Design Thinking Through New Metaphors

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@danlockton
We're using design methods to explore and support people's imagining—both new ways to understand, and new ways to live.

Welcome to the Imaginaries Lab

Lab News, Winter 2017

Fictions Matter Too...

Sign up to our newsletter

Minds and Machines

Thinking About Things That Think About...
Who we are

Current Imaginaries Lab team

Ashlesha Dhote, Research Assistant 2017–
Silvia Mata-Marín, Doctoral Researcher 2017–
Shengchi Wu, Research Assistant 2017–
Matt Prindlile, Research Assistant 2017–

Imaginaries Lab alumnae and alumni

Deanne Picketts, Research Assistant 2016–17
Theora Kyriou, Research Assistant 2017
Nehal Vora, Research Assistant & Teaching Assistant, 2017
Sarah Foley, Design Researcher Summer 2017

Devika Singh, Research Assistant 2017–
Dan Lockton, Assistant Professor 2017–
Babs, Friend of the Lab
Ty Van de Zande, Undergraduate Research Fellow Summer 2017
imaginaries
‘If [people] define situations as real, they are real in their consequences’

William Thomas & Dorothy Swaine Thomas
The Child In America, 1928
mental models
heuristics
folk theories
user stories
simple cause & effect links
metaphors
people often act on imaginaries
people often act on their model of the situation
people often act on their model of the situation

(designeders know this)
Two Theories of Home Heat Control*

WILLETT KEMPTON

Michigan State University

People routinely develop their own theories to explain the world around them. These theories can be useful even when they contradict conventional technical wisdom. Based on in-depth interviews about home heating and thermostat setting behavior, the present study presents two theories people use to understand and adjust their thermostats. The two theories are here called the feedback theory and the valve theory. The valve theory is inconsistent with engineering knowledge, but is estimated to be held by 25% to 50% of Americans. Predictions of each of the theories are compared with the operations normally performed in home heat control. This comparison suggests that the valve theory may be highly functional in normal day-to-day use. Further data is needed on the ways this theory guides behavior in natural environments.

Human beings strive to connect related phenomena and make sense of the world. In so doing, they create what I would call folk theory. The word “folk” signifies both that these theories are shared by a social group, and that they are acquired from everyday experience or social interaction. To call it “theory” is to assert that it uses abstractions, which apply to many analogous situations, enable predictions, and guide behavior. I would con-

* This paper will also appear as a chapter in Cultural Model in Language and Thought, N. Quinn and D. Holland (Eds.), Cambridge University Press, 1985. Copyright for this paper is held by Cambridge University Press.
artificial intelligence
automation
algorithmic decision-making
personal data and privacy
social media
‘the Internet’
public health
climate change
resources
social equity
the law
the government
the economy
quality of life
How we imagine affects how we understand the world, how we live, and what we see as possible in our collective futures, with consequences for sustainability, society, our relationships with technology, and our everyday lives.

At the Imaginaries Lab, we believe that humanity needs tools to enable new ways of understanding and imagining, and new ways to live, that provide more equitable socially and environmentally sustainable futures. We are creating those tools through developing creative research methods, adapted from those used in design practice, and exploring their use in a variety of cross-disciplinary contexts. We do research, and we teach others how to do research, using design as a form of inquiry.
using design methods to understand how people understand
using design methods to help people understand in new ways
using design methods to help people imagine new ways of living
How do people understand local government?
If you could hear electricity, would you understand it differently?
Can you use model landscapes to explore how you think about your own life?
Can we create new metaphors to help us understand complex ideas?
Judge Institute,
University of Cambridge
Welcome: About this site

Send an example (or picture) or add a comment

Increasingly, many products are being designed with features that intentionally restrict the way the user can behave, or enforce certain modes of behaviour. The same intentions are also evident in the design of many systems and environments.

How products increasingly control and restrict your behaviour

HOME
Architectures of Control Blog
Welcome: About this site

INTRODUCTION
What are architectures of control in design?

