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## **Drawing Together, Infrastructuring and Politics for Participatory Design**

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# DRAWING TOGETHER

INFRASTRUCTURING AND POLITICS  
FOR PARTICIPATORY DESIGN

a visual collection of cases, issues, questions,  
and relevant literature



Edited by Andrea Botero — Helena Karasti  
Joanna Saad-Sulonen — Hanne Cecilie Geirbo — Karen S. Baker  
Elena Parmiggiani — Sanna Marttila

2019  
INTERACT 1  
Interact Research Unit  
UNIVERSITY OF OULU

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D A W N  
R I G  
TOGETHER

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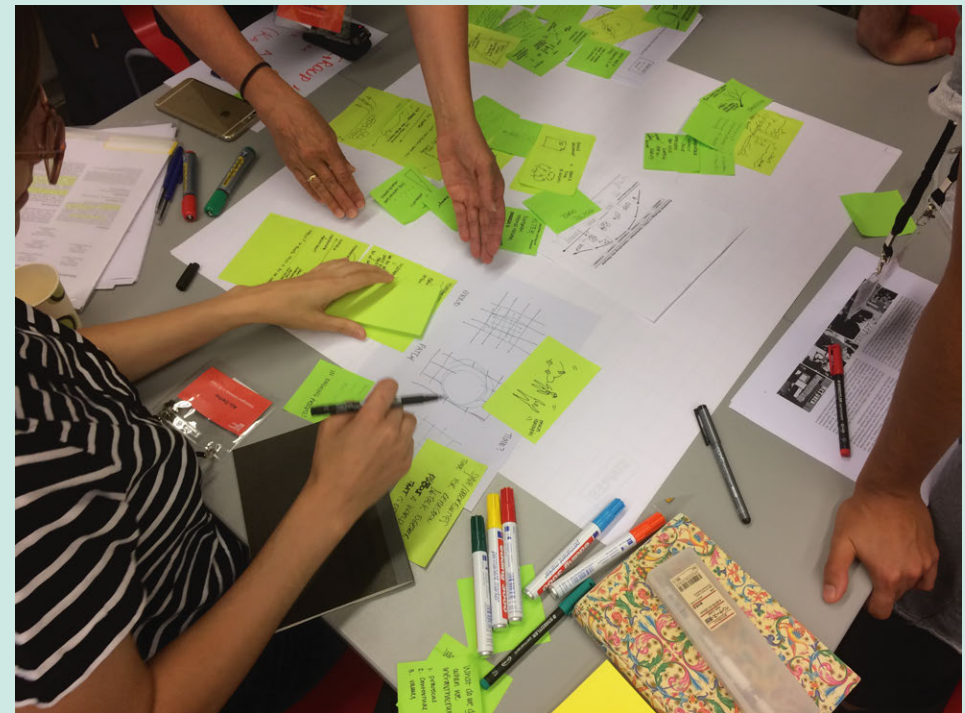
## A WORKSHOP ON INFRASTRUCTURING IN PD

This e-zine documents the discussions and group work done at the 'Infrastructuring in Participatory Design' workshop, a full-day event that took place at the Participatory Design Conference 2018 in Hasselt and Genk, Belgium<sup>1</sup>. The workshop invited the Participatory Design (PD) community to come together, with their cases or projects, questions and topics of interest in order to take stock of empirical insights and conceptual developments around the notions of infrastructure and infrastructuring, and their relevance to the revitalization of the political agenda of PD. Following a hands-on approach, participants - collectively and critically - mapped issues, disentangled assumptions, identified blind spots, and outlined new research opportunities charting the possibilities and limitations of an

infrastructuring approach in Participatory Design at large.

Participants at the workshop came from a broad range of domains (e.g. Design, Science and Technology Studies, Anthropology, Social Sciences, Information Sciences, Architecture), representing interests in infrastructuring from multiple perspectives. Prior to the workshop, participants were asked to 1) write a position statement and read everyone else's position statements, 2) look at their own work in relation to the theme of the workshop to pick one artifact to bring to the workshop, 3) contribute to a collective compilation of research literature dealing with infrastructures and infrastructuring. With these activities, we together prepared issues, ideas, and concerns to work with in the workshop. ▶

<sup>1</sup> For the framing of the workshop invitation see: Karasti, H., Botero, A., Parmiggiani, E., Baker, K., Marttila, S., Saad-Sulonen, J., & Geirbo, H. C. (2018). Infrastructuring in PD: What Does Infrastructuring Look Like? When Does It Look Like That? In Proceedings of the 15th Participatory Design Conference - Volume 2 (pp. 45:1-45:3). New York, NY, USA: ACM. <https://doi.org/10.1145/3210604.3210618>





The day of the workshop started with a brief introduction by the organizers to set up the agenda for the day. As a starting point for the collective effort, we proposed to think about “What does infrastructuring look like?” and following Star and Ruhleder<sup>2</sup>, we also asked “When does it look like that?”. To gather the different threads, during the event and also in this publication, we rely on Latour’s invitation to “draw together”<sup>3</sup>. That is to, literally and speculatively, identify, trace and propose some of the elements, conflicting positions and promising paths we can see towards a better understanding of the work infrastructuring might do for participatory design and politics and vice versa.

In practice, participants worked in four small groups in a series of four consecutive sessions. Each session was formed around discussions centered on an exercise or a set of questions that helped participants present their insights to each other, while jointly creating a collage board using physical artifacts such as post-its, string, straws, and such. When briefed about the approach to making this particular collage board, we asked participants to think on the picture walls and visualizations that have become famous in media depictions of detective and forensic work<sup>4</sup>. Participants used their cases, ideas, questions and the literature to build interrelations and discuss issues; while addressing the varied understandings of infrastructuring approaches that exist. The collage boards were documented (with pictures) and collectively discussed at several points during the day. Each of the sessions added a layer on top of the previous layer.

After completing each layer, the groups’ brief presentations were recorded and later transcribed during the post-production of this e-zine. We also asked participants to fill in a very short online feedback questionnaire after the event.

<sup>2</sup> This relational view of infrastructure was first articulated in: Star, S. L., & Ruhleder, K. (1996). Steps Toward an Ecology of Infrastructure: Design and Access for Large Information Spaces. *Information Systems Research*, 7, 111-134

<sup>3</sup> In 2008 Latour said: “Let me raise the question of design, taken literally in the etymological sense of drawing or rather of “drawing together”. How can we draw together matters of concern so as to offer to political disputes an overview, or at least a view, of the difficulties that will entangle us every time we must modify the practical details of our material existence?” Latour, B. (2008, September). A Cautious Prometheus? A Few Steps Toward a Philosophy of Design (with Special Attention to Peter Sloterdijk). Keynote lecture presented at the Networks of Design Conference-Design History Society, Falmouth, Cornwall. (pg 12) Available: <http://www.bruno-latour.fr/node/69>.

