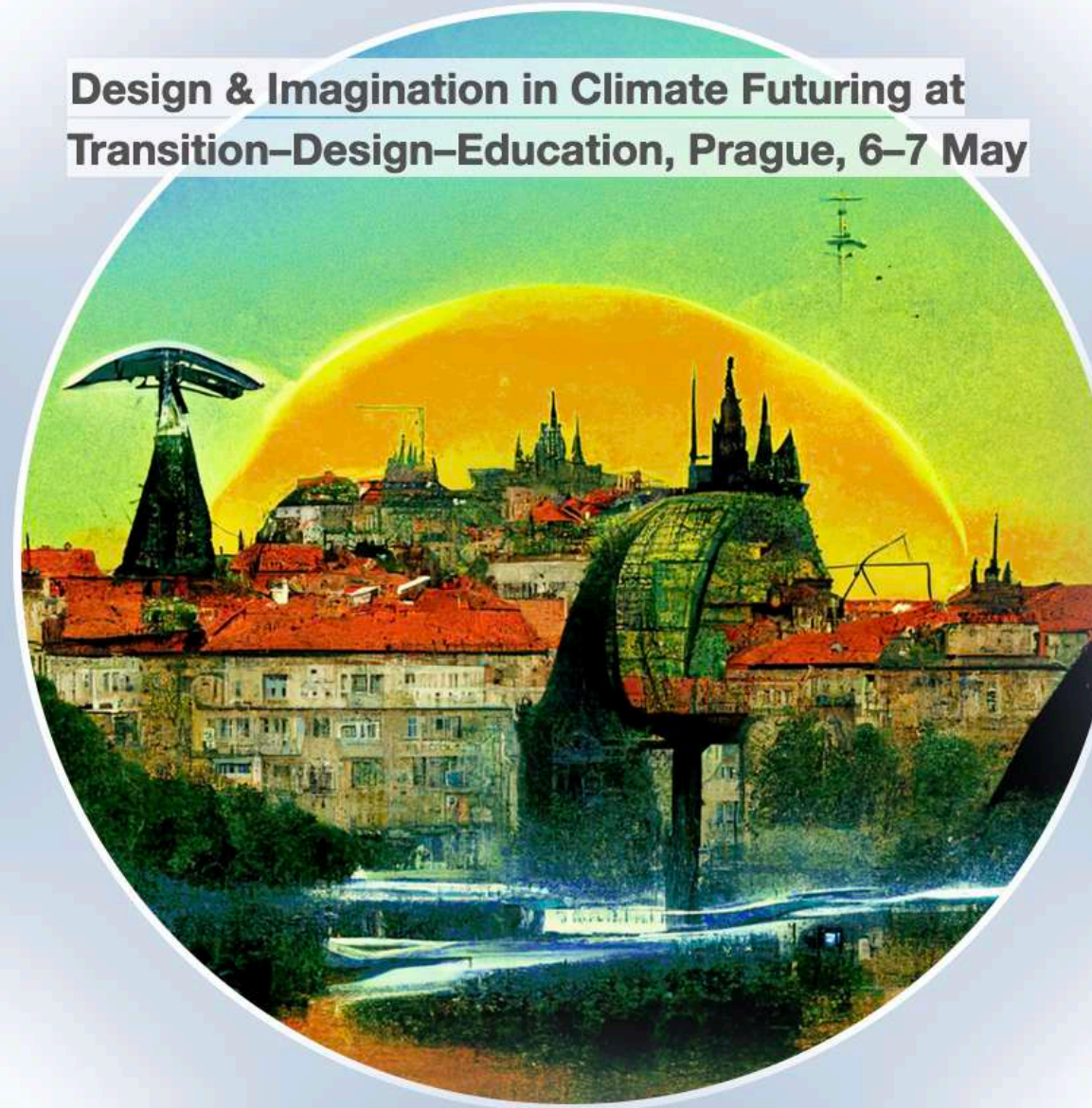
We're a design research studio creating tools to support people's imagining—
new ways to understand, and new ways to live. →

imaginari.es

Welcome to the Imaginaries Lab



Design & Imagination in Climate Futuring at
Transition-Design-Education, Prague, 6–7 May



World Building with New Metaphors: Columbia
GSAPP TechSHOPS, 14 February



IMAGINE: Contested Futures of Sustainability



Imaginaries Lab 2021 Review



New Metaphors





imaginaries lab

Carnegie Mellon

creating design tools to
understand
how people
understand and imagine



creating design tools to
help people
understand and imagine
in new ways



creating design tools to
help people
imagine new
ways of living



**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
& personal
futuring**

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







Katrien van Riet, Gizing Khalandi, and Jelle Wijers
TU Eindhoven



**Katrien van Riet, Gizing Khalandi, and Jelle Wijers
TU Eindhoven**

Imagination Landscapes

imaginari.es/landscapes

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

imaginari
lab

Participatory futuring & design with landscape metaphors



Dan Lockton
Debbie Ricketts
Tamar Zea-Wolfson
Lisa Brawley
John Fass
Laura Forlano
Manuela Aguirre Ulloa
2016 to date

imaginaries
lab

design with landscape metaphors



Imagination Landscapes

This landscape is a recreated composite of elements from participants in a number of (group) workshops run using the landscapes kit, focused on imagining the future, with a small update for COVID-19 (the red whirlpool).

A particular focus on branching possible climate futures is evident here, building on the Shared Socioeconomic Pathways concept, itself re-interpreting the IPCC's Climate Pathways model.

Humanity faces difficult choices over what lies ahead: even the most optimistic path is not easy, with 'bridges' needed to help us transition to different ways of life amidst global climate crises (and future pandemics). Who gets left behind, forced onto the wrong paths by predatory inaction, entrenched interests, and systemic oppression?

imaginaries
lab

Metaphors and futures

When we think about 'the future' (and the past) we often use metaphors related to place, distance, direction, or landscapes. We talk about pathways, horizons, crossroads, moving into new fields or areas. Seeing others' ways of thinking about futures—personally, and at societal scale—can reveal our shared (or not) imaginaries of the future, and our agency in the world.

Imagination Landscapes makes this physical and shareable: a kit of landscape elements to facilitate dialogue between stakeholders in an age of crises. We have developed this approach via exploration of mental health, interdisciplinarity, personal career paths, and group project and workplace dynamics, as well as futures.

The landscapes kit complements our New Metaphors creative toolkit.

