



Faculty of Design

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Tangible thinking: Materializing how we imagine and understand systems, experiences, and relationships

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Tangible Thinking:

Materializing how we imagine and understand systems, experiences, and relationships

Full-day Workshop / Activity group. Ideally 15–20 participants.

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Introduction

This workshop asks how we can use methods drawn from design, art, and craft, informed by interdisciplinary and systems thinking, to materialize not just envisioned ‘things’, but abstract or invisible ideas and relationships. There is an emerging set of research practices using tangible or material models, or constructive making and embodying to visualize how people think about concepts ranging from invisible systems and infrastructures to mental models, personal data which would otherwise be invisible, or even the phenomenological dimensions of experiences themselves. Examples include explorations of the design of public services, healthcare processes, mental health experiences, career paths, crafters’ movements, and experiences of social networks (Aguirre Ulloa and Paulsen, 2017; Rygh and Clatworthy, 2019; Luria et al, 2019; Ricketts and Lockton, 2019; Nissen and Bowers, 2015; Fass, 2016).

While these methods and tools come from many contexts, they share an aim of helping people express and communicate thinking about *things we cannot see*, to make them tangible, reified, to enable discussion or peer support, or to facilitate group sensemaking. Methods and insights rooted in one context may be transposable to others. This seems worth exploring for the systemic design and innovative social research communities.

How can methods inspired by (often participatory) design and facilitation processes from user experience and service design—or the attention to metaphor and novel translations of abstract concepts emerging in data physicalization, synaesthesia research, and even art therapy—as a form of research through design, a way to communicate otherwise intangible or inaccessible private worlds? How important are material choices, aesthetics, ease of construction, and the life of ‘artifacts’ once they have been constructed? What is the value of individual (even private) tangible tools, compared with shared activities? Is the process as important as the ‘outcome’, as part of a constructionist learning approach? There is no ‘right’ way to externalise thoughts: we need “visual prostheses” (Jonassen and Cho, 2008) to share our mental imagery with each other.

Workshop structure

The workshop will include participants i) trying out their own tools (or areas of focus) together and ii) carrying out a tangible thinking activity called **Interdisciplinary Landscapes** focused on materializing participants' thinking about **academic disciplines and their relations from a systemic perspective**.

Before the workshop, we will invite confirmed participants to propose either their own tools or something new that they want to test out, or a particular topic they would like to explore. We will aim to curate parts of the session around these. We would be interested for other conference participants to visit the workshop as observers, and perhaps document what they see happening.

09.30–10.15 Welcome, intros, and short presentation of variety of methods

10.15–11.30 Participants (and facilitators) introduce their tools and/or topics they're interested in exploring together

11.30–11.50 break

11.50–13.00 Interdisciplinary Landscapes activity part 1 (mapping / modeling)

13.00–14.00 lunch

14.00–14.20 Interdisciplinary Landscapes activity part 2 (discussion / feedback)

14.20–16.00 Participants set up their tools / topics. Split into groups and do the activities. Also including a break.

16.00–17.00 Presentation / discussion / documentation. What have we learned? What do these kinds of methods help us understand?

Expected outcomes

The workshop will produce a set of 'artifacts' or 'tableaux' created using the tools, which we aim to exhibit—appropriately annotated—during the conference (**we will do a separate Prototype Gallery application**). The exhibition could show co-created categories the participants determine, and visualize interaction or engagement the tools trigger in those who interact with them (whether directly interacting with the tools, observing, or seeing the visualizations after the activity itself).

We also intend to write up the workshop in an article for the RSD8 proceedings. The aim is to lead to a review paper for a leading design journal, about the field of 'tangible thinking' tools and their value within systemic design, and more widely.

