Building Half-Houses

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The argument for participation of stakeholders in design is functional as much as political and moral. It revolves around building better technologies or services, empowering participants as well as democratising the shaping of future alternatives. Participation, however, is inherently local and situated and a common criticism is that it refuses to be easily transferred between contexts, let alone be generalised. In essence, PD does not scale well. When aiming to convince industry to adopt more participatory practices, the prospect of engaging every user or customer in a design dialogue quickly becomes a repellent. Working with the few when designing for the many brings problems of representation and generalisation. It also systemically undermines the empowerment agenda. One potential solution lies in making the process the product (a potential reason for why so much focus in PD is directed towards methods, see [2]), in the hope that they would proliferate. However, for many stakeholders, in particular businesses, this is at least unusual or not viable.

Another approach is to blur the boundaries between design and use time with the aim to extend the co-designing of artefacts beyond the time and place of the design studio [3]. This requires not only that we build opportunity spaces for design-in-use into our designs, but also that we infrastructure them so that people are empowered to explore them. As such, our designs become boundary objects that are

weakly structured in common use (e.g. on the shelf), but afford the possibility to be strongly structured in local and situated use [4]. For these transitions to be made possible, these boundary objects need to be embedded in an infrastructure that may include access to material and skills, but also a possibility to re-frame the narrative of the boundary object, i.e. the story that is being told about it [5].

When a region in southern Chile was hit by an earthquake and a tsunami, architect Alejandro Aravena and his company Elementary re-imagined social housing and started to build **half-houses**[1]. There are many complex economical agendas at work in this example, but what is interesting from a design point of view is that the product provided an opportunity space for design to the residents long after the construction companies and architects were physically present. However, it might be argued that the residents and the designers engaged in a co-design game in use through the boundary object of a half-house. Evidently, just building half a house is not enough. Such co-design games in use require infrastructuring, e.g. access to building materials, knowledge and skills as well as narratives of the community. These are likely emergent properties of living in a half-house within the ecosystem of a community, rather than a fixed and stable set of support actions. This reflects the strong temporal aspect of available infrastructure that opens and closes windows of opportunities as well as shifts the end goals of the situated design. In many cases, the open half of the house was slowly "lived into", appropriated and built. In this, Alejandro Aravena took inspiration from South American slums and the apparent resourcefulness of people in actively shaping their habitat.

In this workshop we hope to explore in more detail how examples such as the half-house can improve our understanding of how to infrastructure design and when. Several concepts have been discussed to facilitate infrastructuring, including components, patterns, ontology or ecology [1]. We argue that digital technologies offer additional dimensions: a primary narrative of Artificial Intelligence and Deep Learning, for example, is that they make objects smart to solve problems in better ways. But object smartness could also be an opportunity space for co-design in use. What if a technological artefact is smart enough to become something else, something that the user negotiated with the intent of the designer?

In our own work[2], we are concerned about exploring roles for interactive technologies to scaffold social play between children with diverse abilities. Applying the above thinking to this problem space has proven to be very productive in pointing us towards what we should be designing. The interpretation of what constitutes successful play differs between children and good playthings provide a flexibility to accommodate this. However, to scaffold social play, good playthings also need to provide structure that draws children together. As such, we consider our playthings boundary objects that are weakly structured in common use, but afford strong structure in local use. Questions then arise about how to infrastructure the shifts in structuring and how open the opportunity spaces for them to be co-designed in use — how to build half-houses of play.

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