imaginaries
lab



making imaginaries tangible

inter- disciplinarity

IIT Institute of Design

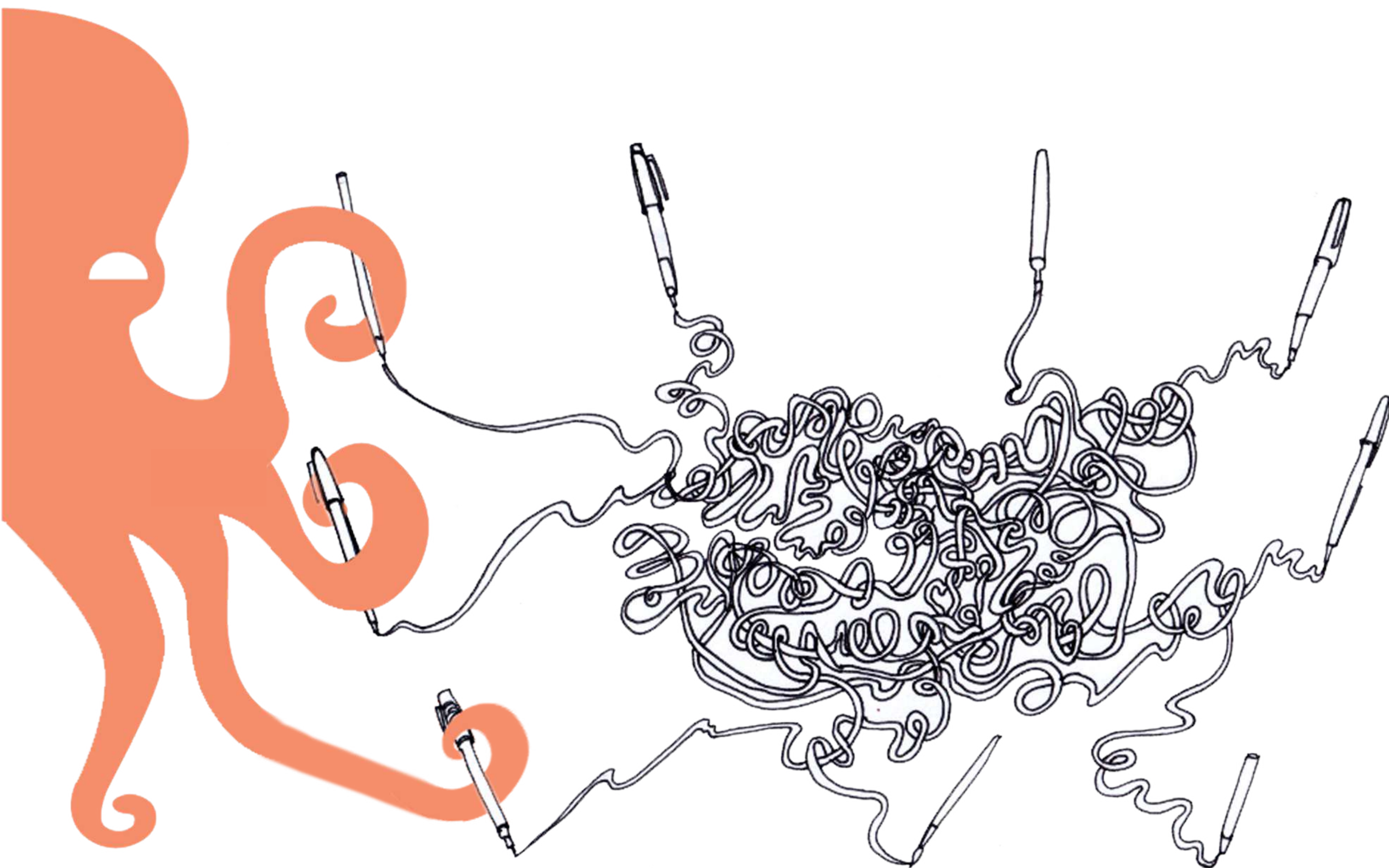
**SYSTEMIC
DESIGN**

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







INTERDISCIPLINARY EXCHANGE

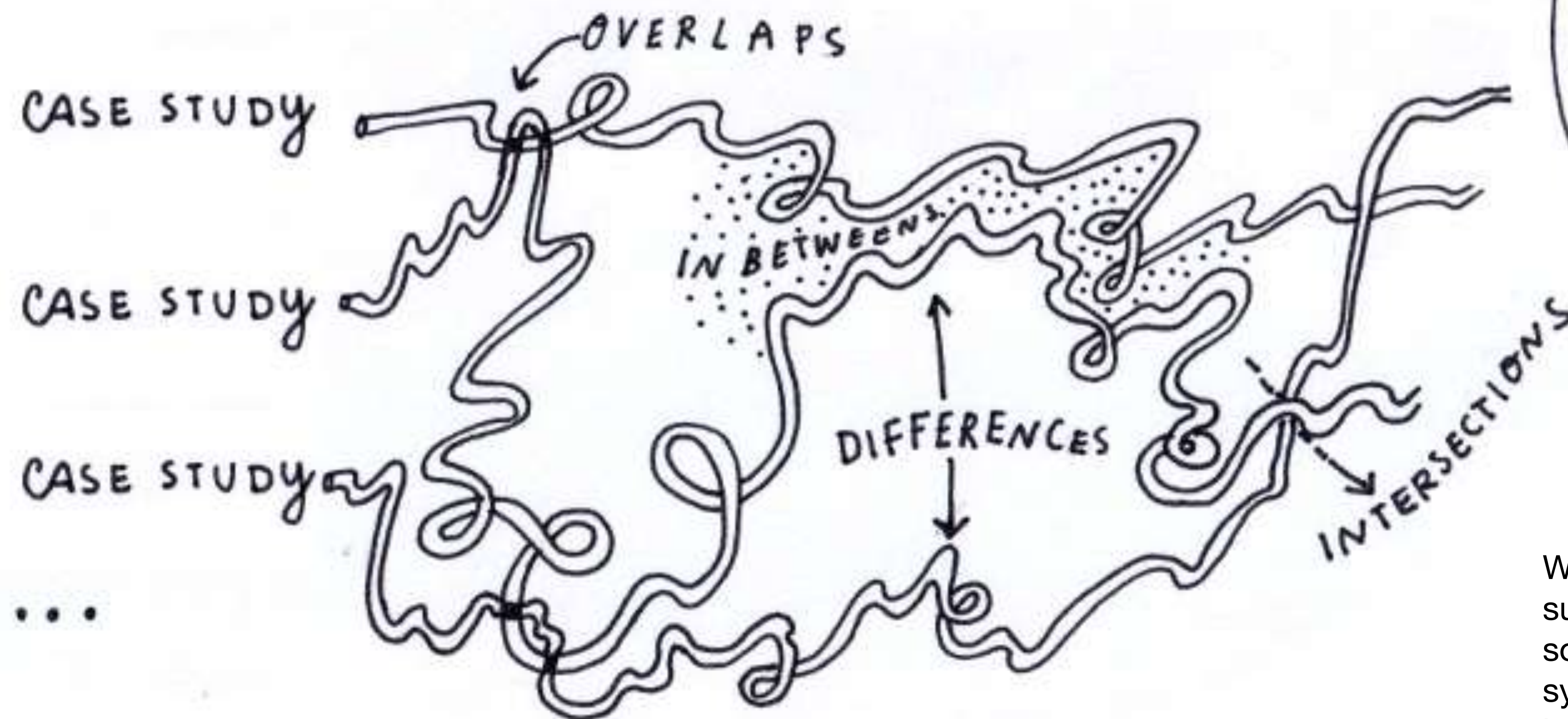
Playing With The Trouble:

Games as a method for transformative collaborations

Jet Vervoort
Joost Vervoort
Josie Chambers
Maikel Waardenburg
Raimon Ripoll Bosch
Joyce Browne
Suzan Ruijtenberg
Dan Lockton
Jessica Duncan



CONNECTING DIFFERENT PROJECTS



DOMAINS

SUSTAINABLE
DEVELOPMENT
GOALS

PURPOSE

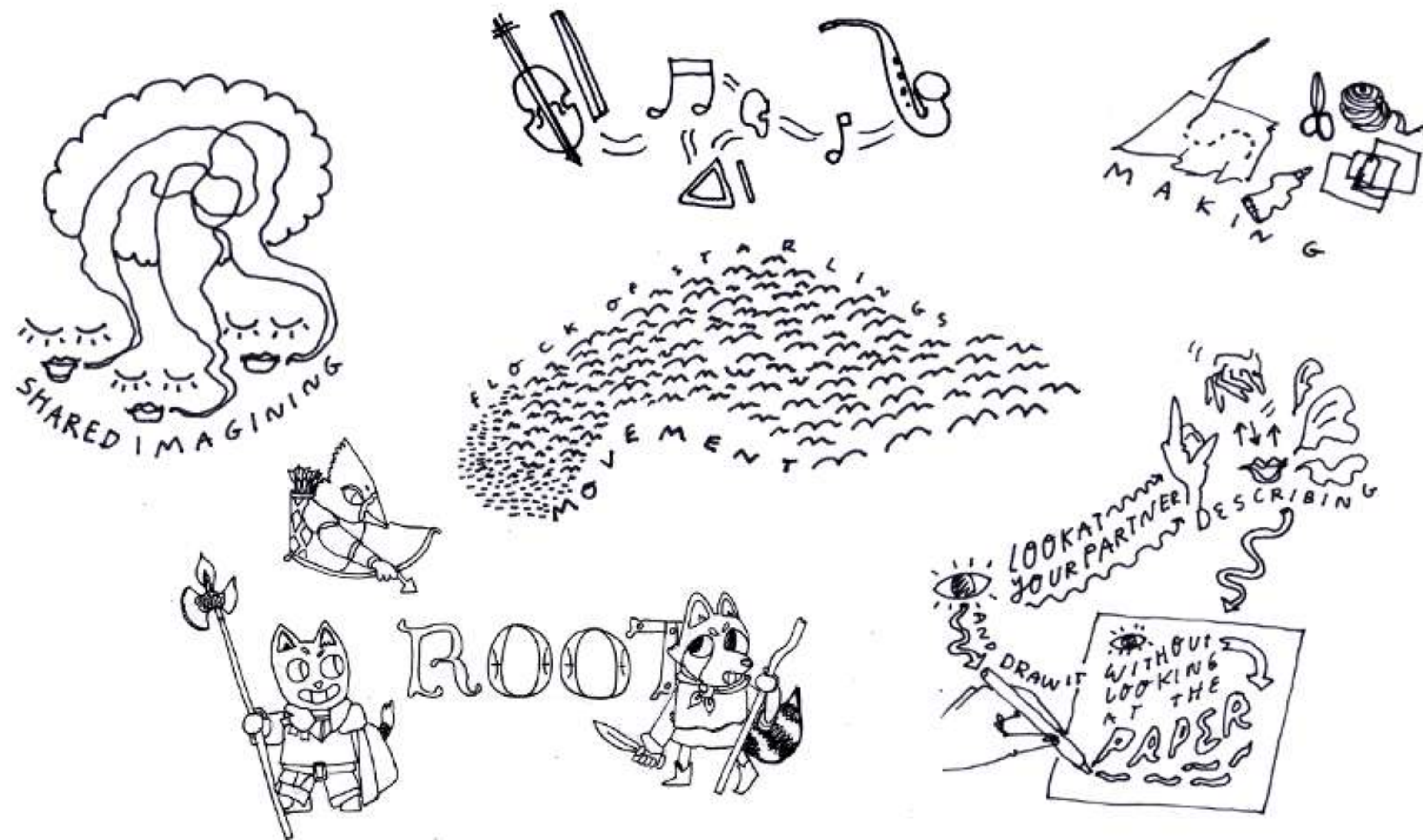
ACTIVITIES

STAGES

What do a geneticist, designer, soil ecologist, sustainable futures thinker, epidemiologist, rural sociologist, organisational scholar, farming systems analyst, and co-production expert (not) have in common?



FOR INTERDISCIPLINARY
LEARNING AND EXCHANGE



How can different types of games and creative play activities support different kinds of interdisciplinary thinking and collaboration?

History Bookmarks Tools Window Help

SPARK workshop, Online Whiteboard for Visual Collaboration

https://miro.com/app/board/o9J_lgim-CA=/?from=invite-link

ed Futures of Sustainability

SPARK workshop miro board

Joost Vervoort

Group 1 prototype/play space

Group 2 prototype/play space

Group 3 prototype/play space

Group 4 prototype/play space

Maikel Waardenburg

Joost Vervoort (he/him)

SPARK workshop, Online Whiteboard for Visual Collaboration

History Bookmarks Tools Window Help

SPARK workshop, Online Whiteboard for Visual Collaboration

https://miro.com/app/board/o9J_lgim-CA=/?from=invite-link

ed Futures of Sustainability

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Group 1 prototype/play space

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Group 4 prototype/play space

Maikel Waardenburg

Joost Vervoort (he/him)

Niels Keetels

Dan Lockton

Elvia Vasconcelos (she/her) @TUE

Suzan Ruijtenberg

Maikel Waardenburg

Jet Vervoort

josephinechambers

Raimon Ripoll-Bosch

Joost Vervoort (he/him)

Jessica Duncan

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 REPTILES
+ FUTURE GOALS



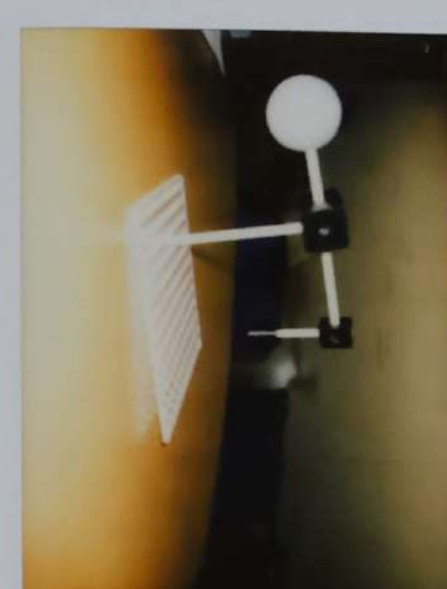
SELF-DOUBT



Sadness



Apathetic



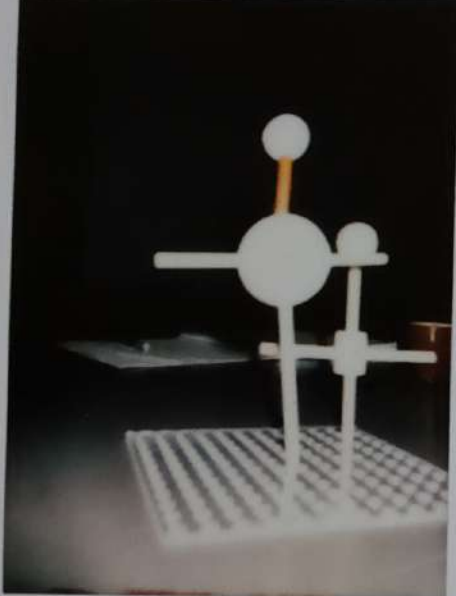
Disgust



STRESS



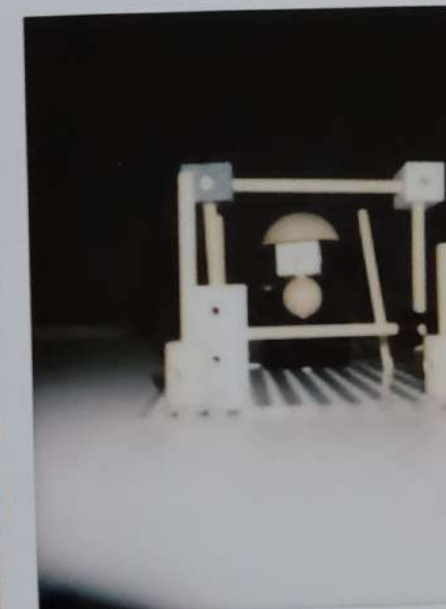
Roller Coaster



LOWLINESS



sloth (but cozy)