Interdisciplinary Landscapes activity

Field, n. From Feld: open country

-an open land area free of woods and buildings

-area or division of an activity, subject, or profession

-a space on which something is drawn or projected

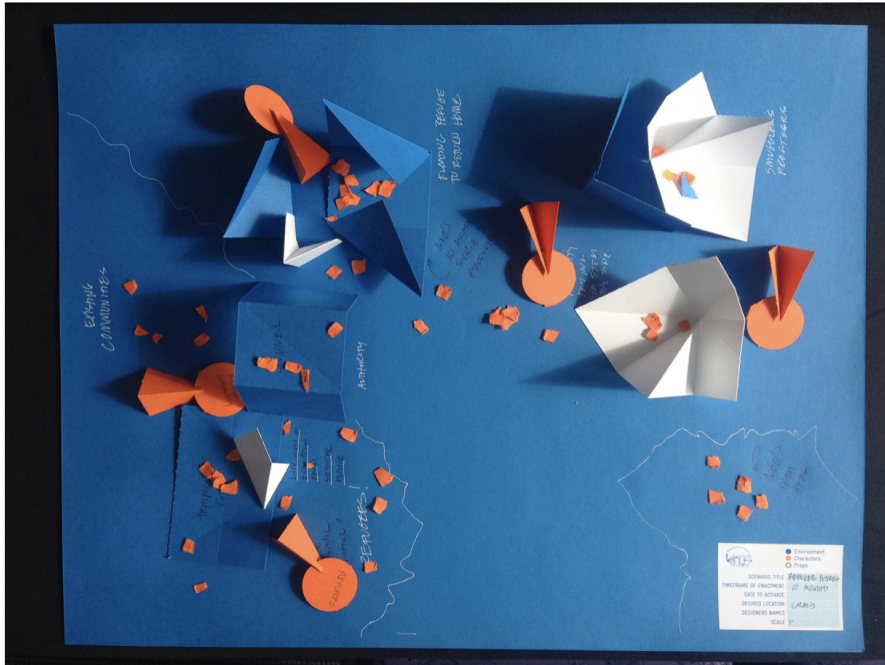
(Merriam-Webster; OED)

The Interdisciplinary Landscapes activity focuses on materializing participants' thinking about the nature of academic disciplines and their relations from a systemic perspective, using landscape (and other) metaphors in a tangible form. There is a growing scholarly literature describing ongoing transformation of disciplinary structures of knowledge production in higher education (Klein, Biagioli, Chandler, Post, etc). These changes are signaled by a growing list of prefixes—interdisciplinary, multidisciplinary, transdisciplinarity, post- pre- meta- cross- and anti-disciplinarity—that seek to name the ways that disciplines are transformed as they accommodate new kinds of questions and new ways of asking them.

Rather than attempt to map these shifts from above, or to advocate for or against a given form of (inter)disciplinarity (as much of this scholarship does), the activity we propose seeks to surface how participants conceptualize their own field(s) of inquiry—views of the 'system' from within. In his discussion of "postdisciplinarity," Mario Biagioli has argued that the conceptual model of the organization of knowledge in the sciences is shifting—from "From Discipline and Canon to Collaborations and Problems"—in ways that humanities scholars might find useful, especially given the increasing sense that the humanities are in crisis. We aim to make the most of the opportunity of the RSD community's diverse disciplinary backgrounds to participate in the Interdisciplinary Landscapes activity.