<sup>4</sup> For a short overview of how forensic walls have been appropriated in popular culture see: Benson, R. (2015, January 23). Decoding The Detective’s “Crazy Wall.” Available at: <http://www.esquire.co.uk/culture/film/news/a7703/detective-show-crazy-walls/>



Each of the collage boards contains four layers that are listed here, and described at more length in the next sections of the e-zine:

**LAYER 1:**

Cases and positions

**LAYER 2:**

Collective issues:  
The what and when of  
infrastructuring

**LAYER 3:**

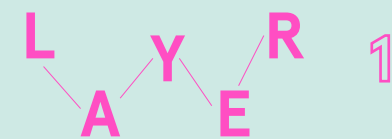
(Re)problematising  
politics,  
participation and  
infrastructuring

**LAYER 4:**

Uncharted  
territories: some  
research paths

The text for layers 2-4 is based on the audio recordings that we collected from each groups’ presentations at the end of the session. The text is not, however, a verbatim transcription as some editing has been carried out in order to improve the readability of the text.

The collection of all these materials forms the backbone of this e-zine. Our aim is to document, present and redraw the discussions in a visual way, illustrating the multiple paths of exploration for future readers, while providing some resources in the form of questions, ideas and references. The e-zine does not provide recipes, solutions or answers. Rather, it offers a collective documentation of topical issues raised by workshop participants engaged in the politics of infrastructuring.



Cases and positions



## GROUP 1:

Christine Hegel brought a reusable bottle to discuss her interest in infrastructuring in the Informal Micro-hauling Labor Market in NYC. She is exploring how formal actors in the recycling business can participate in designing infrastructure as part of cultivating greater recognition and valuation of the informal laborers in this business.

Laura Scheepmaker brought a photograph of a play-thing in the form of pads that make sounds when they are stepped upon by children playing. She is interested in infrastructuring as a way to help her explore roles for interactive technologies to scaffold social play between children with diverse abilities.

Hanne Cecilie Geirbo,  
Christine Hegel,  
Joanna Saad Sulonen,  
Laura Scheepmaker



## GROUP 2:

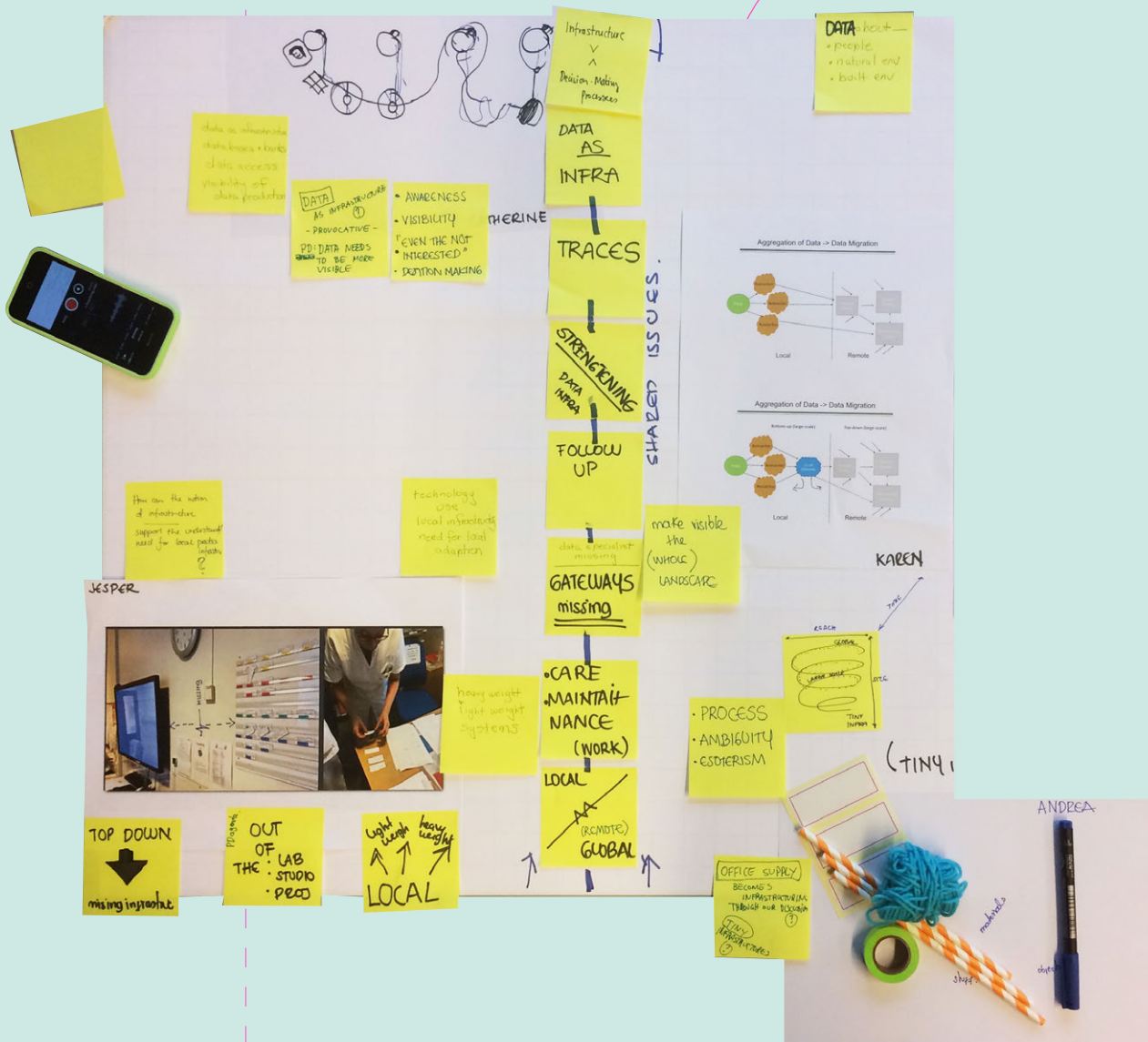
Karen S. Baker brought with her a printed diagram depicting local / remote data configurations for data sharing in the environmental sciences. She wanted to bring forward her interest in infrastructuring and in making visible local data management in this area.

Andrea Botero brought various office supplies (pens, tape, thread, etc) to question if these are mobilized as infrastructuring, when for example they are used in workshops with scientists trying to understand their research infrastructures.

Cathrine Seidelin showed a photograph of a workshop she organized where participants brought data objects they dealt with (the photograph was digital, therefore we included a quick sketch of it in the collage). She wanted to discuss if, and when, data can be considered as Infrastructure and how to do infrastructuring for Data Analytics.

Jesper Simonsen brought a collection of pictures from two hospital settings. The photographs featured an interactive board solution located in two different environments. In one it was incorporated into local practices while in the other it was detached and not so much used. In the second case users compensated by making local adaptations with a non-digital board. These examples illustrate challenges of local infrastructuring in Healthcare information systems.

**Participants:**  
Karen Baker,  
Andrea Botero,  
Cathrine Seidelin,  
Jesper Simonsen





Sanna Marttila brought some images and a brochure of the hack4-fi hackathon event she has been organizing around cultural heritage. She wanted to ask: “Can we collaboratively design socio-material-technical infrastructures in more collective, open and symmetrical terms? What are the tensions and dynamics of the becoming and making of an infrastructure and infrastructural change?”