Structured Chaos



Confusion



EXHAUSTION



Loneliness



Disillusion
Hopefulness



Surprise



ANTICIPATION



Imbalance



Family of emotion



Anx, tired, excited



Wired / confused

making
imaginaries
tangible

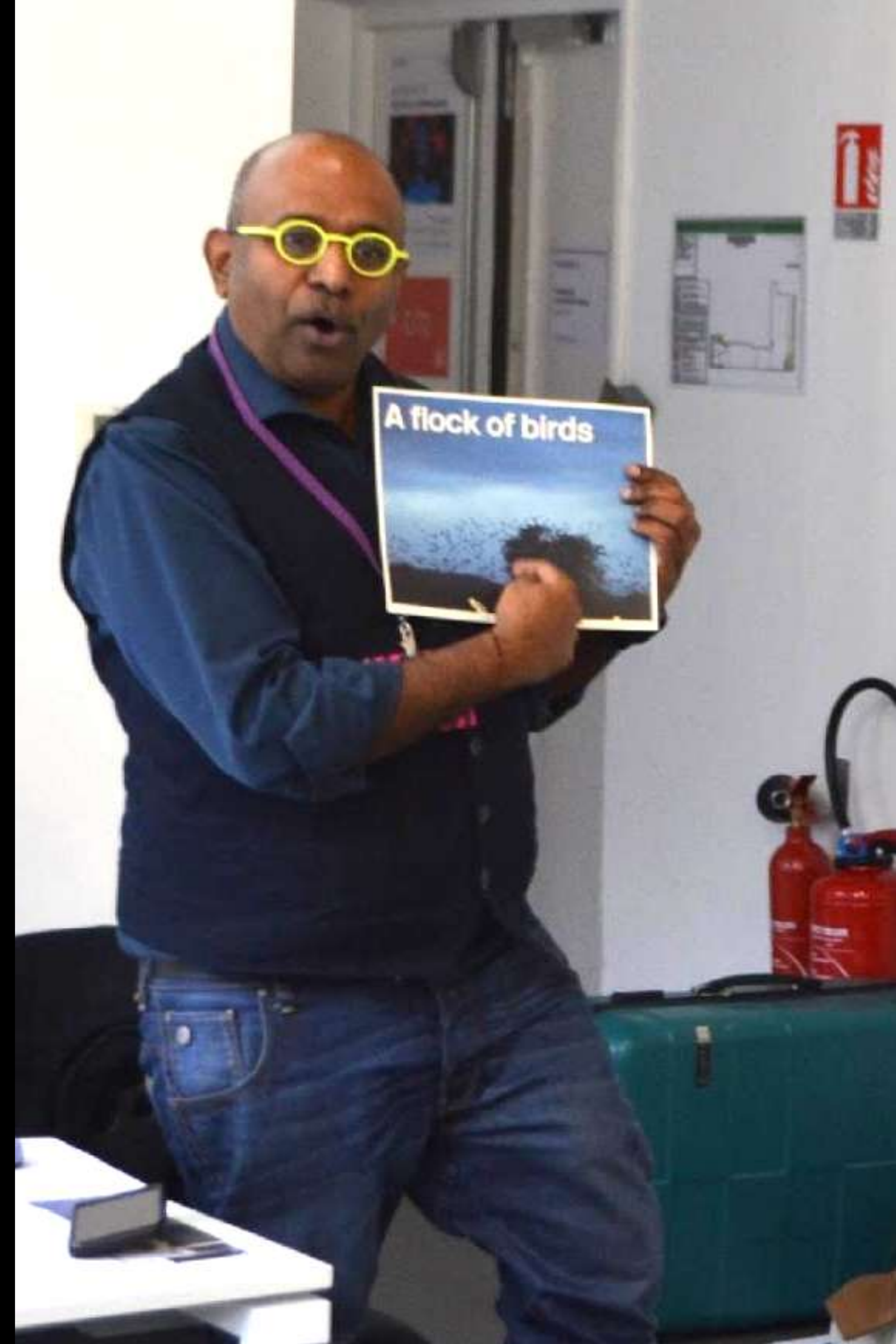
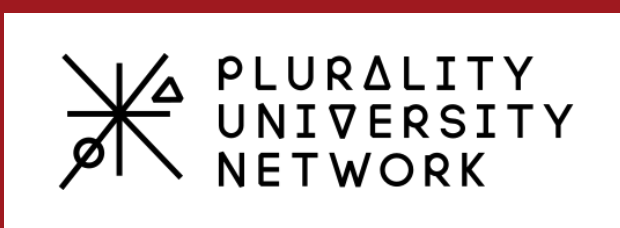
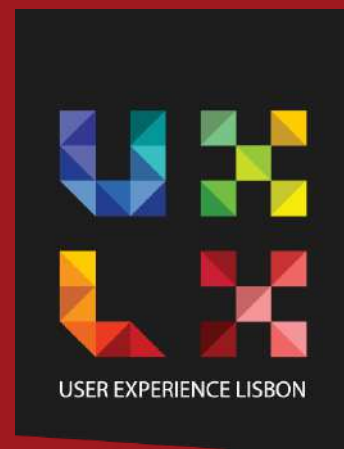
new
metaphors

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

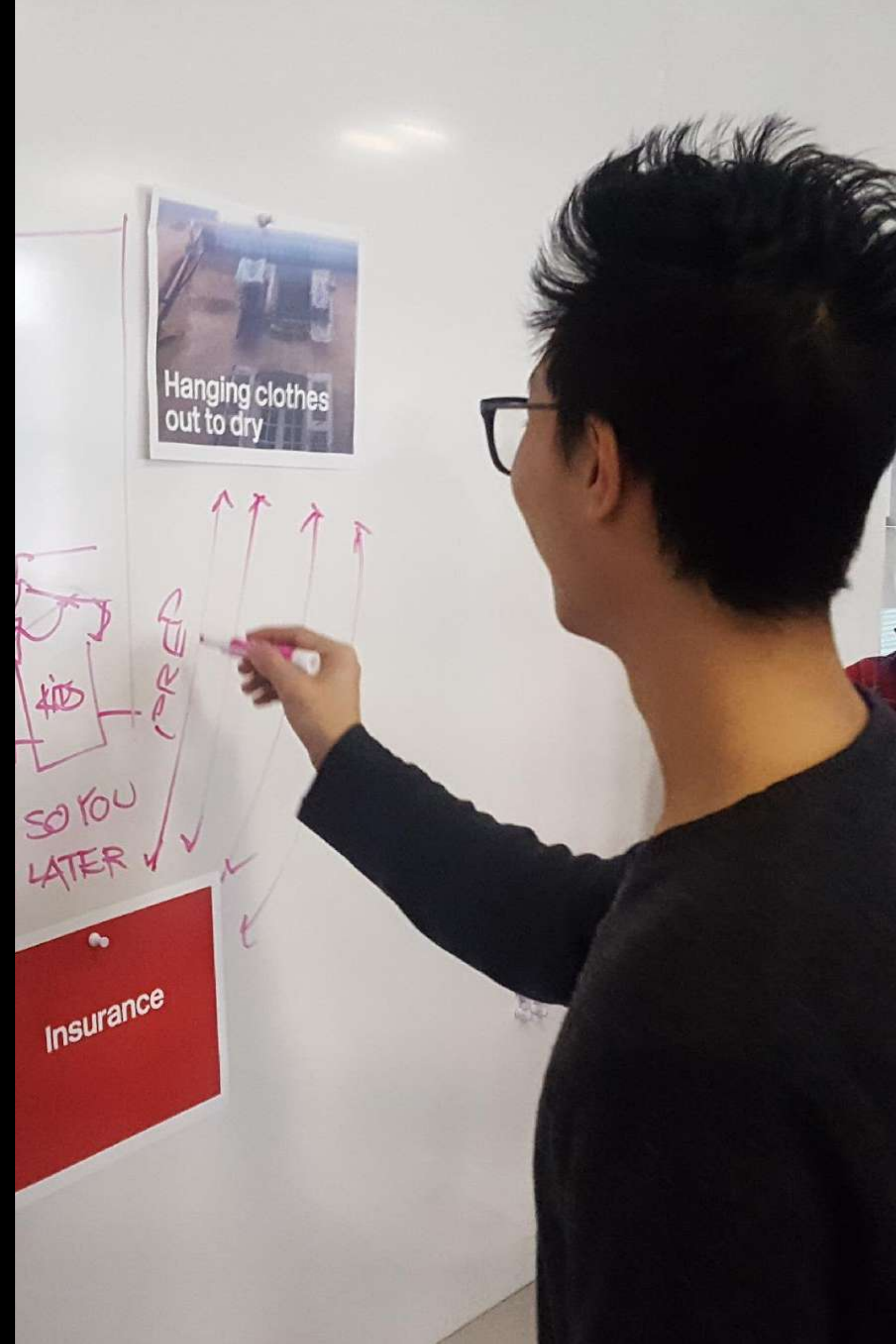
UDD Universidad
del Desarrollo

Carnegie Mellon
Design

So/-

Carnegie Mellon University

SPJIMR
Bharatiya Vidya Bhavan





⑤ movement transition.

⑥ common → movement
diff →

① issue being an immigrant.

② shedding an old skin
change metaphors

THE OPPORTUNE MOMENT

- HAVE IT WHEN YOU NEED IT
- GRATIFYING

SOLIDARITY

- UNITY
- PART OF A WHOLE

ADAPTORS

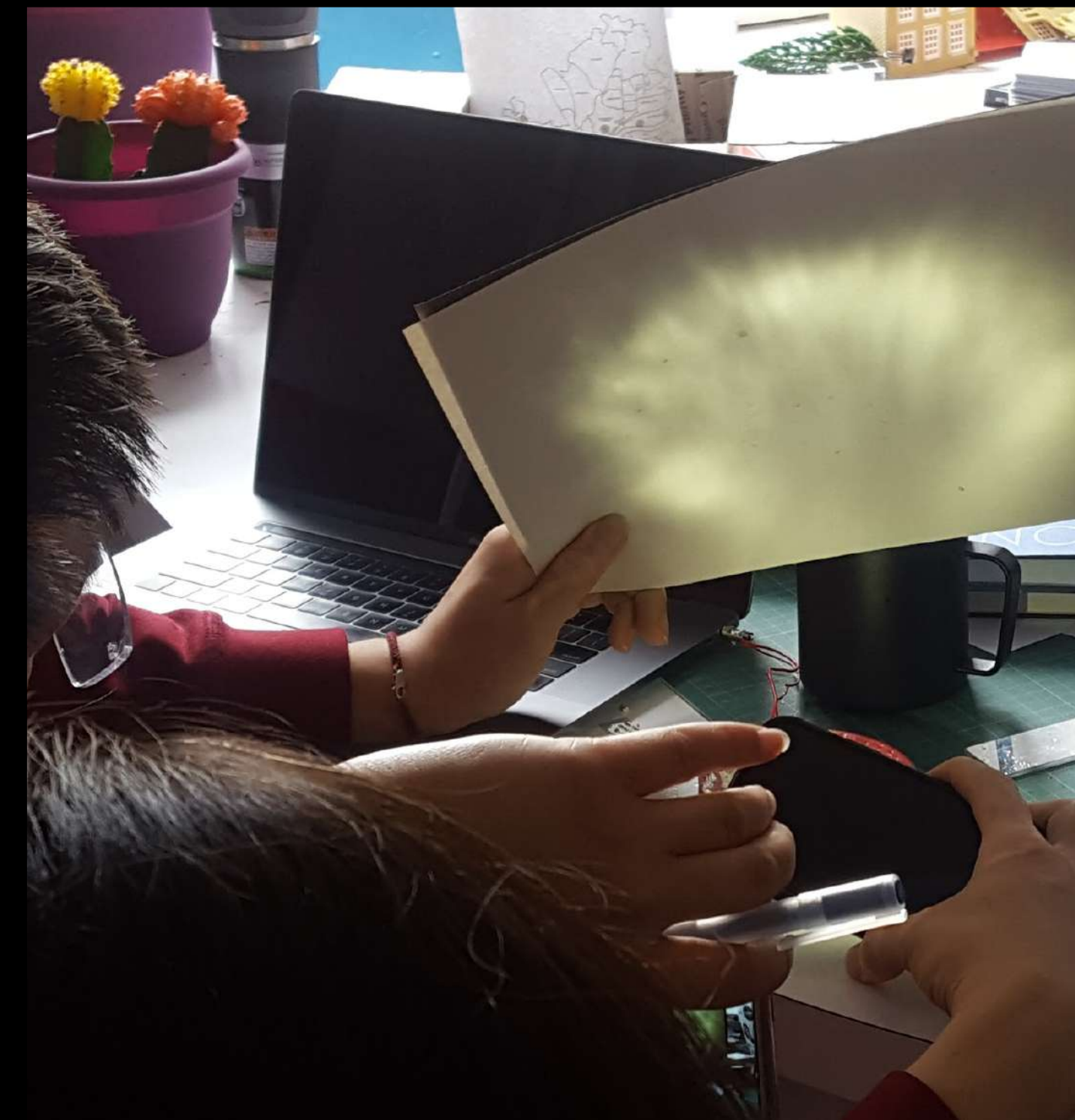
- UTILITARIAN
- LOTS OF CABLES
- INTEROPERABILITY
- UGLY

making imaginaries tangible

qualitative interfaces

Dan Lockton, Carine Lallemand,
Daphne Menheere (2022). Designing
Qualitative Interfaces: Experiences
from Studio Education,. DRS 2022

Dan Lockton, Delanie Ricketts, Shruti
Aditya Chowdhury, Chang Hee Lee
(2017). Exploring Qualitative Displays
and Interfaces. CHI 2017, LBW



Watching Dogs Dream

Projects of M. Urban

Design Research

Towards a Dissertation in Transition Design

Rational & Hypothesis

Methodology

Interviews
Green Ash
Sugar Maple
Eastern Hemlock
Quaking Aspen
Bristlecone Pine

Hypothesis

**When viewed as more than
raw material, trees and
forests—silviculture and
forestry—may help
designers and the broader
industrialized culture see
and consider time and
expand their temporal frame.**

Trees as leverage
points to lengthen
the time considered
in human endeavors

In our focus on the present and our immediate needs and desires, members of industrialized societies tend to miss the consequences of our actions and are rendered blind to our place within geologic time. We know our plastic will last for millennia, but we cannot conceive of the fact that the leftovers from our lunch might persist for thousands of years. Even the act of throwing away the rubbish from that meal in an appropriate container may be beyond our time frame—It often seems we are unable to consider the repercussions of our actions.