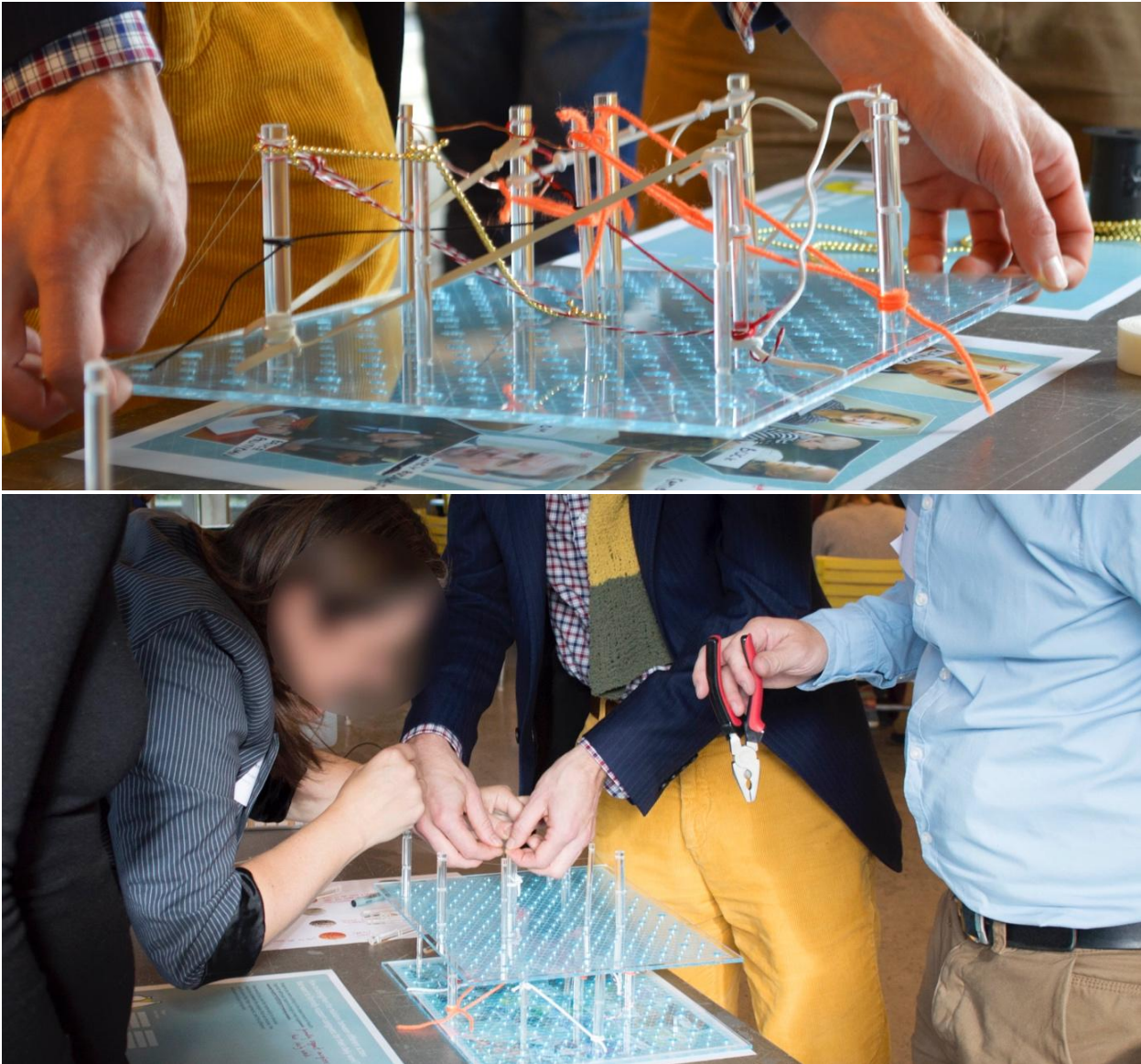
This systemic design approach to disciplinarity has relevance at the institution-specific level: the particular ways that departments and programs are organized at a college or university enact mental models: university departments are most often spoken about as if they were the same thing as academic disciplines, and these are in turn mapped onto institutional structures: the humanities building, the Science Quad, etc. Scholars working in emerging fields like, say, "Critical Ethnic Studies" or "Disability Studies" must then navigate this intellectual landscape. To what extent do extant mental models—rather than interdisciplinary lines of inquiry themselves—contribute to the way emerging fields thrive (or don't) at given institutions?