Mette-Agger Eriksen brought a series of black and white images and drawings of a session from a workshop discussing the future of libraries. She wanted to raise issues relating to the politics of infrastructuring for (mutual) learning, particularly what are the roles and participation of non-human actors/materials in this? And how do these non-human actors enhance or challenge learning and change to happen?

Christopher Frauenberger brought a picture of the half-house project by R Aravena in Chile. He wanted to use it as a prompt to ask how to build half-houses for play situations. He is exploring roles for interactive technologies to scaffold social play between children with diverse abilities. Can infrastructures provide opportunities to effectively blur design and use times, i.e. provide opportunities to extend participation in design after the designers are gone?

Amanda Geppert shared a project board illustrating a five-week participatory design workshop process wherein young people redesigned sexual and reproductive health care to be adolescent-centered. The prototypes young people made responded to 'glitches' (moments when sexual and reproductive healthcare

Mette-Agger Eriksen, Christopher Frauenberger, Amanda Geppert,  
Sanna Marttila, Elena Parmiggiani



doesn't work for young people<sup>5</sup>) as signals for transformation wherein participatory design research worked towards infrastructuring equity.

<sup>3</sup> The notion of glitches is taken from: Berlant, L. (2016). The commons: Infrastructures for troubling times 2016. *Environment and Planning D: Society and Space*, 34(3), 393–419.

## GROUP 4:

In the workshop Alix Gerber drew the three figures of a mend, a patch and a weave that she had introduced in her position paper. Relating the figures with her empirical example of reimagining policing in Ferguson, she discussed how incremental (mending) and radical (weaving) change can influence each other over time and how an ongoing infra-structuring timeline proposes challenges with participation over time.

Helena Karasti brought pictorial representations of research infrastructure formation in Europe. Two panels illustrated the European level, top-down organised ESFRI strategy, and a national level with no fixed strategy. Through this juxtaposing, she talked to some of the politics involved between the high-level infrastructure building view and the local/national infrastructuring view of meeting top-down expectations.

Giacomo Poderi introduced a metaphor of a rhizome that draws from the theorizing by Deleuze and Guattari. The metaphor evokes thinking about the underground sprouts, unpredictable and randomly emerging connections that nevertheless form into something more solid and coherent. This double dimension of randomly emerging and yet managing to build stability into a trajectory of growth reminds us of infrastructuring. The metaphor also speaks to the complexities involved, for example, entanglements of people and interests in infrastructuring.

Anna Seravalli shared an artifact, a written contract document considered as a product of participatory design/infrastructuring project within the public sector in Sweden. She used the co-production agreement to talk about politics, different levels of learning and participation of different groups in a project that dealt with waste handling.



### Participants:

Alix Gerber,  
Helena Karasti, Giacomo  
Poderi, Anna Seravalli.

## LAYER 2

Collective Issues:  
The what and when  
of infrastructuring.

The second session was organized as discussions within each of the four groups with focus on drawing connections between the artifacts and issues presented earlier in the group. Each group first identified areas of interest that relate to infrastructuring and then searched for connections, differences, tensions and similarities between the presented cases/artifacts and identified topic areas of interest. Threads of wool were used to make connections (so they could be moved) amongst the cases laid out in the previous session. White tags were provided to annotate the connections. Some of the threads not only connected artifacts but came together to form a topic (area).

Hanne Cecilie Geirbo, Christine Hegel, Joanna Saad Sulonen,  
Laura Scheepmaker

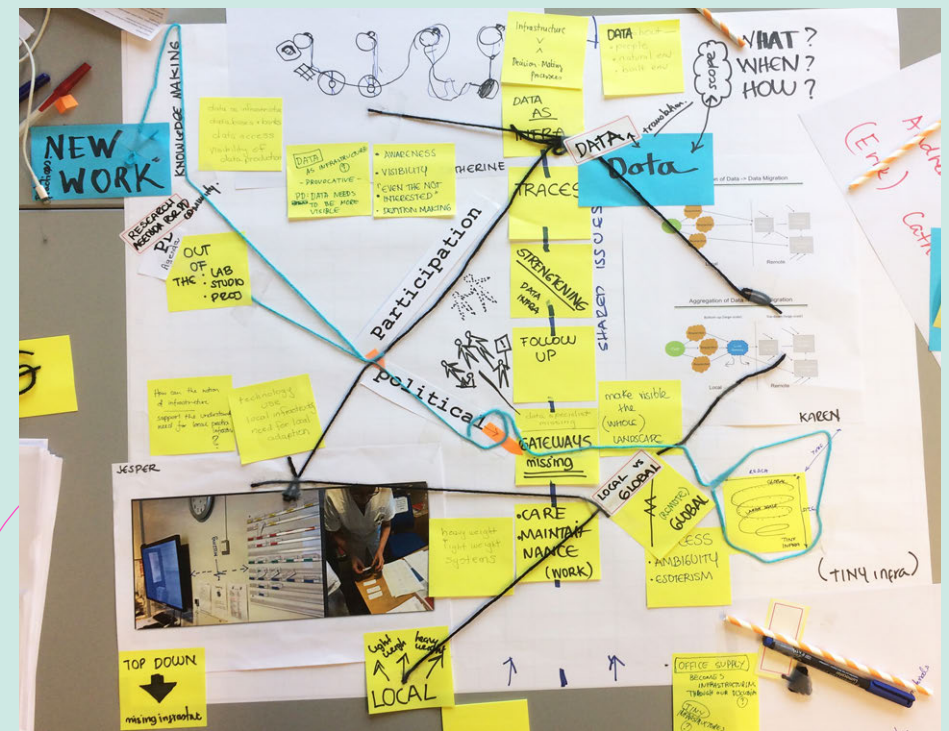
We discussed several themes based on our cases. Laura's case is about doing participatory design with schoolchildren with disabilities to make playthings, and how a PD process can be integrated with the school as infrastructure. Christine's case concerns the relation between the informal and the formal in the infrastructuring of can recycling in New York. Hanne Cecilie talked about the infrastructuring of the environment through a project where citizens are invited to build DIY sensors and contribute with data about air quality from their homes. Joanna's case puts in parallel the local, personal, and caring associated with research infrastructures as seen, for instance, in research stations versus in the top-down bureaucratic approaches of the EU. In our board, time and money are featured as the group talked about funding, internal resources, and interventions. Seeding became very important in the discussion and was used as a metaphor, as a theme. Why? Because for interventions you need to prepare, you have to deal with a lot of external

[illegible]



**(Group 2)** Karen S. Baker, Andrea Botero, Cathrine Seidelin, Jesper Simonsen

res but technical infrastructure). In order to adapt them and make them work, there's something locally happening that either facilitates the There are research field sites that have their local ways of handling data, and then there are these more remote repositories or archives to which they would like to submit their data. This brings up the need for some sort of local data person, a data specialist to handle work with data as a kind of gateway. This is comparable to the situation in Jesper's case where there is a need for a local data specialist that establishes and keeps the local-remote gateway open so to speak. That is why we have the local versus the remote, which came up in three of our cases. We also had a deviant case (because it didn't relate to data) with Andrea thinking of office supplies as infrastructure to build collaboration in a specific instance. This case brought us to consider the issue of tiny infrastructure. We were wondering if infrastructure studies as they started with a very large scale, are now also providing insights



into the very tiny, but still relational aspects of local instances of infrastructuring, that connect somehow to the more local, connected? We had a very interesting discussion about the notion of Karen's work with data and how gateways in discussions of infrastructure arrangements are often missing, and how considering gateways as people brings in this whole PD perspective that people (and practices) are necessary. That is, even though we develop these technical infrastructures we cannot simply avoid people and gateways. This in turn relates to the political aspects of how do we increase participation. Aspects of data and especially gateways, are not only a missing element, they are blind spots. There's a lot not known about data in different environments e.g in healthcare or environmental arenas or educational venues). At the same time, in these different arenas, that's where PD really has something to offer.