THE RANGE OF ARCHITECTURES OF CONTROL
The built environment
The digital environment
Design for behavior change
Behavioral Design
Persuasive technology
Design for sustainable behavior
Many different areas (and traditions) of psychology
Sociology, science & technology studies
Ethnography, cognitive anthropology
Architectural theory
Human-computer interaction
Ergonomics and human factors
Decision science, behavioural economics
Cybernetics
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.
Design com Intento
101 padrões para influenciar comportamentos através do design

Dan Lockton
com
David Harrison
& Neville A. Stanton
Tradução: Luis Oliveira

Requisite Variety
energy use and sustainability
The Helen Hamlyn Centre for Design at the Royal College of Art undertakes design research and projects with industry that will contribute to improving people's lives.
Real time energy use

165 kg CO₂ per hour

See more on CarbonCulture
Submit feedback
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

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

- 2,044kWh Energy use
- £163 Energy cost
- 1,072kg Carbon impact

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.
The 11 partners in SusLabNWE

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

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
developed by Natalia Romero Herrera, TU Delft
Here's something that could help us cut carbon emissions. The hot-tap taps break regularly, that's why we need the kettle!
mental models and mental imagery
Energy’s ‘invisibility’ is a key issue in people’s understanding.
Drawing Energy

V&A Digital Design Weekend
~13,700 visitors
100 Drawing Energy participants
What does energy look like?
\[ \Rightarrow = \text{Po} \]
we started to see that metaphors were important to people’s mental models of abstract or invisible concepts
\[ ^1\text{H} + ^2\text{H} \rightarrow ^3\text{He} \]
It comes and it goes. somewhere.
Drawing Energy:
Exploring perceptions of the invisible
Powerchord
Sonified energy monitor
Electric Acoustic: Sonification and cymatics (vibration displays)

Electricity use data for building for 24 hours, turned into sound and vibrations

Next step: real-time, interactive
Electric Acoustic: Sonification and cymatics (vibration displays)

Electricity use data for building for 24 hours, turned into sound and vibrations.

Next step: real-time, interactive.
metaphors
literally
‘carrying across’

μετά (meta), “after, with, across”
φέρω (pherō), “to bear”, “to carry”
a metaphor is:

‘a device for seeing something in terms of something else. It brings out the thisness of that or the thatness of a this.’

(Kenneth Burke, 1945)
‘The way we understand new things is to conceive of them in terms of things we already know’ (Dan Saffer)
...which suggests, if you want people to understand something new, it might work to frame it in terms of something they already understand
1. To start a program just click on it.
To see the programs in this room, hold down the F1 key.

- Other options
<table>
<thead>
<tr>
<th>Week of</th>
<th>Event Details</th>
</tr>
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<tbody>
<tr>
<td>4 May 19</td>
<td>Cross-Partnership Summit (London)</td>
</tr>
<tr>
<td>6 May 19</td>
<td>Cross-Partnership Virtual Summit (Online)</td>
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**Budget Considerations**

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<tr>
<th>Item</th>
<th>Cost</th>
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<td>1</td>
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**Timeline**

- 4 May 19: Cross-Partnership Summit (London)
- 6 May 19: Cross-Partnership Virtual Summit (Online)

**Additional Notes**

- Event 1: Important meeting with key stakeholders
- Event 2: Detailed planning for upcoming conference
- Event 3: Tendering documents due for new project
- Event 4: Final review of project scope

**Related Tasks**

- Task 1: Draft invitation for summit
- Task 2: Review meeting minutes
- Task 3: Update project timeline
- Task 4: Confirm speaker availability for summit
Even the names of some of the major products and services of our age: Facebook, Twitter, Photoshop, Snapchat –
There's the ‘pitch generator’ idea of something being like X for Y:

Like Uber but for dog sitting

Like a café but for robots

but metaphors go a bit further
Metaphors We Live By

George Lakoff and Mark Johnson
Metaphors are the foundation of our language, and also our conceptual system, but are so ingrained that we are often not conscious of them.
Metaphors are the foundation of our language, and also our conceptual system, but are so ingrained that we are often not conscious of them.
Your claims are indefensible. She attacked every weak point in my argument. His criticisms were right on target. I demolished his argument. I've never won an argument with her. You disagree? Okay, shoot! If you use that strategy, she'll wipe you out. She shot down all of my arguments.
Your claims are **indefensible**. She **attacked every weak point** in my argument. His criticisms were **right on target**. I **demolished** his argument. I've never **won** an argument with her. You disagree? Okay, **shoot**! If you use that strategy, she'll **wipe you out**. She **shot down** all of my arguments.
ARGUMENT IS WAR
What if ARGUMENT IS DANCE?
What metaphors are in use that shape our worldview?