Some examples of 'Tangible Thinking' tools



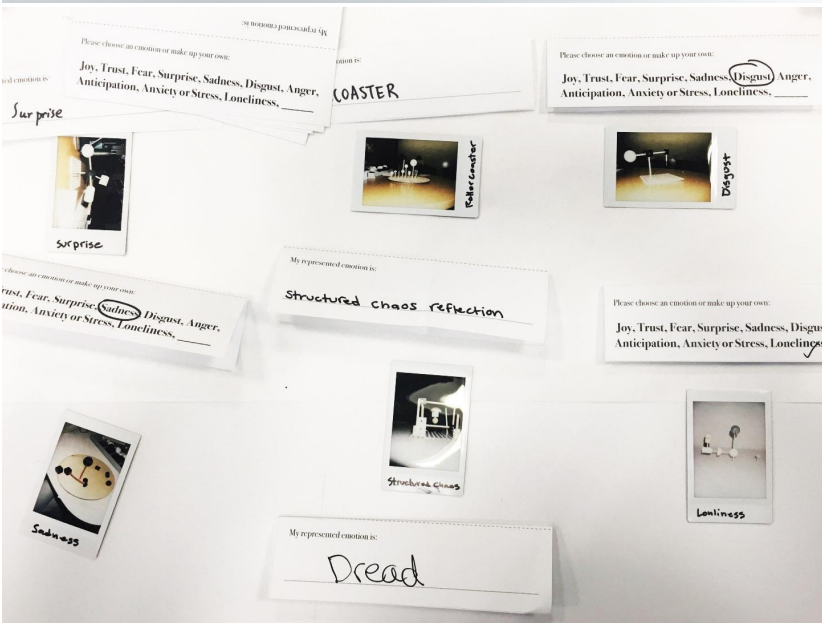
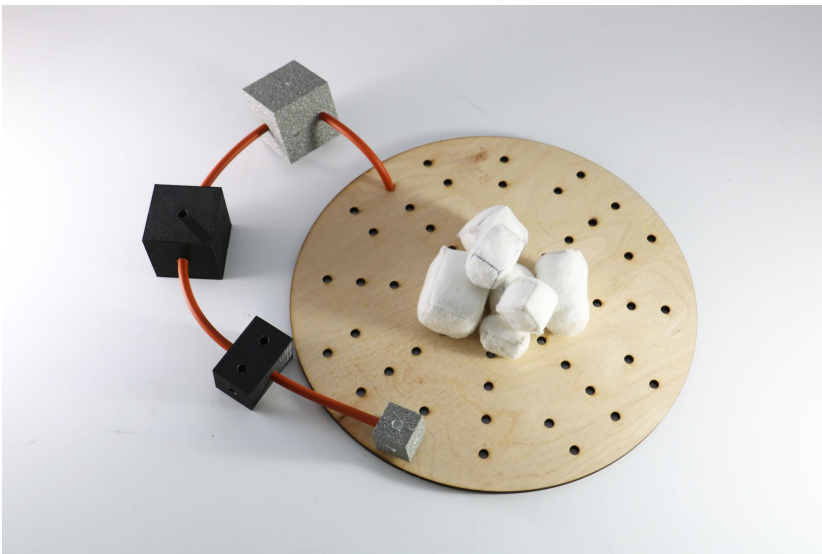
“Alternative Unknowns Method,” for participatory scenario planning as part of disaster preparedness. Developed by Chris Woebken and Elliott P. Montgomery of the Extrapolation Factory

<https://extrapolationfactory.com/Alternative-Unknowns-Method>



A multi-sensory relational tool that supports the design process of complex public services, developed by Manuela Aguirre Ulloa and Adrian Paulsen. Photos from RSD3, 2014.

<https://journals.hioa.no/index.php/formakademisk/article/view/1608>



Emotional Modeling, by Laura Rodriguez, Katie Herzog, Josh LeFevre, Nowell Kahle, and Arden Wolf, <https://medium.com/new-ways-to-think-fall-18> Second image represents 'anxiety' from the participant's perspective.