Mette-Agger Eriksen, Christopher Frauenberger,  
Amanda Geppert, Sanna Marttila, Elena Parmiggiani

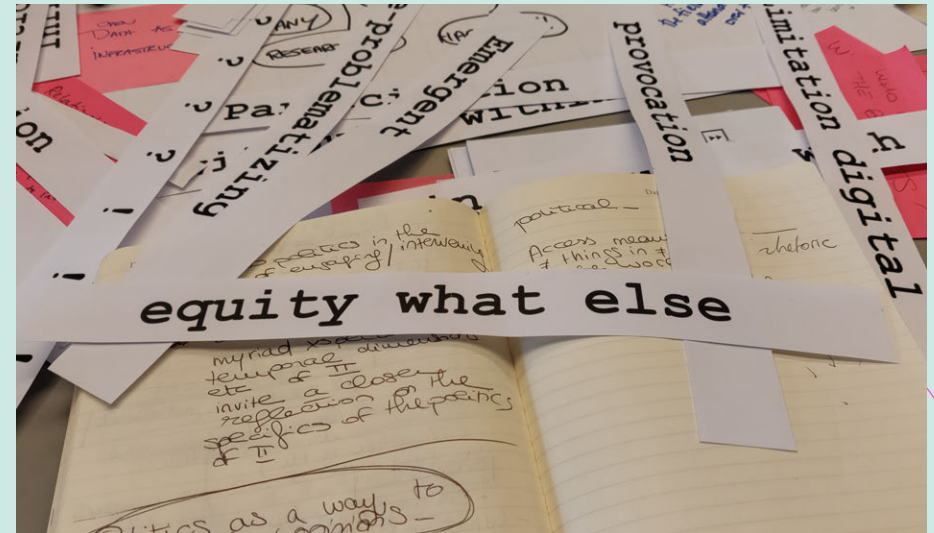
Mette-Agger Eriksen, Christopher Frauenberger,  
Amanda Geppert, Sanna Marttila, Elena Parmiggiani



The discussion was a productive reflection on the meaning of politics and infrastructuring. The themes and particularly the objects presented by the participants varied significantly. Christopher presented a picture from the so-called half-house project in Chile, where half houses were built by a famous architect to elicit reconstruction in the aftermath of an earthquake. Mette and Amanda subsequently presented images from collaborative workshop sessions. In the case of Mette, it was an image taken from a participatory workshop to discuss the future of libraries in Denmark, while Amanda showed a board from a project, including pictures of objects designed to remind young adults to use healthcare services to prevent sexually transmitted diseases. We debated the possibilities for situated interventions in the case of e.g. low-income areas and also the politics associated with race in particular in the USA.



Elena presented a web page, with an article describing a workshop where a Norwegian oil company presented an open data portal for environmental monitoring to a community of fishermen. This triggered a discussion on the broader meaning of politics on the global level. Finally, With Sanna's brochure from a hackathon event she has been organizing around cultural heritage, we looked at what are the tensions and dynamics of the becoming and making of an infrastructure and infrastructural change. Like the previous group we also had quite a lot of ontological troubles in our discussions to the point where we almost lost our subject. We came to the point of asking what is infrastructure? Is it really something, or is not everything infrastructure? Here it became a bit silly. We tried to go back and think what it is that we do when we say we're infrastructuring things. The best verb that described our activities was to say we reconfigure networks. This is the highest pillar in our board. it's important to say here that when we say we reconfigure things, that these things can be... of different kinds. We configure relationships between humans, we configure relationships between non-human actors and that's where more material infrastructure comes in; however infrastructure can be everything and nothing. By reconfiguring the relationships within networks we make different activities possible. Something is configured in a way that certain activities are more likely to happen than others. PD interventions aim to reconfigure these networks so that other activities not only become possible but also likely. On the board we have also other lower pillars labelled with topics. In one, we talked a little bit about counter-narrating or the narrating what we do, because part of the reconfiguring of networks could also be just changing the story about something. Even just changing the narrative about an infrastructure is an infrastructuring activity. Changing is an intervention. So what pieces or which actors do we connect and how do we build these relationships, or the network, to have a different, or offer a different opportunity space for activities. Another pillar is, what kind of learning is happening in these networks? In almost all cases we talked about learning as an important aspect of the participation. The creation of knowledge and the learning that leads up to that knowledge re-configures what is possible to do within a given socio-technical or



certain material network. Our group had cases of varying political urgency, some were very politicized, some were maybe less so, but it's also a case of when we reconfigure, how do we talk about, how do we motivate this reconfiguration? How do we justify that we want to reconfigure that situation? This always has something to do with political (agendas), with debates, with agonism, with struggle. And when we say we infrastructure, then we need to be transparent about how we motivate that change or reconfiguration. This was also rematerializing, sometimes that reconfiguration is not just a story or not just the people but it's also materials ordering the possible activities within the network. Sometimes it is the material thing that changes what is on offer. And lastly we thought of when and what? That is the seventh sticker on our board, a sort of meta-comment because it's halfway between everything. With the question "when does infrastructuring happen", we all agreed that it is actually all the time. One important aspect of infrastructuring is that it quite effectively blurs the boundary between design and use time. Because design time is time when you infrastructure. But when you've done with that infrastructuring, well, the participation in design extends into the use time.