"...How do we make longterm thinking automatic and common instead of difficult and rare? How do we make the taking of long-term responsibility inevitable?"

Rational

We need a substantial change in our attitude towards our environment, and its resources, which may begin with trees and forest ecosystems. While they can provide us with raw materials, viewing them as a standing reserve will only lead to further environmental degradation. Instead, we need to make our societies more conducive to tree and forest growth and

DRS 2022

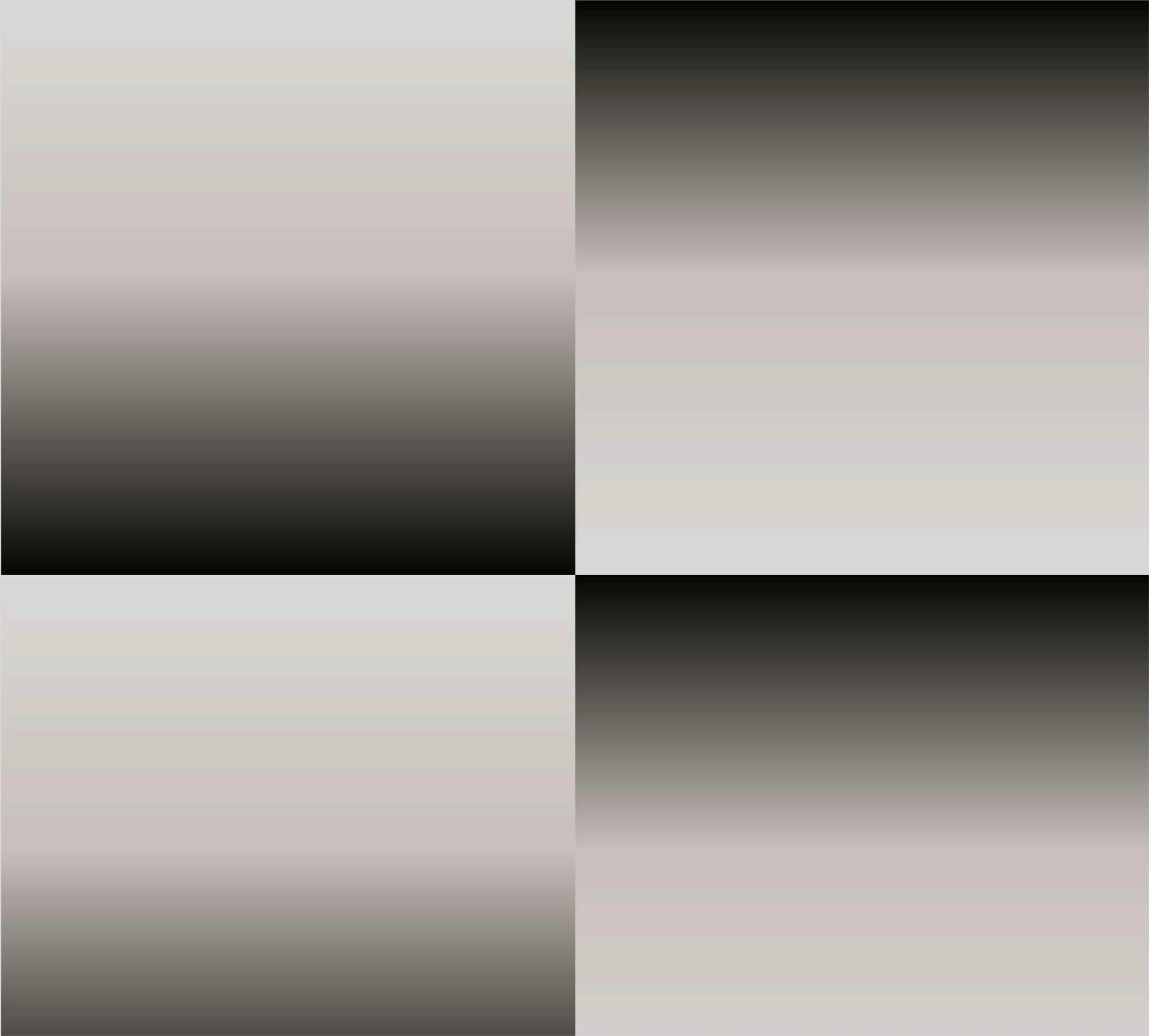
25th June — 3rd July

We have recently lived through extraordinary times where design in many forms has been necessary to counter the enormous problems we have faced and continue to face in our conflicting coexistence.

*How has the discipline of design research responded?
Can design and design research bring the insights and methods needed to transform conflict into collaboration?*

Join us in **Bilbao** for DRS2022, a **hybrid conference** with unique participation opportunities and a showcase for the best in design research. Whatever your orientation to design research we encourage you to participate, to show the true diversity and potential of our discipline.

DRS2022 is hosted by the city of **Bilbao** in association with the University of the Basque Country (Universidad del País Vasco) and the wider ecosystem of local academic and design institutions. In 2014 Bilbao became a member of the **UNESCO City of Design network**. As such, it hosts a permanent Design and Creativity Council with a mission to promote design-oriented urban policies and to integrate goals related to the cultural and creative industries into local development plans. Bilbao recently joined **the Global Destination Sustainability Index** with a



02 Valuing the qualitative in design and data

TRACK CHAIRS AND REVIEWERS

Daphne Menheere, Eindhoven University of Technology, Netherlands

Dan Lockton, Eindhoven University of Technology, Netherlands

Chang Hee Lee, KAIST, South Korea

Marion Lean, UK Department for Culture, Media, and Sport, United Kingdom

Carine Lallemand, Eindhoven University of Technology, Netherlands

Dietmar Offenhuber, Northeastern University, United States

Holly Robbins, Eindhoven University of Technology, Netherlands

Elisa Giaccardi, Delft University of Technology, Netherlands

Samuel Huron, Institut Polytechnique de Paris, France

ABSTRACT

Often it's qualities which help us make sense of the world. From a cat's purr, to wrinkled fingertips in the bath, the feel of fabric, the crunch of fallen leaves, or a map we draw for a friend, much of our experience is qualitative rather than quantitative. We live and feel in conversation with our perceptions of qualities of phenomena, people (including our own bodies), materials, and relationships between them. Telling someone you're 7/10 happy, or 62% in love, or even that you managed 10,000 steps today, is less meaningful than a richer description of your experience.

Yet design so often—particularly in digital contexts—defaults to quantification (however creatively) as a mode for information visualisation, interaction with technology, and research around people’s experiences, introducing extra layers of abstraction from the world.

We believe that qualitative expressions of experience offer opportunities for new forms of understanding, types of relations, meaning-making, and (re)connections—with nature, with the systems around us, with ourselves, and with each other. We invite work exploring the qualitative, indexical, poetic, analogue, indeterminate, interpretative, and perceptual, in design, data (loosely defined), and research with people (or nonhumans).

Experiments, cases, reflections, and theoretical pieces are welcomed.

making
imaginaries
tangible

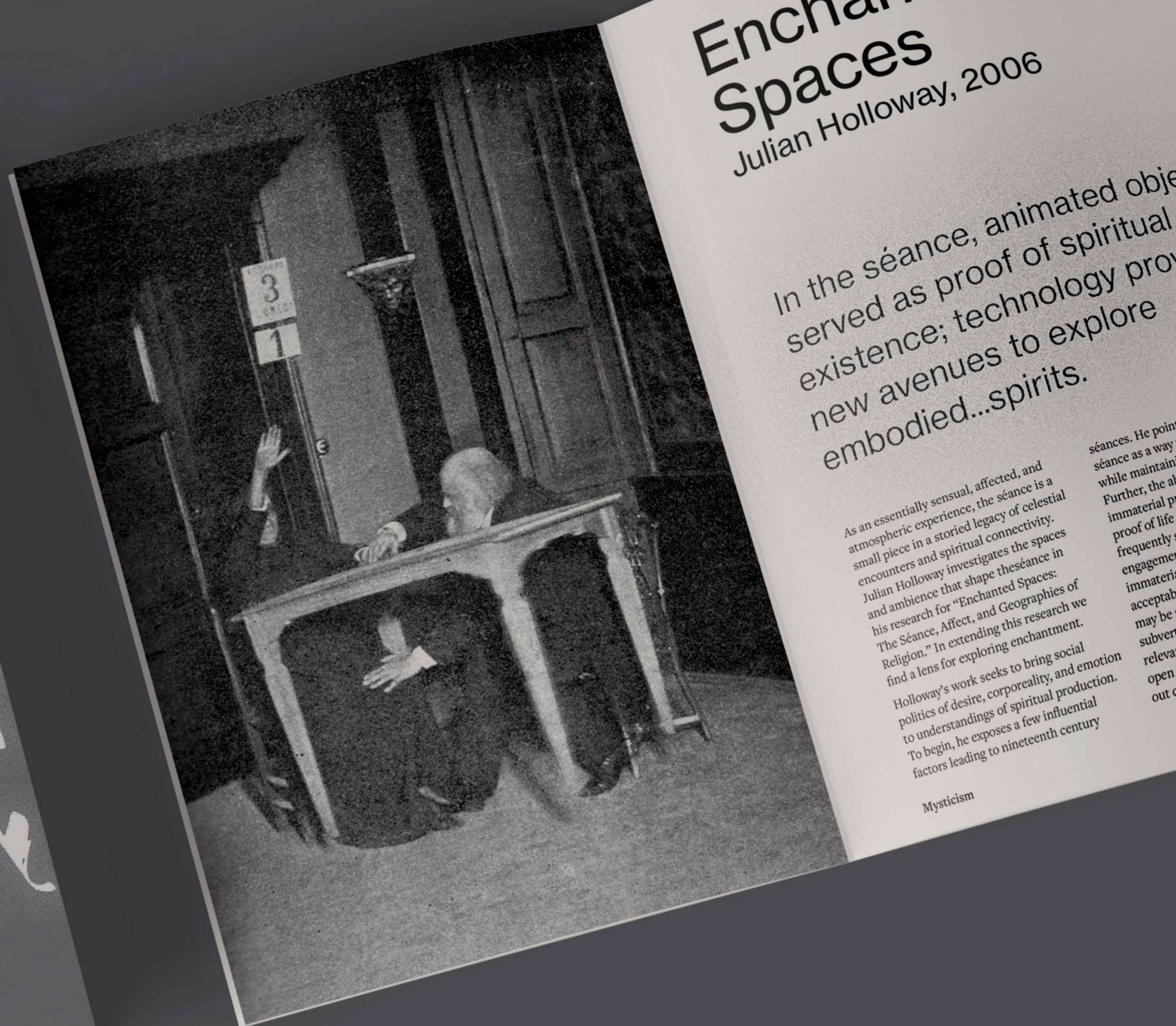
‘spooky’
technology

on the invisible and otherworldly
qualities in everyday technologies

The Frank-Ratchye
STUDIO
for Creative Inquiry

Daragh Byrne, Meijie Hu, Miranda
Luong, Yiwei Huang, Katherine
Giesa, Anuprita Ranade, Christi
Danner, Karen Escarcha, Catherine
Yochum, Elizabeth Wang, Gordon
Robertson, Lisa Yeung, Matthew
Cruz, Dan Lockton

Spooky
Technology



Enchanted
Spaces
Julian Holloway, 2006

In the séance, animated objects
served as proof of spiritual
existence; technology provided
new avenues to explore
embodied...spirits.