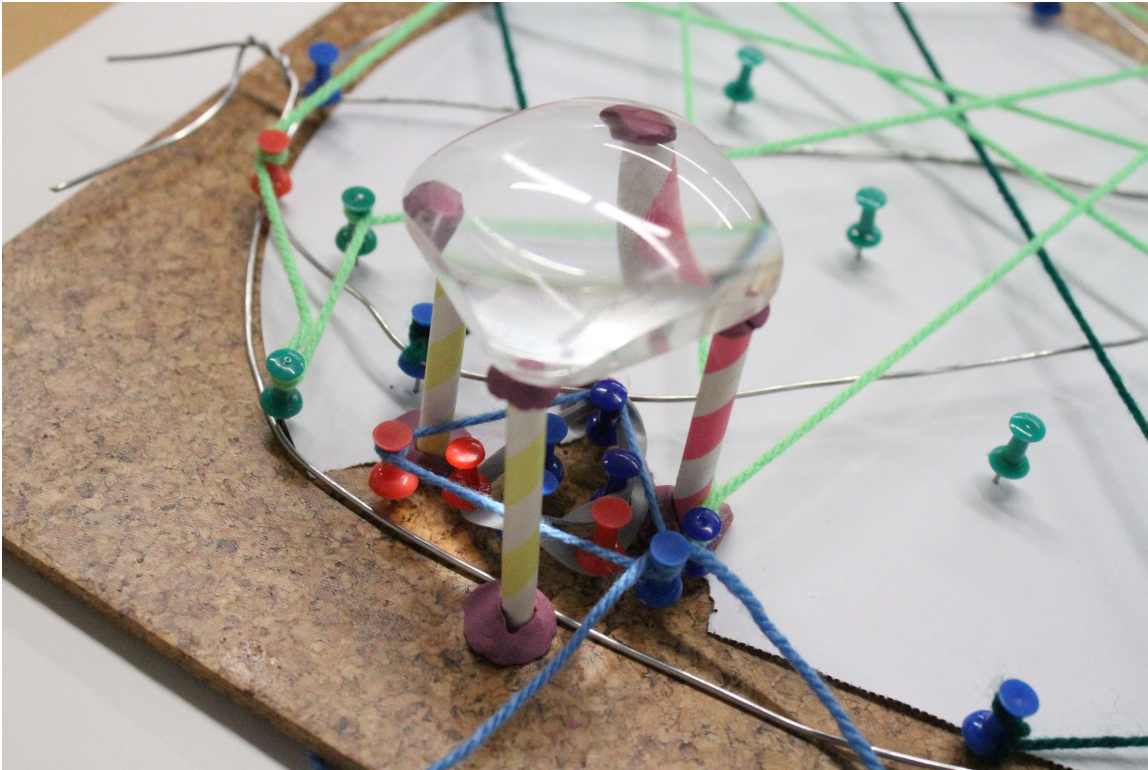
Empathy Rock Garden, by Jen Brown, Carlie Guilfoile, Michal Luria, Uluwehi Mills, and Supawat Vitoorakaporn, <https://medium.com/empathy-rock-garden-personalized-potions/empathy-rock-garden-personalized-potions-54daee729921>



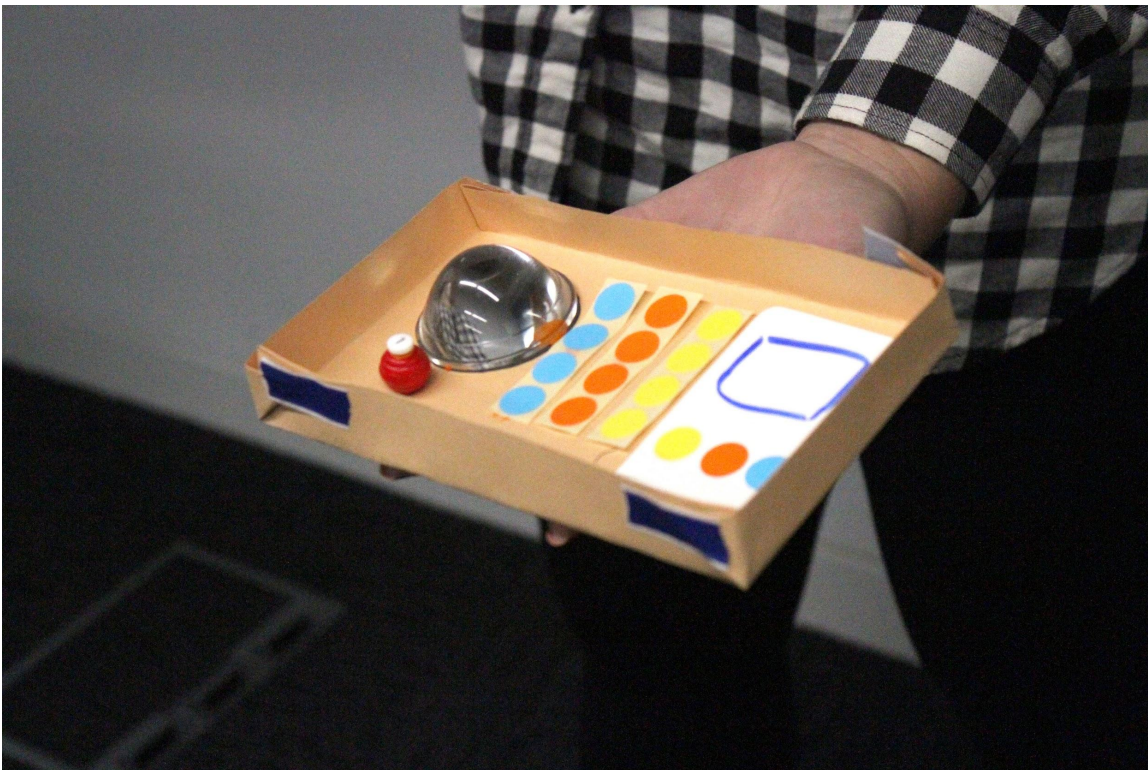
Actor mapping flags, tangible co-design communication tool created by Karianne Rygh, AHO (Rygh & Clatworthy, 2019).