## AGREEMENTS, LEARNING, SCALES OF INTERVENTION AND POWER (Group 4)

Alix Gerber, Helena Karasti, Giacomo Poderi, Anna Seravalli

We had three cases and one metaphor. One of the three cases, brought by Alix was dealing with policing, infrastructuring for changing the practices of the police and of policing. The second one on infrastructuring around research infrastructures in the environmental sciences was introduced by Helena. The third case was on infrastructures of waste handling presented by Anna. The metaphor was Giacomo's contribution, with the idea that the rhizome can be seen as a way to understand infrastructuring. For those who don't know what a rhizome is, it's how some plants operate: so you have a small thing that stays under the ground and grows a little bit randomly or emergently and sometimes it becomes a plant and sometimes it just dies. Out of those cases we started to discuss how the different ideas resonate. The cases were quite complex but we have identified three salient issues: agreements, learning and scales of intervention. The first salient point that we noticed in all these cases was the role of agreements or documents and the role of materialisations, a bit like group number three was talking about. Both in terms of being a key aspect of infrastructuring, as we have documents in these cases that somehow make things possible and also how materialisations can hinder some of the processes of infrastructure, so existing systems create tensions and frictions. We also talked about how these materialisations become a way - to take this metaphor of the rhizome - to describe something that emerges, so the whole pro-



cess becomes a little bit more visible. We talked also a lot about learning. We went back to Bateson's idea of levels of communication and learning. Star & Ruhleder (1996) uses Bateson's model. According to them, when building an infrastructure, you can encounter issues on three different levels. There is the 'practical' level which is related to things and processes, the 'context' where this practice is happening, and then you have the 'goals and values' which are behind these practices. We talked a lot about how in infrastructuring there is perhaps the need for dealing with different levels of learning but also to support learning about the existing levels. Perhaps the role of the designer and the researcher is to move among different assemblies and groups and try to make them aware of these different levels and complexity. We talked also in relation to this because it's also related to how much you work in strategic and interventionist ways. Infrastructures are emergent and we think that there is some kind of balance between emergent and established agencies. We also had seeds, as the first group does, appearing somewhere in this relation.

L A Y E R 3

(Re)problematizing politics,  
participation and infrastructuring

### LAYER 3: (RE)PROBLEMATIZING POLITICS, PARTICIPATION AND INFRASTRUCTURING

#### Participants:

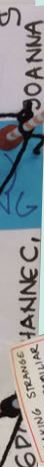
Hanne Cecilie Geirbo,  
Christine Hegel, Joanna Saad  
Sulonen, Laura Scheepmaker

This session started with a (re)problematization of politics and questioning its relation to the concepts used by the participants. An introduction was given by Elena Parmiggiani and Giacomo Poderi, motivated by the latter's observation that 'politics' and 'infrastructuring' were understood in different ways by different people. After their presentations, we continued with the group work. Each participant briefly but explicitly reflected on their take on politics, participation, and infrastructuring. Questions raised during the discussions, were, for example: Are politics in infrastructuring different from politics in PD? From politics of participation? How? The discussion and work with the artifact was aided by highlighting tape and a collection of printed keywords collected before-hand from the position papers and from our online discussions.

#### MAKING AGENDAS EXPLICIT, AND CAN THERE BE PD WITHOUT ETHICS? (Group 1)

We started the discussion generally on the politics of (PD) as related to democracy. Then we started to talk about the politics of our own involvement, which related to what we first articulated with the theme of intervention. We started to look at the power we have (as PD designers) in seeding and also in triggering things to happen. At some point we started saying that okay, usually we take it for granted that all of what we do is for good. We also somehow take for granted a certain leftist agenda of PD. Something we are not articulating really, we are not (explicitly) saying that this is what we base ourselves on. From there we started toying with the idea of far-right PD (as provocation). What if all this would be (mis-)used in other ways? At some point we questioned how does that relate to infrastructuring? We didn't really answer, other than some suggestion about politics and infrastructuring. However we did ask: Does infrastructuring add anything to the discussion of politics and design? We didn't really see how that was relevant. Nonetheless the issue of politics does add something to understanding infrastructuring.





Karen S. Baker, Andrea Botero, Cathrine Seidelin,  
Jesper Simonsen

Jesper also said that an infrastructuring approach in PD also implies emergence and therefore not knowing. How do you explain that? So he wants the message to be “you need PD”. When doing that, PD kind of should look cool, and that coolness implies we know it all. However, in reality, as PD researchers attuned to infrastructuring, we know that we don’t know. Part of the thing is that you have to be open to the process because you are doing it. So, you have to have this performative aspect to our board, where this note “we do not know” can be turned (by folding it) into “we know”. That is another dimension of the political work. Therefore we end up proposing the importance of learning when articulating the work of participation and politics in relationship to infrastructuring.

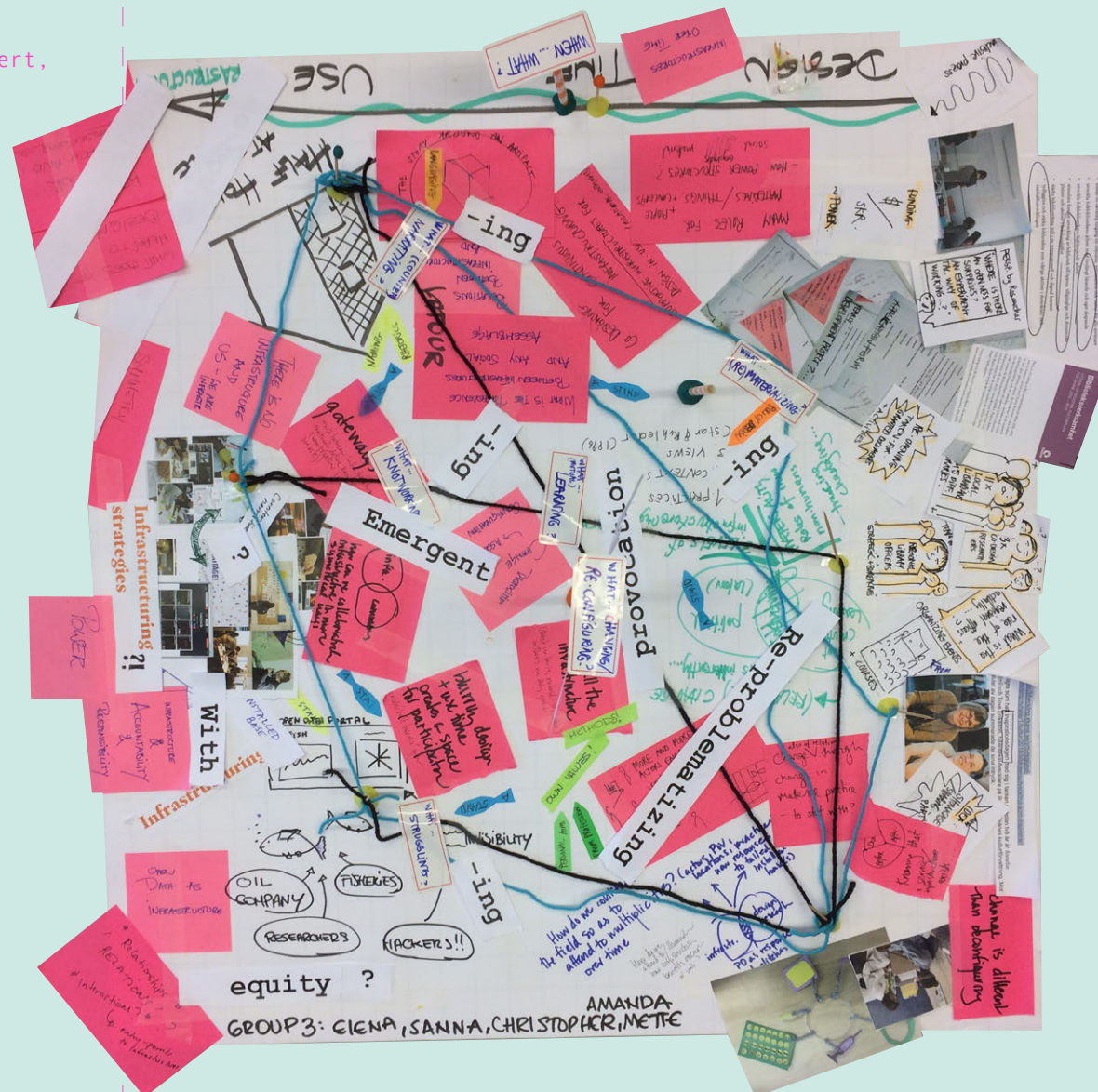




## WHY? TAKE A STAND! (Group 3)

Mette-Agger Eriksen, Christopher Frauenberger, Amanda Geppert, Sanna Martilla, Elena Parmiggiani