As an essentially sensual, affected, and
atmospheric experience, the séance is a
small piece in a storied legacy of celestial
encounters and spiritual connectivity.
Julian Holloway investigates the spaces
and ambience that shape these séances in
his research for “Enchanted Spaces:
The Séance, Affect, and Geographies of
Religion.” In extending this research we
find a lens for exploring enchantment.
Holloway’s work seeks to bring social
politics of desire, corporeality, and emotion
to understandings of spiritual production.
To begin, he exposes a few influential
factors leading to nineteenth century

Mysticism

séances. He points
séance as a way
while maintaining
Further, the al-
immaterial p-
proof of life
frequently
engagement
immaterial
acceptab-
may be
subvert
relevan-
open
out

making
imaginaries
tangible

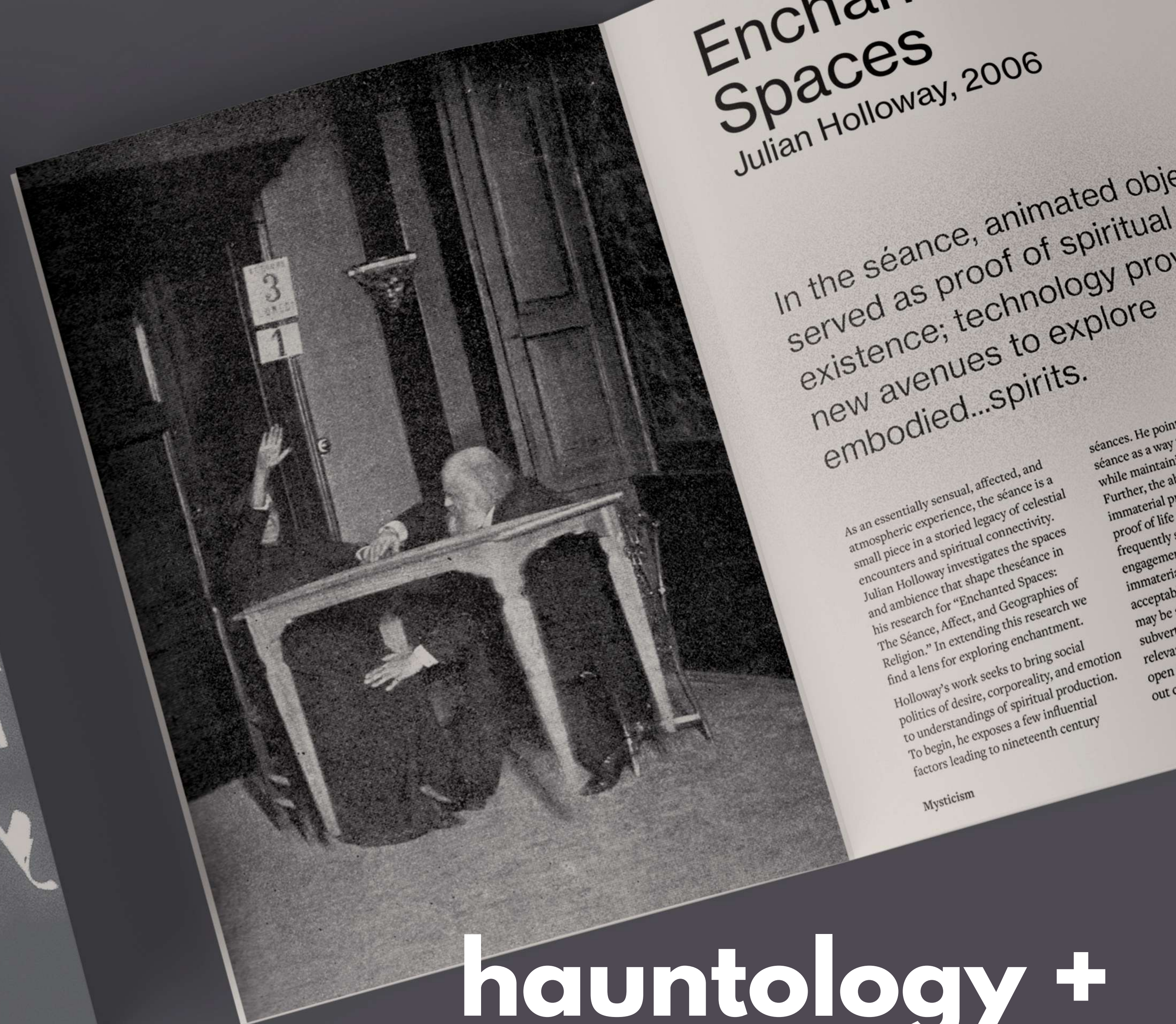
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Mysticism

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while maintaining
Further, the al-
immaterial pro-
proof of life
frequently
engagement
immaterial
acceptab-
may be
subvert
relevan-
open
out

hauntology +
futures

**making
imaginaries
tangible**

**climate futures
& transition design**



Dan Lockton, Megan Urban, Lea Albaugh, Julia Petrich, Tammar Zea-Wolfson, Elena Deng, Judy Chun, Antonio Song, Sharon Lee, Coco Allred, Joyce Wang, Yixiao Fu, Yingli Sieh, Chris Costes, Ema Karavdic, Cathryn Ploehn, Shawn Koid, David Lin, Rachel Kim, Matt Prindible, Matt Geiger (2019). Climate Pathways: Projects from the Imaginaries Lab



Photo: Jackie Chou







imagining at scale:
futures we can 'live in'



**imagining at scale:
futures we can 'live in',
'experiential futures'
(Stuart Candy)**

A person's hands are holding a small white card with a black line drawing of a person. The card is being held over a table covered with a dark cloth. On the table, there is a worksheet with various icons and text, a small orange box, a pair of glasses, a small bowl of snacks, and a small rainbow flag. The person is wearing a light-colored t-shirt. The background is slightly blurred, showing more of the table and the person's arm.

**autoethnography+
experiential futures:
living prefiguratively**

**—sharing
—time**

**making
imaginaries
tangible**

**participatory
futuring**

atitled

**DEMOS
HELSINKI**



Tammar Zea-Wolfson and
Dan Lockton

Thinking through Screenwriting Workshop with The Imaginaries Lab
Whole Assembly Zoom meeting: [here](#) * Mural agenda and [map](#)

Cycle Four: Crafting a Scene for Reimagining **The City** *drawing inspiration*

To begin crafting a scene spend the next 15 minutes as a team building inspiration.

- 1) Review and choose elements from the previous 3 slides you'd like to carry forward by copy

Be sure to include at least two characters.

Third place settlement:
between city and rural,
spacious and packed

Greenhouse on top of a
20th century building,
looking at other
greenhouses

Wind Turbines

summer



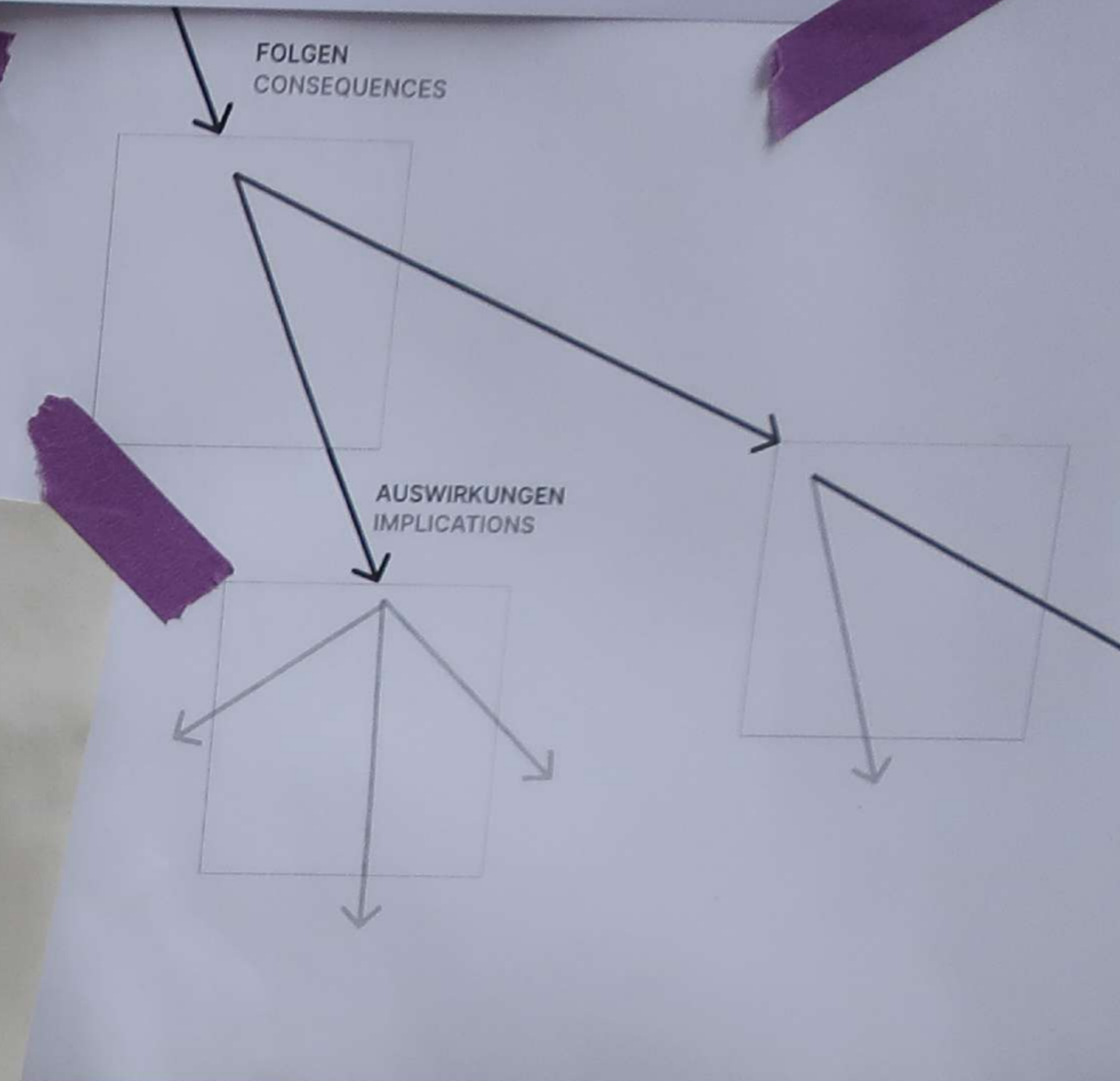
participatory futuring



WHENEVER. BAKERY
GIB IS EARLY HOURS, GREAT
COWORKERS. 7-WEEK TRAINING
REQUIRED (ON LINE)
KONTAKTINFORMATIONEN / CONTACT DETAILS
WER BIETET ES AN UND WIE KANN DIESE
PERSON KONTAKTIERT WERDEN?
WHO IS MAKING THE ADVERT AND HOW
CAN THEY BE CONTACTED?
JOBSWAPPER.COM / AL 899
(WRITE YOUR FAVORITE DÖNER SPOT
IN YOUR REQUEST SO I
KNOW IT'S NOT
SPAM)