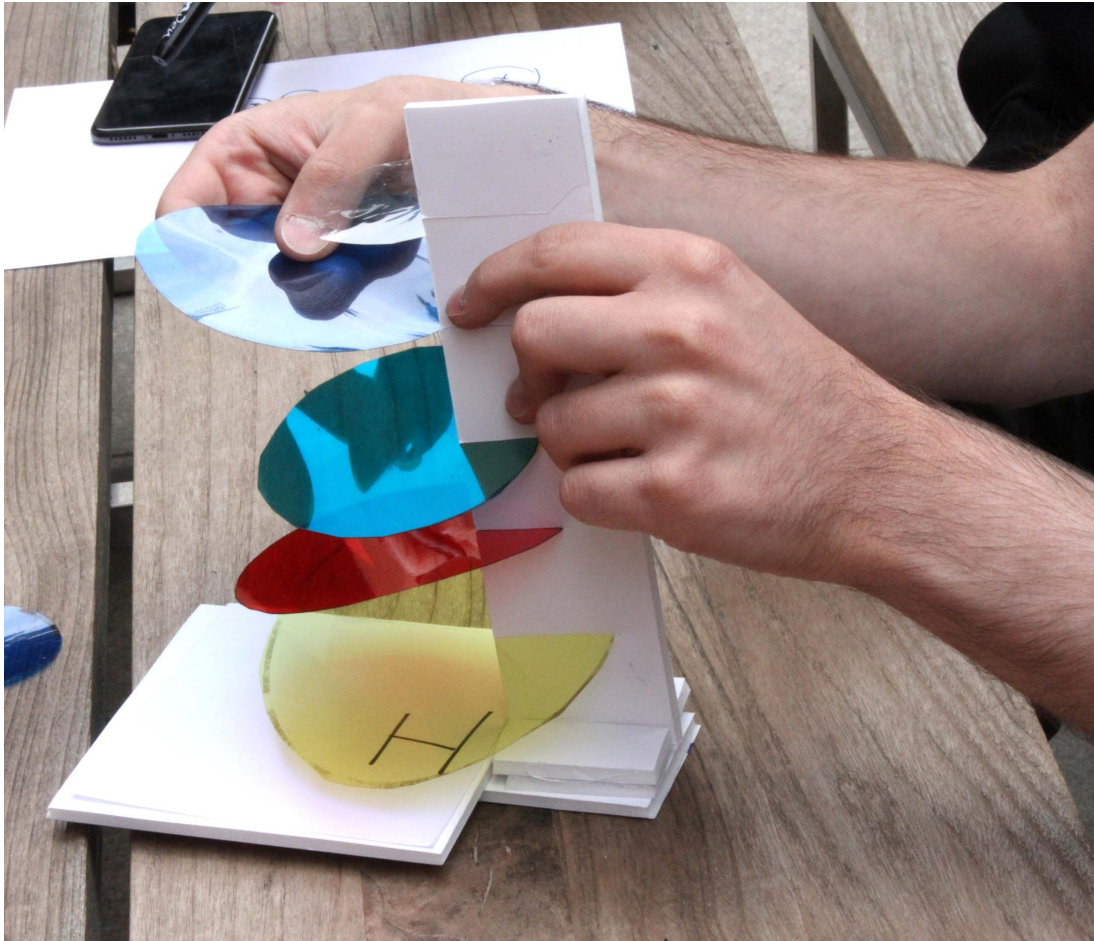
Mental Landscapes, by Delanie Ricketts and Dan Lockton,
<http://imaginari.es/publications/p86-ricketts.pdf>