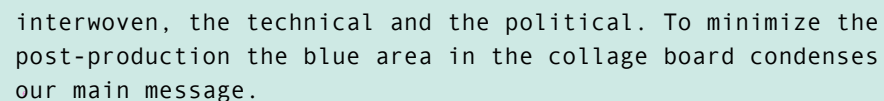
We concluded with a political statement, that infrastructuring is inherently political. This led also to the why, as a core question in our collage. We discussed quite a lot about our role as researchers in these kinds of processes. What methods do we apply and how to understand what actually it is that we are doing? How it is related to our own values? Because of course there are a lot of values, underlying the choice of method or approach of engaging. Where does that come from and are you actually aware of that? If you take a stand, which we all were doing as actors in these infrastructuring processes, what was that stance based upon? In Mette's experience with engagements and in line with the examples we had; she argued that this is based upon quite a lot from the professional training someone has. The educational background. One of us gave the example of still having to go and speak to technology people who say "well, we did this system but what happens to it, what it does, it's not my responsibility". There is often a distancing of responsibility of what we put in the world. Mette reflected that in her training as an industrial designer, there were a lot of related value systems but with this idea that it's not political. That was never discussed in her education really. Being aware that you are taking a stand when you are engaging with infrastructuring seems important. We also recognized this element of activism, that we politically do things. We added a few keywords to the topics we had been formulating already, for example to the aspect of narrating. If re-narrating is a big part of what's happening in infrastructuring, other phrases of languaging and naming and rhetorics are surely an issue, and a part of what this process is about. We added also new areas, a bit about the levels needed for debating those worldviews which are underlying actions, and then this overlapping also with needing to address policy



making issues or different levels of infrastructures. Of course we had divergence, whether it is the idea of infrastructuring that is good or whether it is the idea of participation or whether it is equality or something else. Of course that is political too.

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Infrastructure may be involves more distributed agencies and more people being impacted and being able to define their own roles (in the) infrastructure over time. Whereas a defined project is kind of like, these are the people who are working together. Politics are about problematising the choices that we have, and bringing up that there are other options. That is also a scary process, therefore we talked about how we make people comfortable having those discussions. We also realised that among a lot of the different projects that we were talking about, we'd seen this tactic of using technicality and applying technical roles as a way to get out of having political discussions. (Facilitator: Can you give an example?) In the case of Alix's work with policing in Ferguson, a lot of the people who are involved in reimagining policing - the residents - are thinking about what are we supposed to do, how does policing work so that they can just apply that technical rule rather than having the political discussion of how do they want it to work. We were talking about how those things are



# LAYER 4

Uncharted territories:  
some research paths



## LAYER 4: UNCHARTED TERRITORIES: SOME RESEARCH PATHS

### Participants:

Hanne Cecilie Geribo, Joanna  
Saad Sulonen, Christine  
Hegel, Laura Scheepmaker

For the last layer, each group maps a few research paths to pursue at the intersection of participatory design, infrastructuring and politics. To build this last layer, the groups used their previous discussion and a reference list that we collectively gathered working online before the workshop. This activity is important to help us continue understanding better the relationship between politics, participation, design, and infrastructuring. What new questions arise for our own projects, and for infrastructuring in participatory design in general after the workshop?

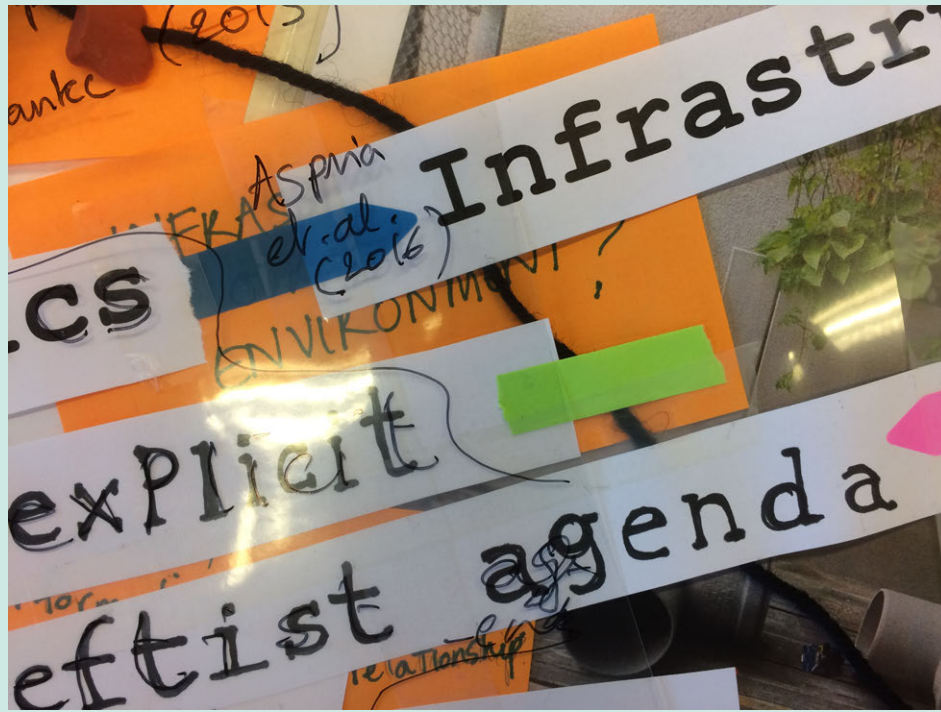
### POLITICAL AGENDAS, REFLEXIVITY AND ETHICS (Group 1)

In our group we were talking about this issue of the need to be **explicit about political agendas when talking about infrastructuring**. When PD emerged in Scandinavia through collaborations between researchers, designers and trade unions, increasing democracy in the workplace was the goal put upfront. One of the founders of PD, Kristen Nygaard, was also active in Norwegian politics. That political core of early PD might have driven the whole field to the left-side of the political spectrum. There have been calls for reviving PD's political agenda<sup>7</sup> however to our knowledge, there are no reflections on the leftist agenda of PD - it seems to not be explicitly articulated. We therefore proposed that we need to address this gap: to better articulate PD's original and existing political agenda as well as consider what it would mean if PD was used within contexts fostering other agendas (including ones at the extreme right of the political spectrum). Moreover, there is a need for more work on **reflexivity in PD**<sup>8</sup> with respect to our collective and also individual political agendas. That is also crucial when infrastructuring. We also found an emerging discussion addressing the ethics of PD practice. We feel this is an interesting area for further reflection, especially in articulating ethical issues with respect to politics and infrastructuring.