BERLIN

Ich habe
gene Wassa
Schiker



BERLIN
NEUKÖLLN
2039



1 WELCHES ZUKÜNFTIGE EREIGNIS HAT DICH INSPIRIERT?
WHICH FUTURE EVENT INSPIRED YOU TO MAKE THIS?

KLEINANZEIGEN

2 WAS WIRD ANGEBOten?
WHAT IS IT?
Sonnensegel / individuelle
Konstruktion

3 MACHE EINE SKIZZE
DRAW A PICTURE
imagine !

4 WIE WIRD ES ANGEBOten?
WHAT IS THE DEAL?
☐ EUR
☐ ZU VERSCHENKEN
FREE
☒ ZUM TAUSCH
SWAP ONLY

5 BESCHREIBUNG
DESCRIPTION
Sonnenschutz nach
individuellen Anforderungen
Konstruktion / Umsetzung

6 WEITERE INFORMATIONEN:
ORT, ART, IST VERSAND MÖGLICH?
FURTHER INFORMATION: LOCATION,
TYPE, IS SHIPPING AVAILABLE?
Verwand möglich

KONTAKTINFORMATIONEN / CONTACT DETAILS
7 WER BIETET ES AN UND WIE KANN DIESE
PERSON KONTAKTIERT WERDEN?
WHO IS MAKING THE ADVERT AND HOW
CAN THEY BE CONTACTED?
Philine

participatory
futuring

urbanheatislandliving.com

Juli Sikorska

WARNING WARNING WARNING WARNING WARNING WARNING WARNING WARNING WARNING

EXTREME HEAT



**VISIT A COOLING
CENTER NEAR YOU**

CAPACITY LIMITED.
CHECK AVAILABLTLY FIRST AT
WWW.HITZEHILFSWERK.DE

H H W
HITZEHILFSWERK
SINCE 2026



LEVEL 4

 >45°C  >25°C

PART 1

HEAT ADAPTATION

As climate impacts became more visible in the 21st century,
Berlin began to endure frequent heatwaves.

Read More

PART 2

SOCIO-ECOLOGICAL TRANSFORMATION

FUNDING,
POLITISCAL SUPPORT,
WORK ROOMS

ELLTURE

APPLY NOW AT
NEUKOELLN2040.DE

FUNDING,
POLITISCAL SUPPORT,
WORK ROOMS

ELLTURE

APPLY NOW AT
NEUKOELLN2040.DE

PART 2 SOCIO-ECOLOGICAL TRANSFORMATION

After energy and financial markets crashed again from the 2029 heatwave power outages, an ecosystem of social and environmental innovation and resurgence evolved.

[Read More](#)



urbanheatislandliving.com
Juli Sikorska



**ECOLOGY &
REPAIR & CARE &
CONSTRUCTION &
HEALTHCARE &
STORYTELLING &
CULTURE**

PART 3 REDEFINING CARE WORK

The new urban resilience agenda now supports over 500 co-ops and startups each year, providing all kinds of jobs in animal, plant, human and societal wellbeing care, electronics and infrastructure maintenance

making
imaginaries
tangible

participatory
futuring



Juli Sikorska
Francesca Desmarais
Dan Lockton

You are viewing Juli Sikorska (sh...)'s screen

View Options

01:01:30

ytbs=/

1 Visit your location:
[Click Me!](#)

2 Reflect

Delete the yellow box to see what the location looks like in 2039. How has this location changed over the past 50 years? What did it look like at the turn of the millennium?

Hermannstraße Revitalisation

In the early 2020s, Hermannstraße was one of the hottest streets, a true heat island in Berlin. Following years of social projects to revitalise the area, new greening and cooling initiatives created micro parks and lower temperatures.

Heat sunglasses when you drive (too much reflection)


Baklava festival for the community

Use the road as a community notice board

1 Neighborhood groups planted and cared for new trees and

2 This main street was painted white to reflect, instead of absorb, heat.

3 Permeable pavement allows heavy rains to more easily filtrate below the street.



3 Imagine

Imagine the new activities that happen here in 2039. Jot a few notes on post-its.

Delete me to see what the location looks like in 2039 :)

Dan Lockton

Security

Participants 11

Chat

Share Screen

Record

Breakout Rooms

Reactions

HEAT RESILIENT CITIES 2039

Juli Sikorska (she/her) – Berlin-Neukölln (...)

HEAT RESILIENT CITIES 2039

Dan Lockton—Amsterdam (he/him)

HEAT RESILIENT CITIES 2039

HRC Tech

HEAT RESILIENT CITIES 2039

Copenhagen (he/him)

HEAT RESILIENT CITIES 2039

Climate Channel

HEAT RESILIENT CITIES 2039

Berlin @p

HEAT RESILIENT CITIES 2039

London

HEAT RESILIENT CITIES 2039

Utrecht NL

HEAT RESILIENT CITIES 2039

Eindhoven NL

HEAT RESILIENT CITIES 2039

Malmö (...)

HEAT RESILIENT CITIES 2039

(Dark Matter L...

Design for sustainable behaviour

symmetry to make elements look related, or asymmetry to show difference and focus attention?

The symmetry of the red balloon is a visual cue that it should be the focus of attention.



users' expectations or assumptions by controlling the reference points they have?

Reference points are used to anchor users' expectations and assumptions.



angle things so some actions are easier than others?

Some things are easier to do than others because of the angle they are presented at.



an extra 'confirmation' step before an action can be performed?

Some things are easier to do than others because of the extra step required.



users by helping them reduce feelings of guilt about their behaviour?

Some things are easier to do than others because of the guilt they reduce.



Bundling

Can you include something you want users to do, along with something they want to do, so both get done?

Combining up all the tasks in a single action can be a good way to get users to take more time than they would otherwise.



Challenges & targets

What happens if you set people a challenge, or give them a target to reach through what they're doing?

Challenges and targets are used to motivate users to complete tasks.



Choice editing

Can you edit the choices presented to users so only the ones you want them to have are available?

Choice editing is used to control the choices available to users.



Coercive atmospherics

Can you use ambient sensory effects (sound, light, smell, etc) to make it harder for users to behave in certain ways?

Coercive atmospherics are used to influence user behavior.



Collections

What happens if you encourage users to collect a set of things (friends, activities, places, objects, etc) through using your system?

Collections are used to encourage users to collect things.



Colour associations

Can you use colour to suggest associations between particular behaviours and outcomes?

Colour associations are used to suggest connections between actions and results.



Conditional warnings

Can you give users warnings based on detecting the error they've made, or might be about to make?

Conditional warnings are used to alert users to potential errors.



Converging & diverging

Can you channel people so they come together (or split up)?

Converging and diverging are used to guide user movement.



Decoys

Can you add 'decoy' choices, making the others (which you want people to pick) look better in comparison?

Decoys are used to make other options more appealing.



Feedback through form

Can you use the form of your object itself as a kind of interface, giving feedback or suggestive cues?

Feedback through form is used to provide visual cues.



Kairos

Can you give users a suggestion at exactly the right moment for them to change their behaviour?

Kairos is used to suggest actions at the right time.



Leave gaps to fill

Can you leave deliberate gaps (in a design, message, etc) which users will want to fill, becoming engaged in the process?

Leave gaps to fill is used to engage users in a task.



Matched affordances

Can you make parts fit only when the right way round, or only with the products they should do?

Matched affordances are used to guide user interaction.



Mazes

Can you get people to follow the path you want them to, on the way to reaching something they want?

Mazes are used to guide user movement.



Mimicry & mirroring

Can your system mirror or mimic a user's behaviour or mood in some way, to increase the engagement a user feels?

Mimicry and mirroring are used to increase user engagement.



Personality

Can you give your system a personality or character that engages users, becoming a 'social actor'?

Personality is used to make systems more engaging.



Poison pill

Can you arrange things so that an otherwise attractive option has an unpleasant, self-defeating deterrent side-effect?

Poison pills are used to deter users from a choice.



Positioning

Can you rearrange things so people interact with them in the locations you want them to?

Positioning is used to guide user interaction.



Progress bar

Can you let users know their progress towards achieving a goal?

Progress bars are used to show user progress.



Sousveillance

Can you give people 'lower down' a hierarchy the ability to observe and monitor the behaviour of people above them?

Sousveillance is used to monitor user behavior.



Social proof

Can you show people what other users like them are doing in this situation?

Social proof is used to encourage user behavior.



Summary feedback

Can you give users a report on what they've been doing, or

Summary feedback is used to provide a summary of user actions.



Transparency

Can you (perhaps selectively) reveal what's going on under the surface,

Transparency is used to show user actions.



Unpredictable reinforcement

What happens if you give rewards or feedback on an unpredictable

Unpredictable reinforcement is used to encourage user behavior.



Worry resolution

Can you help users overcome worry about their behaviour (perhaps

Worry resolution is used to help users overcome worry.





designwithintent.co.uk

Design with Intent toolkit

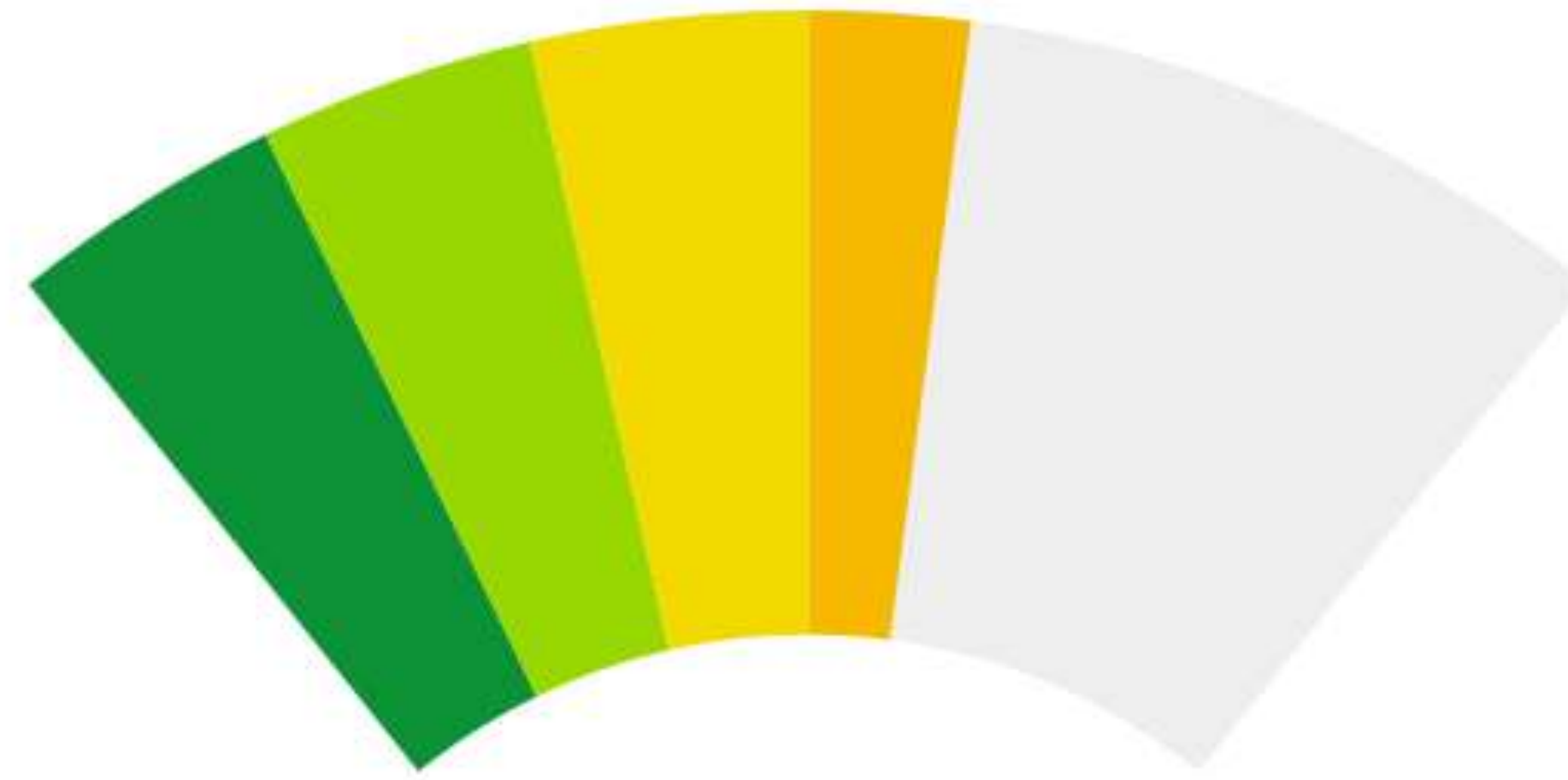
A cross-disciplinary design pattern library for behaviour change with products, services and environments; developed through workshops with industry and academia





energy use

Real time energy use



165 kg CO₂
per hour

[See more on CarbonCulture](#)