How have metaphors ‘persuaded’ us, or limited the scope of our thinking, without our necessarily having realised it?
THE ECONOMY IS ?
FRAMING THE ECONOMY

How to win the case for a better system...

NEON
NEF
FrameWorks Institute
PIRC
HOW DOES THE BRITISH PUBLIC THINK ABOUT THE ECONOMY?

These are the key cultural models, the shared, durable ways of thinking we identified through in-depth interview research.

WHAT THE ECONOMY IS AND HOW IT WORKS

Economy as Container
People saw the nation as functioning like a pot, with people putting in (contributing) or taking out (draining).

Economy as Money
 Discussions of the economy are nearly always about money and people often drew on the metaphor of circulation.

Cognitive Hole
While people had some limited ways of understanding the economy, many mechanisms of the economy remain in a black box, seen as being governed by ‘mysterious market forces’.

Edge of Disaster
The economy was thought of as volatile, unpredictable and difficult to manage, with language like ‘tumbling’, ‘falling’ often being used in interviews.

WHY THE ECONOMY WORKS AS IT DOES

System is Rigged
Many thought that the economy was manipulated by elites with coordinated nefarious intent.

Hidden Agenda
People displayed remarkable and blanket distrust of news sources, assuming different ideological biases.

Greed = Human Nature
At base, human nature was often assumed to be selfish, therefore producing natural and inevitable inequality.

These models in particular led to tremendous fatalism and an inability to imagine positive, structural changes in the economy.

HOW THE ECONOMY SHOULD WORK

National Self-Reliance
People thought Britain should aim to meet its own basic needs without being reliant on other countries.

Ideal Past
People had nostalgia for a time when wages were high, inequality was low and, as a country, we were more ‘self reliant’.

Government Responsibility
Despite cynicism about elites, people saw a role for the government in fixing problems and regulating the economy.
Be aware of (and perhaps inspired by) the cultural dimensions of metaphors
It's worth being aware of the limitations of metaphors
It’s worth being aware of the limitations—and side effects—of metaphors.
‘All models are wrong, but some are useful’

George Box
All *metaphors* are wrong, but some are useful.
AIDS and Its Metaphors

Susan Sontag

Infectious diseases to which sexual fault is attached always inspire fears of easy contagion and bizarre fantasies of transmission by nonvenereal means in public places. The
DISEASE IS?

— something people ‘fight’ (so, if they don’t ‘fight hard enough’, it’s their fault)
— something ‘polluting’ (so, people with diseases are ‘unclean’ or have allowed themselves to be polluted)
— something ‘punishing’ people for things they’ve done
All metaphors are wrong, but some are useful
Metaphors as a way of prompting discussion or reflection, and generating ideas
Maybe the metaphors people use tell you something about how they think about a situation
Mental Landscapes (Delanie Ricketts)
Mental Landscapes (Delanie Ricketts)

Projects are landscapes

Careers are landscapes

Events or things are features of landscapes (hills, bridges, trees, rivers, roads, rocky patches, etc)
Mental Landscapes (Delanie Ricketts)
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Mental Landscapes (Delanie Ricketts)
Mental Landscapes (Delanie Ricketts)
Mental Landscapes (Delanie Ricketts)
new metaphors could mean new ways to understand
New
Metaphors
Idea generation through juxtaposition
(Arthur Koestler)
HE FOUND A WAY...

King Gillette’s Safety Razor

By Alfred Lief

When King Gillette first tried to sell his safety razor, investors were skeptical. They couldn’t visualize the American male giving up his barber.

A salesman who wanted a business of his own, King C. Gillette tackled the dictionary to find an idea for something he could invent, make, and sell over and over again to the user. This was in the 1890’s, and his $6,000 a year was a pretty good salary. But he was 40 and restless.

