

# STEPPING STONES ACROSS THE GAP

## EXPLORATIONS IN THE GENERATIVE DESIGN SPACE

Reprinted from Halse, J., Brandt, E., Clark, B. and Binder, T. (Eds.) Rehearsing the Future, The Danish Design School Press, 2010.

See <http://chokobar.wordpress.com/> for more information about the book.

This essay looks at the front end of the design process as a generative design space. It describes the emergence of the generative design space and the patterns we see as we explore ways to place stepping stones between research and design. This is the space that we have been exploring in the DAIM project.

A major change in the design landscape has been the growth of and interest in the fuzzy front end (fig.1) of the design and development process. This is the domain where efforts are focused on understanding the current context of experience in order to identify and describe opportunities for future experience. In the front end we aim to figure out what is the right thing to design. We explore what will be useful, usable and desirable for people in the future.

### Changes in the design landscape

With the increasing focus on the front end comes a growing preoccupation with innovation. This means that many more people want to have a voice (and a hand) in the front end of the process. So it may not be a design team at work, but a mix of people with different areas of expertise including business, marketing, engineering, manufacturing, and other areas.

The design landscape today is characterized by conflict and confusion, evident in a growing realization that anticipation of the needs and dreams of people is necessary but at the same time very difficult to do. We see turf battles between designers and researchers as designers try to conduct their own research and researchers struggle to do work relevant to design. With more and more disciplines becoming involved in the front end of the process, there is discontent between disciplines at multiple borders.

On the other hand, the current state of the design landscape is also characterized by positive energy and collaboration. In online conversations, as well as

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in publications, we see a vivid debate concerned with issues such as:

- user-centeredness,
- the importance of context, including contexts of use and contexts of future use,
- the emphasis on experience and not just on the object of design,
- the implications of new technology, and
- a blurring of the traditional design disciplines.

The interest in the front end from the business community and the growth of online forms of communication and networking have been instrumental in facilitating this conversation. Designers, researchers and others are sharing ideas, discussing issues and challenges, offering helpful suggestions and answering each others’ questions in real time. For students exploring the new landscapes of design, the online network of front end practitioners and educators is a very good place to belong.

**The gap**

Designers are well aware that there is a gap between the designer and the user. They are designing for others, but they cannot know what the “user” would say or do. Applied social scientists and other types of researchers have come into the picture to provide information and insight about people. They serve as the representative or advocate for the “user”. This has helped to narrow the gap to some extent. For example, ethnography has been recognized as providing knowledge about people,

context and experience that can be useful in the design process.

But with the entry of the researchers into the design landscape, there is now even more talk about the gap between design and research (or between designers and researchers). The gap is often the source of conflict, misunderstandings and lack of respect. The gap is due to differences in:

- skill sets between disciplines or areas of expertise,
- specialized languages,
- boundaries, edges and domains of the unique disciplines, and
- mindsets and egos of the people involved.

In part, the gap is caused by the differences in education and mindset between people trained as designers and people trained to be researchers. And the gap is reinforced by the tendency of companies to house researchers and designers in different organizational divisions. And as front end design and innovation teams become even more interdisciplinary, mini-gaps between people across different disciplines emerge. The gaps are, in large part, symptoms of the expert mindset that each discipline imparts to its constituents. People feel the need to defend their expertise since they may be misunderstood or not even listened to in cross-disciplinary settings.

But who are the real experts when we talk about designing and innovating for future experience? It is the people we are attempting to serve through the design

FIGURE 1  
The Fuzzy Front End



FIGURE 2

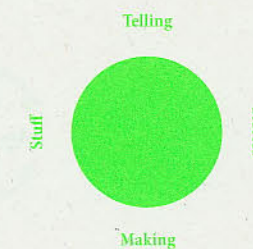
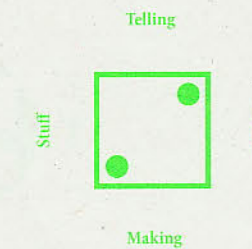


FIGURE 3



process. With this shift in mindset, we can invite future “users” into the front end of the design process and move toward designing *with* them, not just for them. A participatory mindset can break down the disciplinary and/or cultural boundaries. Add to that the tools that can put everyone on the same playing field and support a shared language, and you have a generative design space with tools for front end exploration.

**The generative design space**

I start with a very simple model of the generative design space where people-driven innovation can occur. The sphere shown in Figure 2 represents this space where people (all kinds of people) can engage in making things and telling stories about possible futures.