[Submit feedback](#)

as delivered cash

Government Efficiency



About this building

Tate Modern is the home of Tate's collection of international modern and contemporary art. Formerly Bankside Power Station, designed by Sir Giles Gilbert Scott and built in two phases between 1947 and 1963, Tate's transformation of the Power Station began in 1995. A steel framework was built within the existing walls of the Power Station to create the seven gallery floors. This framework also supports the existing brick façade of the building. The architects were Herzog & De Meuron. Since it opened in May 2000, more than 40 million people have visited Tate Modern.



Our energy use



Tate Modern

This graph allows everyone to access a range of data from Tate Modern. It's generated daily from data collected every half hour from the on-site meters.

For the hour commencing 16:00 on 5 Sep, Tate Modern has used:

2,044kWh

Energy use

Average 2,044kWh per hour

£163

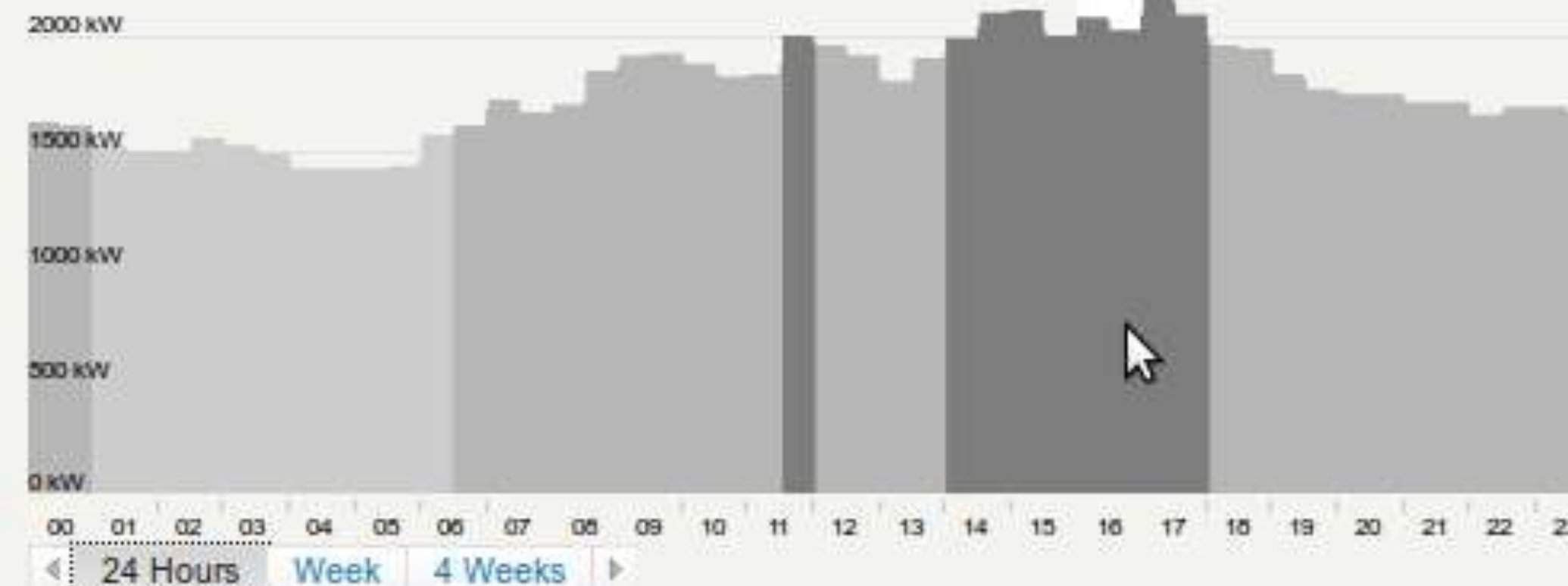
Energy cost

Average £163 per hour

1,072kg

Carbon impact

Average 1,072kg per hour





The 11 partners in SusLabNWE

Locations

Research for SusLab is carried out in: Rotterdam, London, Goteborg and Nordrhein-Westfalen



Partner log-in

SusLab Partners

The SusLab platform is constructed between 11 partners in four North West European countries.

[Delft University of Technology \(TU Delft\)](#)

[Chalmers TH](#)

[Innovation City Ruhr](#)

[Institute for Sustainability](#)

[Imperial College London](#)

[Hochschule Ruhr-West](#)

[CityPorts Academy](#)

[Johanneberg Science Park](#)

[Royal College of Art](#)

[Woonbron](#)

[Wuppertal Institute](#)

David V. Keyson · Olivia Guerra-Santin
Dan Lockton *Editors*

Living Labs

Design and Assessment
of Sustainable Living

 Springer

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 Springer



DIFFICULT
TO USE

Gas meter
can't read it
without going
outside



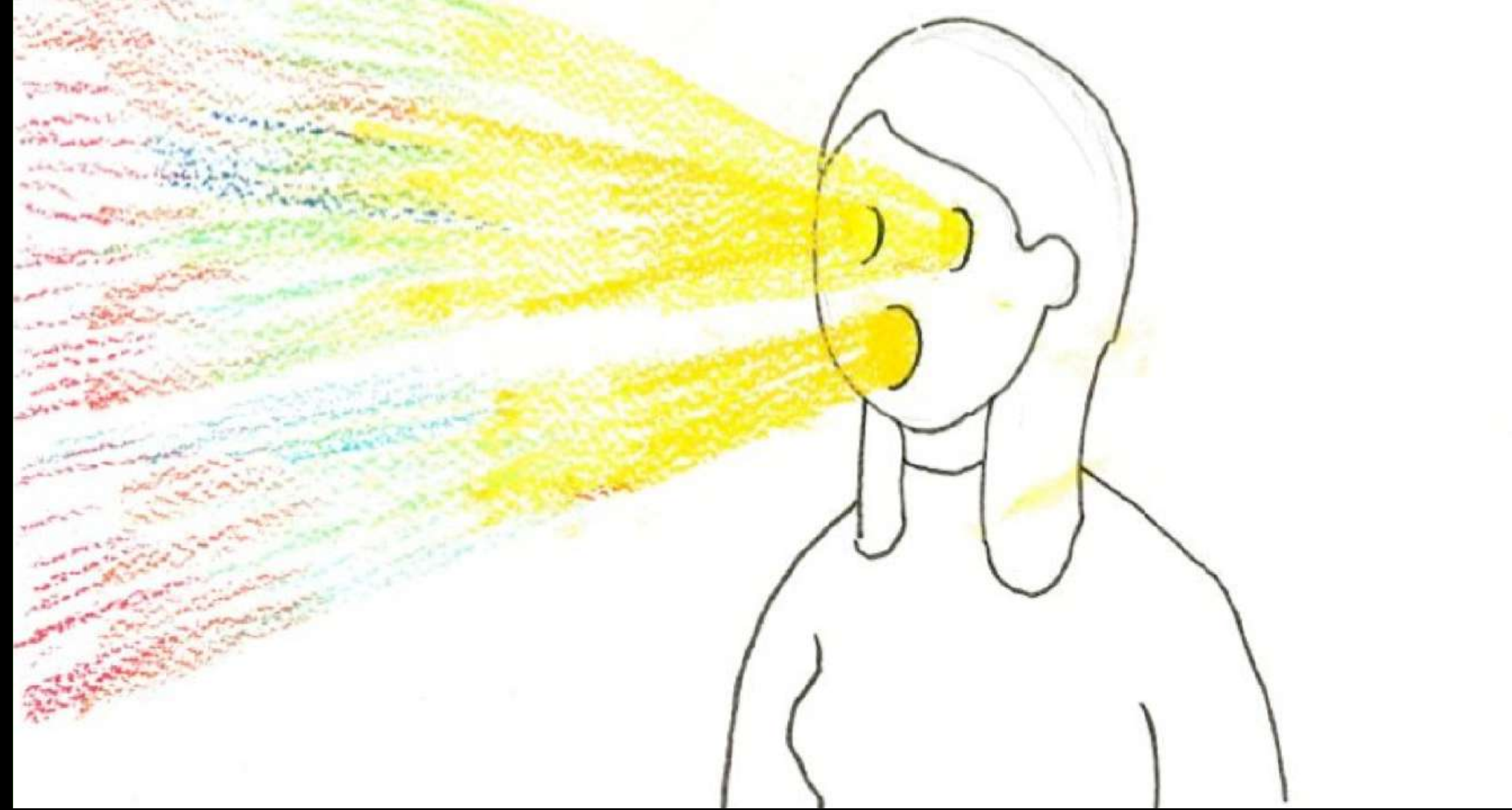
A photograph of the area under a kitchen sink. On the left is a wooden cabinet door. To its right is a green-painted wall. In the center, a white electronic device with a small screen and buttons is visible. To its right are several plastic bottles, including a large white jug and a smaller white bottle with a red cap. A black floor mat is in the foreground. A semi-transparent dark grey box with white text is overlaid on the right side of the image.