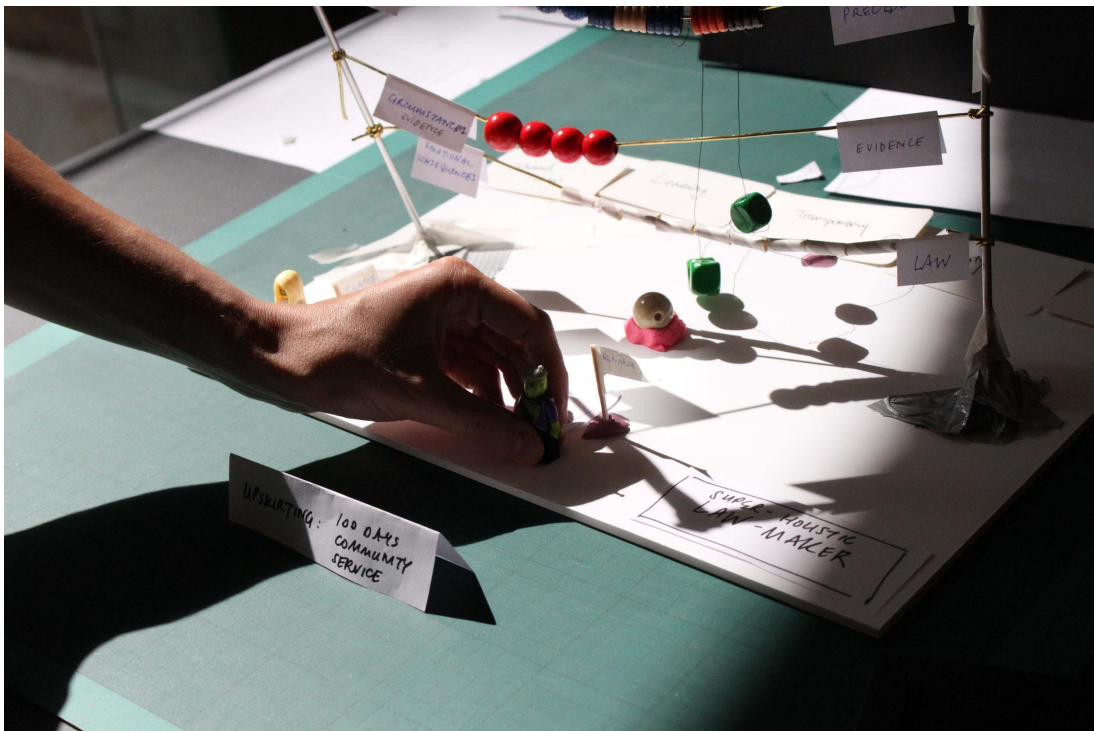
Machine learning model, John Fass, 2018



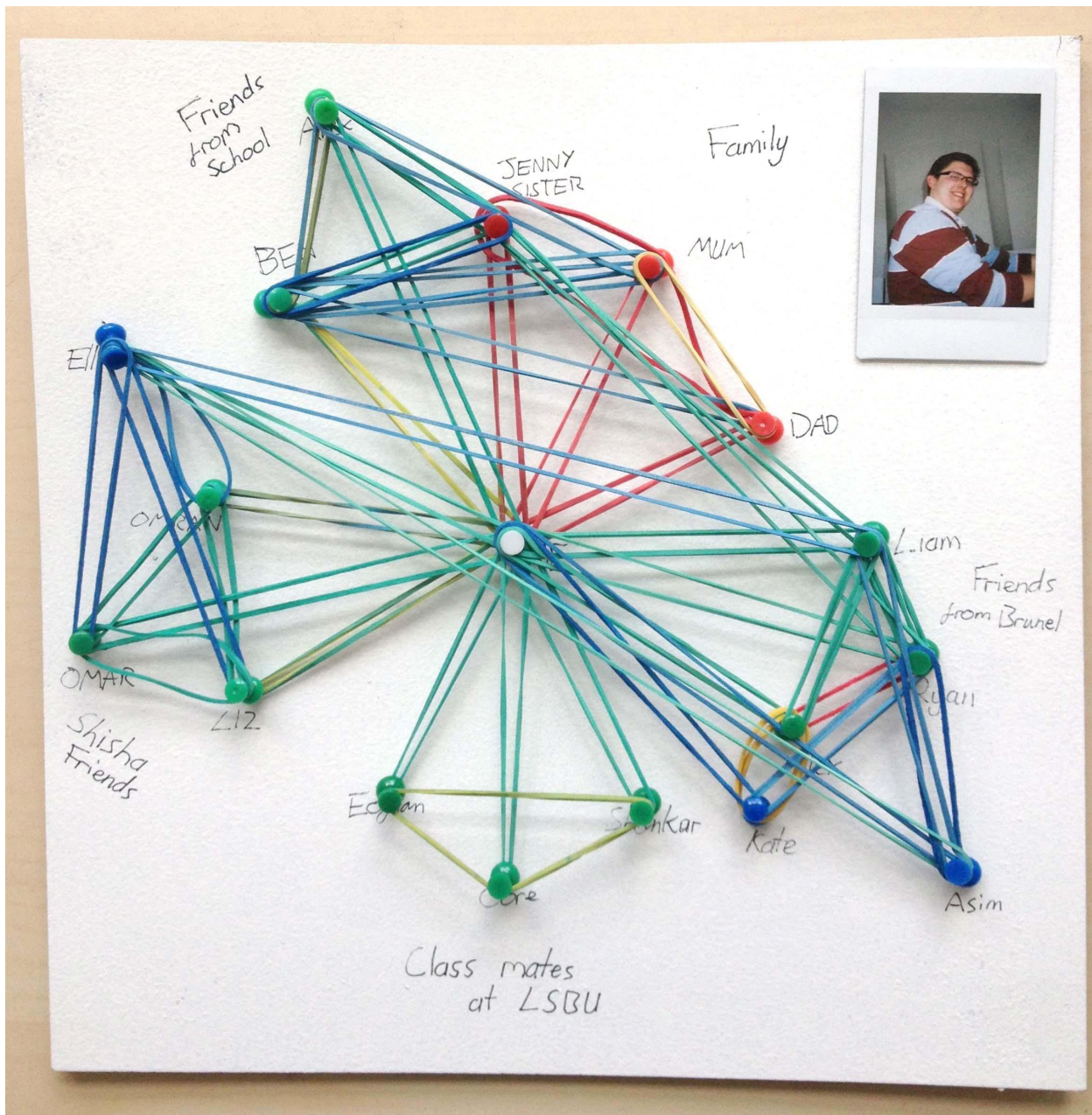
Demonstrating data tools, John Fass, 2018



Algorithmic filtering, John Fass, 2018



A computational judicial system, John Fass, 2018



Digital social networks, John Fass, 2018



Model of a digital personal profile, John Fass, 2018



Model of algorithmic decision making, John Fass, 2018.

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Other resources

- Data physicalisation collection (Yvonne Jansen and Pierre Dragecevic) <http://dataphys.org/list/>
- The 'Innovative Social Research Methods' Facebook group run by Deborah Lupton <https://www.facebook.com/groups/333716010504710/>
- Roberta Tassi, Service Design Tools <http://www.servicedesigntools.org/>
- Extrapolation Factory, Alternative Unknowns Method <https://extrapolationfactory.com/Alternative-Unknowns-Method>
- Matthew Frye Jacobson, The Education Project <http://educationproject.yale.edu>

Technical and space requirements

A room with tables and chairs which can be re-arranged for group work. We can bring materials for the workshop activities (and we will ask participants bringing their own tools to bring their own materials).

The conference themes of **Systemic Design and Organizations, Business Practices, and New Economies, Systemic Design Models and Processes for Sustainment, and Systemic Design and Governance: Policymaking and Decision Making** fit best with the workshop.