When you view this space from different perspectives, you get different meanings. Looking across the space from left to right or from right to left, you see the end result of the design and research process. From the left you see that design is about “stuff” where stuff can refer to objects, devices, products, spaces, vehicles, buildings, etc. From the right you see that design can also be about “stories” where stories might refer to interactions, services, experiences, transformative events, etc. Looking at the space from top to bottom or from bottom to top, you see activities. Looking up from the bottom reveals “making” which can be embodied in sketches, drawings, prototypes and/or models. Looking down from the top reveals “telling” which can be embodied

in action plans, scenarios and strategies. The generative design space is open to all people who care about their current and future experience.

The cube in Figure 3 represents the traditional design space. The traditional position on design is represented by the dot in the *making stuff* corner. The education of designers has been and continues to be focused on learning how to make amazing stuff. In fact, the traditional fields of design education are characterized by the type of stuff that designers learn to make (e.g., product design, interior space design, graphic design, architecture, etc.). The education of designers (in all the fields except architecture) has more recently moved from a preoccupation with the making of stuff for people in the context of their lives.

The researcher’s perspective can be represented in the traditional design space by the dot in the upper right corner. This position is about *telling stories*, i.e., stories about how people live and how they wish they could live in the future. Stories can provide a context for the imagination. Stories are very powerful and you do not have to be trained as a designer to make and tell stories about the future. Everyone can make and tell stories. We see the use of stories in the recent trend toward using personas and future scenarios in the design development process. This activity can be applied in traditional ways or with a participatory mindset. For example, designers can make up these stories and use them to inspire

their designing of stuff. Or the stories can come directly from the people who will be served through design. This is a people-driven approach to innovation. The coming together of designers and researchers is revealing new domains of designing. We now hear talk about design for interacting, design for serving, design for experiencing and design for transforming. These new fields of design are defined by design intent rather than by the end-product of the process and they use various forms of story as the primary design framework. The new tools and methods that are beginning to emerge as a result of this interaction are represented by the growing number of dots emerging from the corners and seen in Figure 4..

What happens when we look beyond the traditional design space and invite everyday people (who may be the future users) into the generative design space? We can give generative design tools to them so they can make their own prototypes and tell stories about their own futures. The generative tools will enable them to not only to tell stories about their futures but also to make stuff that reveals their dreams and aspirations.

We have had the opportunity to experiment with and to explore the new tools and techniques at the intersections of making stuff and telling stories in the DAIM project. For example, in the [Fieldshop, page 200](#), these intersections were explored in a time-compressed way through co-creating with everyday people about services and technologies that do not yet exist. Before the session

FIGURE 4



FIGURE 5



began, participants were immersed in remembering and thinking about their own stories in order to stimulate their innate telling/making abilities. An iterative loop of fieldwork-workshop-prototyping then took place in one afternoon in the participants' living environments.

When we invite everyday people into the generative design space, we see more and more dots appear as seen in Figure 5. These are the stepping stones in the generative design space. When we have located many stepping stones, we will be able to bridge the gap. As the gap is connected, designing in the front end will change. The shape and the size of the generative design space will change. There will be many different points of entry and an unlimited number of pathways in the generative design space of the future.

#### What is next?

But today we still have the gap between research and design. We need to invite all kinds of people into the front end of the design process to continually iterate between the making of stuff and the telling of stories. To do this we will need to create new generative design tools and methods because everyday people are not trained in the use of the traditional design tools and methods. We will also need to create new generative design tools and methods for the designers so that their thinking, making and telling is not biased by the tools they have grown up with. We need to explore tools and methods for:

- making and telling new kinds of stories,
- telling about and sharing ideas about future stuff,
- putting the stuff that people make back inside their future stories (through various forms of intervention), and
- using people's stories about their futures to evoke (as a form of inspiration) the making of stuff.

As we explore the generative design space through intervention and inspiration, we will see the emergence of new practices for design and design research. The making and telling of stories as a way of designing makes possible co-creation between designers and non-designers in the front end of the design process. Eventually we will see the consequences and the rewards of providing a stage and giving generative prototyping tools to all the people who want to play a role in rehearsing their futures. And in the even longer-term future, we may see that the designers and researchers will create new tools and methods for themselves based on what happens when we put the new generative tools in the hand of the real experts of experience. ■

#### Note

The making/telling framework emerged from conversations with Mercè Graell-Colas regarding her thesis: Exploring Visual Means for Communication And Collaboration in Multidisciplinary Teams. MA Thesis in Design, The Ohio State University, 2009.