<sup>7</sup>See for example: Beck, E. (2002) "P for Political: Participation is Not Enough," Scandinavian Journal of Information Systems: Vol. 14 : Iss. 1 , Article 1. Available at: <https://aisel.aisnet.org/sjis/vol14/iss1/1>

<sup>8</sup>See for example: Piikala, S Karasti H (2016) Reflexive Engagement: Enacting Reflexivity in Design and for 'Participation in Plural', Proceedings of the 14th Participatory Design Conference: Full Papers - Volume 1, p. 21-30





## DATA AND DESIGN, INVISIBLE WORK AND ALTERNATIVE DISSEMINATION STRATEGIES (Group 2)

Karen S. Baker, Andrea Botero, Cathrine Seidelin, Jesper Simonsen

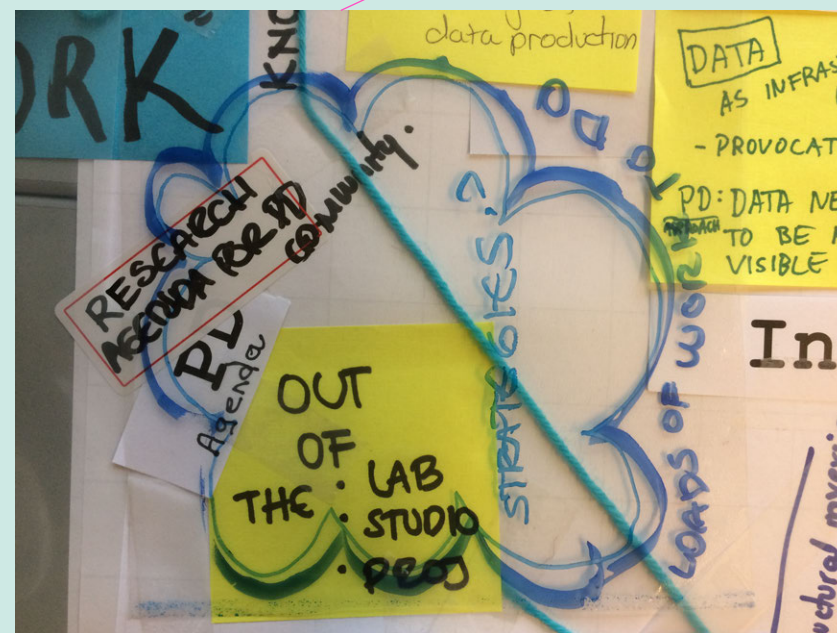
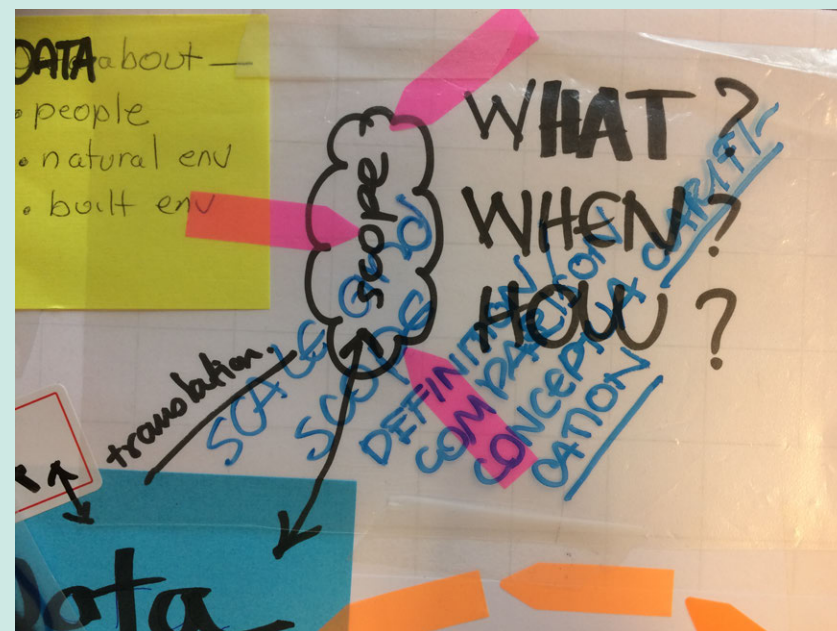
In our group we concluded with three broad areas where research or action are needed:

First, when we talked about **data**, we labeled it as “missing territory” indicating that we need to explore aspects of the **interplay between data and design** and how that is embedded within infrastructuring processes. At the moment we do not know much about it. For example there is a good starting point in the article “Do categories have politics” by Lucy Suchman<sup>9</sup>. However after that not much has been produced or said.

Second, we talked about the need to continue looking at **invisible work** and to some extent **communication needs** as there is still a lot of work to do in that area to advance PD infrastructuring processes and to grapple with politics. That was evident from the kinds of work we were all presenting.

The last theme is more general: the ambition to **reach audiences in alternative ways beyond traditional publications**. We mean how we get out to a broader audience especially beyond our own communities with research knowledge? How do we convey insights we already have about PD and infrastructuring? Publications include a variety of obstacles for PD including their focus on very short-term activities. Combining publications with other types of communications would be a difficult ‘turn’ but could open up options. Considering that scientific publications might not always be the most efficient way to share or exchange ideas, there is a lot of work to do in reaching wider audiences.

<sup>9</sup> See: Suchman, L. (1993). Do categories have politics? Computer Supported Cooperative Work (CSCW), 2(3), 177-190. <https://doi.org/10.1007/BF00749015>





## LONG TERM STUDIES, FRAMING, ACTIVISM AND PD LOOK INTO INFRASTRUCTURING (Group 3)

Mette-Agger Eriksen, Christopher Frauenberger, Amanda Geppert, Sanna Marttila, Elena Parmiggiani