Gillette had not gotten far into the alphabet when a personal need supplied an answer that literally hit him on the chin. He discovered that shaving was a source of irritation to the skin of his chin. He asked himself, ‘What if a razor could be made that would shave without cutting the skin?’ And just like that he had an answer. A razor could be made that would shave without cutting the skin.

What he didn’t see was the trouble to come. Gillette knew little about mechanics, less about steel. With materials and tools bought in a Boston hardware store he made a crude model. From 1895 to 1900 this was all he had (besides persistent faith), for he couldn’t get technical advice or financial help. Then two businessmen introduced him to William E. Nickerson, a graduate of the Massachusetts Institute of Technology. Nickerson found a way to make a razor that Gillette’s own invention could not.

The rest, as they say, is history.
Can we use **new metaphors** to inspire or suggest new products or services?
Thing 1
Thing 2
Thing 1 cards represent concepts that are (maybe) hard or abstract to visualize.
Thing 2 cards represent things, or phenomena, that might work as a metaphor for other things.
Power relations between people
Contentedness
Your challenge in the next 20 minutes
Design Thinking Through New Metaphors: Workshop outline

12.30 – 12.50 Introduction

12.50 – 13.15 Work in groups of 4 or 5, look through the cards you have in front of you, and come up with an idea for a new product or service. Use the worksheets to help you.

13.15 – 13.30 (some) groups present/talk about their concepts; discussion
Pick a Thing 1 and a Thing 2
(you can try out multiple combinations—whatever appeals or seems interesting)
We’re going to assume here (because of lack of time) that some of the details on the cards represent insights which have arisen during user/customer research.

In reality you would do this properly.
**Thing 1 has these characteristics**

Include characteristics that are hard to measure or quantify, but which you know exist.

**Thing 2 has these characteristics**

How could some of Thing 1 and Thing 2’s characteristics map to each other?
Thing 1 has these characteristics

TripAdvisor comments

Include characteristics that are hard to measure or quantify, but which you know exist

Thing 2 has these characteristics

Facial expressions

How could some of Thing 1 and Thing 2’s characteristics map to each other?
Thing 1 has these characteristics:
- honest
- opinionated
- customized
- anonymous
- enthusiasm
- complaints
- can be fake, bipolar, photos, recommendations, out of context, touristy, nested, social, informative

Include characteristics that are hard to measure or quantify, but which you know exist

Thing 2 has these characteristics:
- expressive
- visual
- personal
- telling
- honest
- casual
- automatic
- universal
- transcend language & culture
- misleading
- subtle
- emoji
- life / creation

How could some of Thing 1 and Thing 2’s characteristics map to each other?
Think up what a new product or service could be that uses (or is at least inspired by) the metaphors you ‘create’ by juxtaposing cards.
Plant growth

Pensions
New Metaphors – newmetaphors.com
New Metaphors – newmetaphors.com

Shadows

Worrying about what people think of you
This{product service}{uses is inspired by}

Thing 2

as a metaphor for

Thing 1

It could be useful for
A flock of birds

Design goal: Make node visible
Approach: Build of floor method

Principles: Recipe dynamic
- Make invisible visible
- Beacon leader (group is leader)
- Stronger together

VI devices: Heat map, spatial map of wish list

This mobile interface is inspired by flock behavior to visualize and direct humans in an unfamiliar city using high availability & high density Wi-Fi signals.
New Metaphors

New Metaphors for Qualitative Interfaces. An experiment by @danbickton using cheap obliterationg.uk.com

Pittsburgh, PA

Joined September 2017

Tweets 5,979
Following 4
Followers 26

Tweets

New Metaphors @newmetaphors · 12m
Would it make sense if we had a display using
as a metaphor for 🤔?

Experience that comes with age (rather than age itself)

Plant growth

Experience that comes with age (rather than age itself)

New Metaphors @newmetaphors · 42m
What if you designed a visualisation using

Who to follow

Skeptech @skeptech_
Follow

Jillian Crandall @network...
Follow

Monday @bikemonday
Follow

Find people you know

Trends for you

NEW SHOW
60.3K Tweets
Ticketmaster
150T
See through words

The metaphor designer isn't trying to make something beautiful. She wants to change your view on things. Here's how.
Everything we’ve used is downloadable at: newmetaphors.com

Please get in touch if you think this could be useful for your team

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