**Energy's 'invisibility' is
a key issue in people's
understanding**

**mental models
and mental
imagery**

making imaginaries tangible

energy



Royal College of Art
Postgraduate Art and Design

Investing in Opportunities




This project has received
European Regional
Development Funding
through INTERREG V B



INTERREG V B

Flora Bowden, Dan Lockton, Rama Gheerawo,
Clare Brass (2015). Drawing Energy: Exploring
Perceptions of the Invisible. London: Royal
College of Art



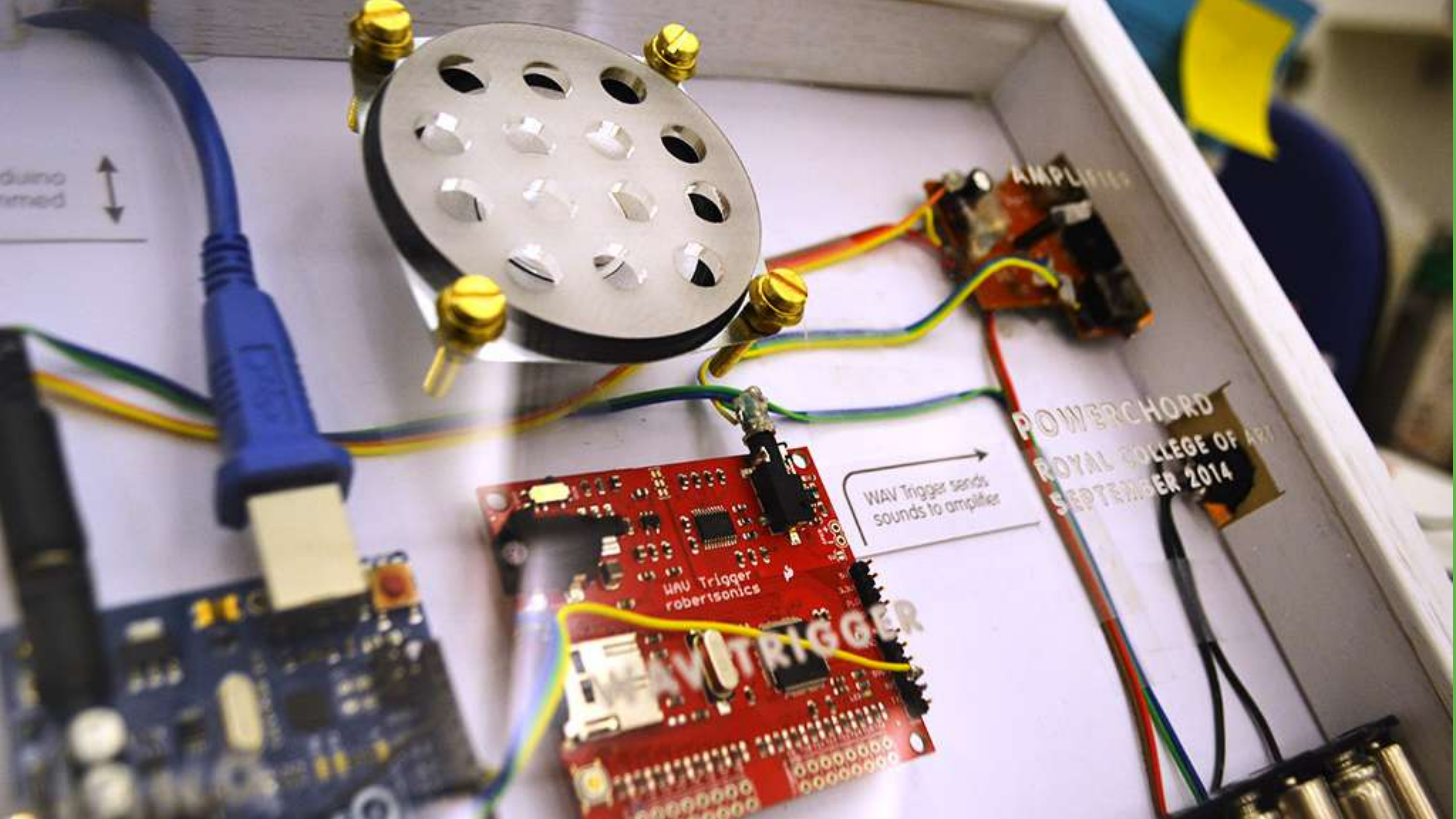


Drawing Energy:

Exploring perceptions
of the invisible

Drawing Energy: Exploring perceptions of the invisible





AMPLIFIER

POWERCHORD
ROYAL COLLEGE OF ART
SEPTEMBER 2014


WAV Trigger sends
sounds to amplifier

WAV Trigger
robertsonics

WAV TRIGGER



metaphors

A grayscale photograph of a body of water in the foreground, with a hazy city skyline visible in the distance through a thick mist or fog. The sky is overcast and blends into the fog. A red rectangular box is positioned in the upper right corner, tilted at an angle.

**The plurality
of possible
futures**

**What looms
out of the mist?**

The
road
ahead



A signpost





Conversation



Mosaics and tiles



Things growing on things

New Metaphors

How could

be a metaphor for...?



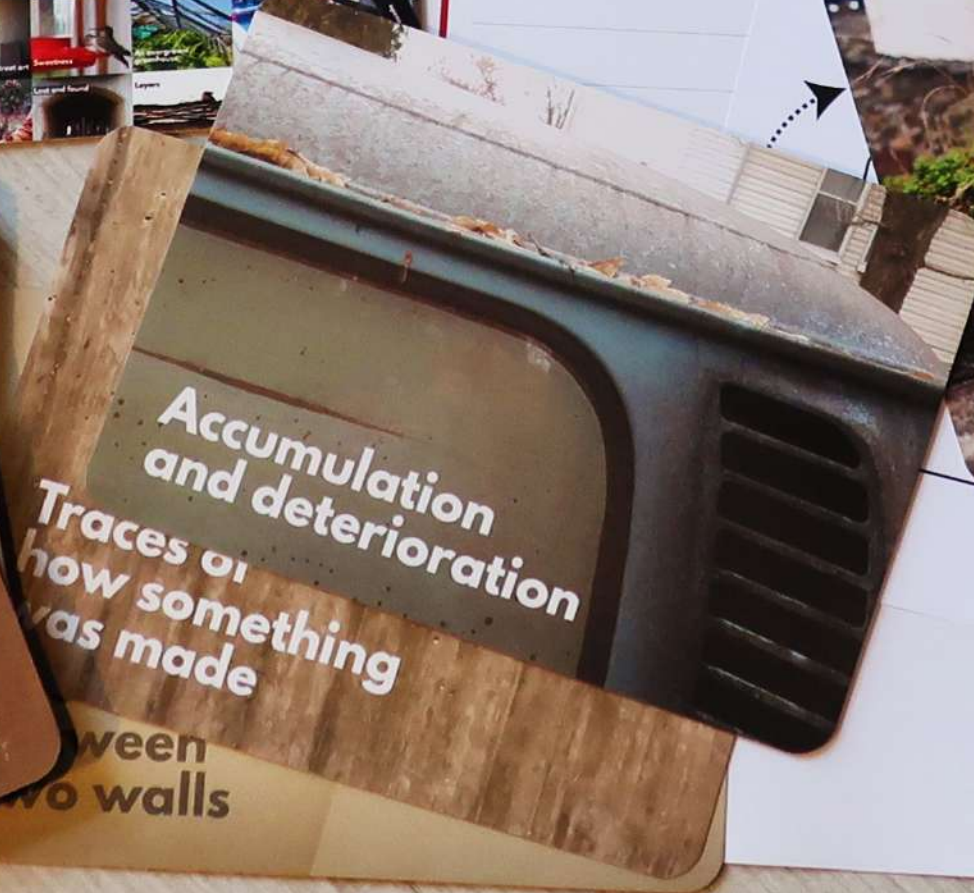
Democracy

Idea generation through juxtaposition, or bisociation (Arthur Koestler)

newmetaphors.com

[Try another metaphor...](#)

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



**expanded
conceptual
vocabulary**

**Applying all of this to
designing (just) transitions**



FOUR AREAS OF CO-EVOLVING KNOWLEDGE & SKILLSETS

**imaginaries
as co-created visions
of futures**

Co-created visions of long-term futures that are sustainable, equitable & desirable inform projects in the present, & **act as 'steps' along a transition pathway** toward the future.

**working with
imaginaries in
the design
process**

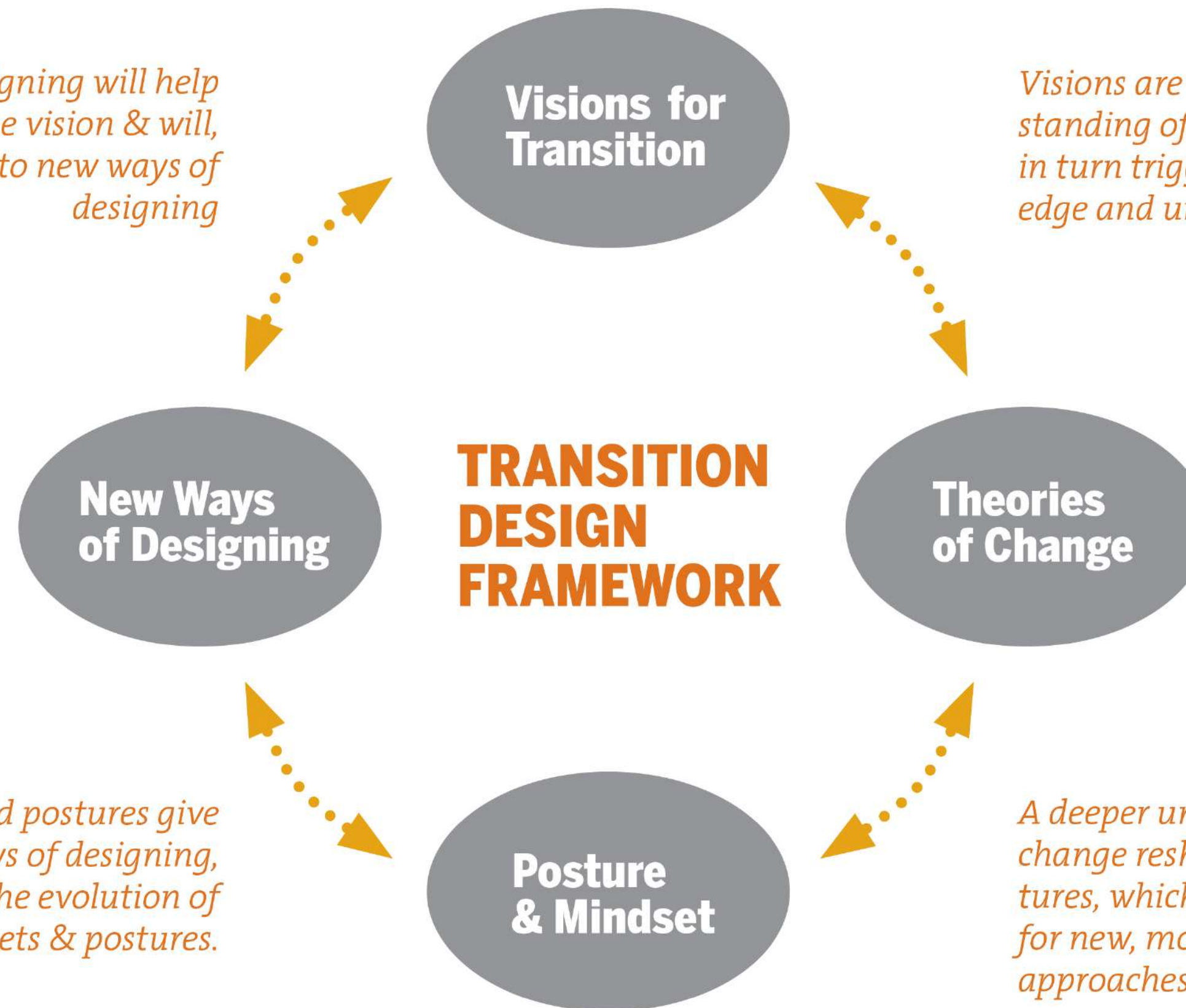
Designing systems interventions that amplify existing efforts and that **solve for multiple issues**, simultaneously, over many years or even decades.

New ways of designing will help realize/evolve the vision & will, in turn, give rise to new ways of designing

Visions are informed by a deep understanding of systems. These visions in turn trigger searches for new knowledge and understanding.

**understanding
(often tacit)
imaginaries of
how change
happens**

Theories from different fields & disciplines inform a deep understanding of the **dynamics of change** within complex, **open systems** (and wicked problems).



**imaginaries
as mindsets
and worldview**

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

**Look for parts of
future(s) in the now**

**Make imaginaries
tangible,
experiential,
rehearsable**

**Whose
imaginaries are
present?
Whose are not?**

To consciously yet radically transform society, we need to engage with the two sides of any conscious change: imagination and experimentation. That's what Untitled is about.

Receive a newsletter every two months.
Read our **PRIVACY POLICY**.

The Now

NE. EXPERIMENT. REPEAT. IMAGINE. EXPERIMENT. REPEAT. IMAGINE. EXPERIMENT. REPEAT. IMAGINE. EXPERIMENT. REPEAT. IMAGINE. EXP

**please bring
laptop to
workshop
tomorrow**



Thank you!

imaginariés
lab

TU/e

**many images in this presentation
were generated using Midjourney [midjourney.com](https://www.midjourney.com)**

**imaginari.es
dan@imaginari.es**