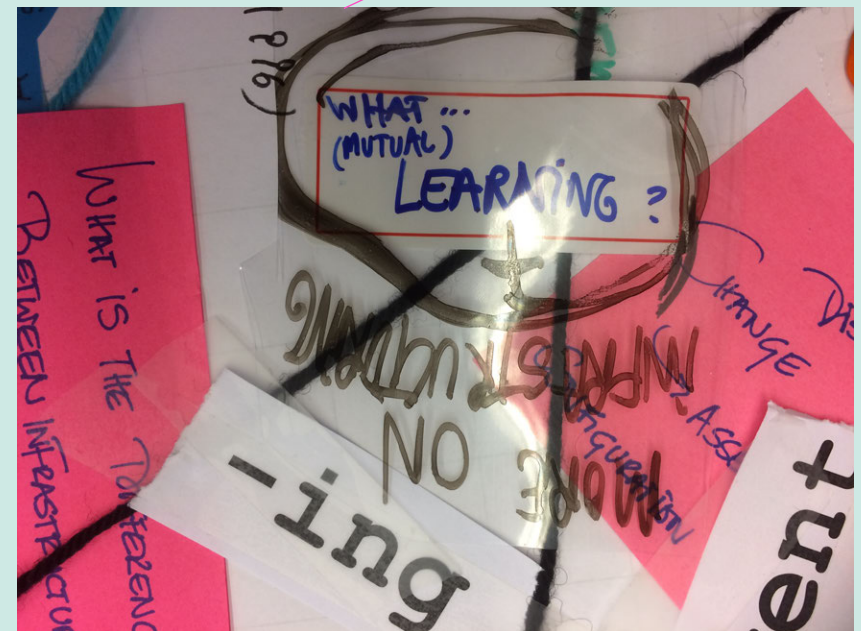
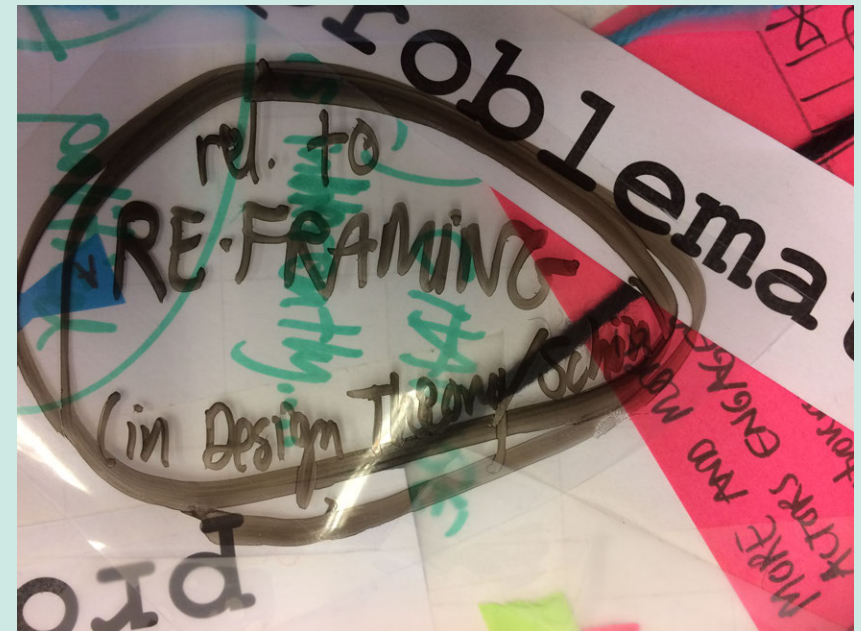
During our conversation we thought about four different aspects:

First we identified the need to have and look at more **long term cases and temporality in infrastructuring**. What does temporality in infrastructuring mean? How do we understand that? Even methodologically, what threads do you pull on to construct that field?

Secondly we talked very much about reconfiguring. We propose we need better understanding of how do we **reframe and reconfigure** engagements. What does it mean to re-reframe something? What are the implications of that? How does it change design practice? (Similar to Group 4). Framing and reframing is a lot like 'and what's the problem? And this is a core topic and an important phase in design (i.e. what is the design problem?) How does framing overlap with reconfiguring practice and infrastructuring? This way we could be open to overlaps with more ideas from design practice.

The third area, in terms of opportunities and challenges, we found was the need to understand better **the role of PD practitioners as activists**. How we bring our own values and methods to this also signal infrastructuring processes. What does it mean if we are in conversation with different professions and logics, and how do we think about that?

The last one is about **revisiting the notion of infrastructuring from PD**, as opposed to thinking about it from within something like the STS tradition. There is something to revisit there because it can be an occasion for trying to give an understanding and reflect on the meaning of the terms. Sometimes we felt as if we are talking about different things.



## CHANGES IN DESIGN, CREATIVE AND CRITICAL THINKING

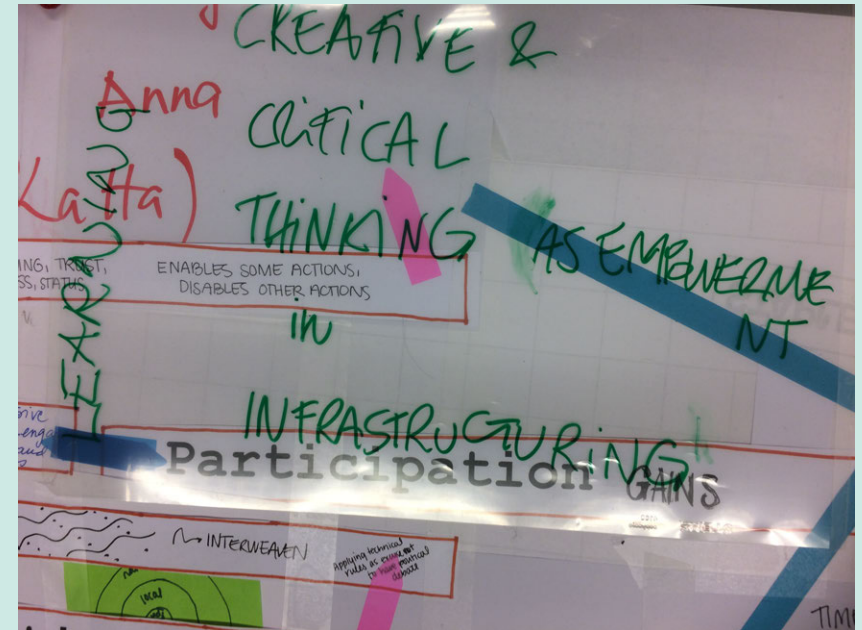
### (Group 4)

Alix Gerber, Helena Karasti, Giacomo Poderi, Anna Seravalli

In our group we discussed two important research paths for the future:

The first path is in the shape of a question: How does infrastructuring changes design and designers' practices? This question has a double edge. On one hand, it refers to an opportunity to revalue how things/concepts, such as infrastructuring, can potentially provide a different way to teach design and to practice design. It would be really valuable to have an understanding of how infrastructuring has already changed or is changing, for example, the notion and tradition of the design studio. On the other hand, it also referred to the need to continue looking at the ways PD has been appropriating (but also maybe mis-appropriating) the concept of infrastructuring. Not all of us had clarity on the paths by which infrastructuring arrived and evolved with in PD.

The second path that we think is worth exploring centers on the theme of learning, to which we kept coming back to from different kinds of angles during the day. We crystallized this learning challenge with these words: creative and critical thinking as empowerment in infrastructuring.





## RELATED LITERATURE

The publications collected here deal with the concept of infrastructure and infrastructuring- Some directly address concerns related to participatory design, while others are framed by the traditions of Anthropology, Information Systems (IS) or the multidisciplinary fields of science and technology studies (STS) and computer supported collaborative work (CSCW). The variety of approaches and cross pollination with the literatures is an interesting phenomena in itself.

This collection has been documented collectively by participants of the workshops at PDC2018 and at a similar workshop we organized at the EASST2018 conference <sup>10</sup>.

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