

DESIGN PRESENTS RESEARCH: THE RELATIONS BETWEEN RESEARCH INTENTION AND DESIGN OUTCOME

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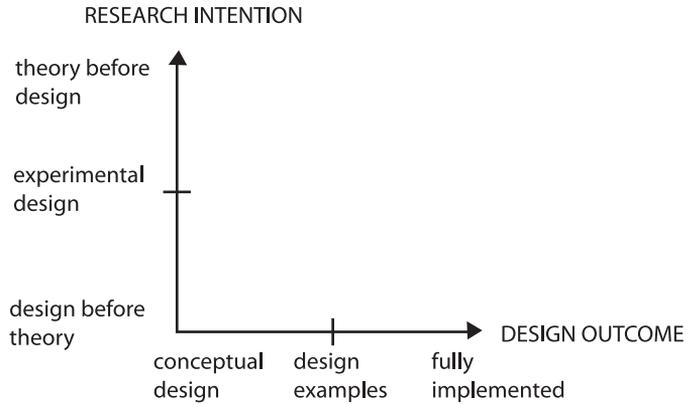
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Authors of PhD theses concerning (interaction) design have carried out different forms of design work with different research intentions. One of these authors, Gislén, gives her view of design as research in her thesis: that it is a matter of approach rather than the course of action or procedure in the design process (Gislén, 2003:246). Starting out from that in a way, I tried to see what this approach could look like. Below, I compare how different authors of PhD theses have presented their design work in relation to their research work. I try to show that the approach can be different and give examples of what the difference could imply in terms like argumentation, evaluation and communication.

CATEGORISING

I have positioned the design work of three dissertations and one design-research project in a diagram (see next page). My attempt with the categorisation has been to create a basis for discussions about whether the kind of design work carried out matters for the research process and outcome.

The x-axis in this diagram is design outcome and the y-axis is research intention with the design work.

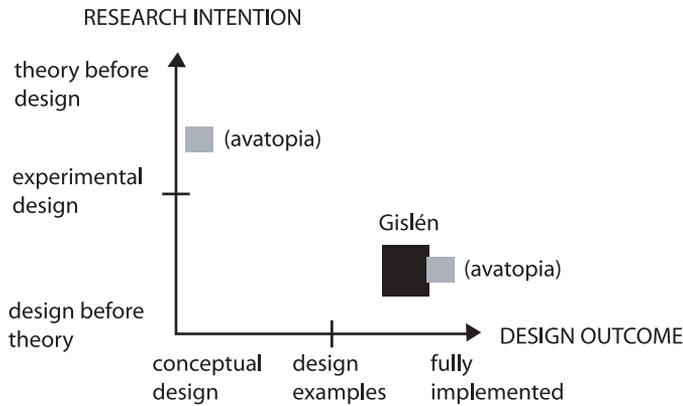


The scale of design outcome goes from pure *conceptual design proposals* that don't exist physically; they exist only as sketches in words or drawings. And the scale ends in *fully implemented full scale design pieces*, close to what people tend to call a product. In between there are more developed sketches and *design examples*.

The scale of research intention starts with design work that has been carried out more (than less) without any specifically formulated research intention with just that design work. The research intention exists for the maker but can be more formulated in terms of exploring an interest area or phenomenon. The researcher relies on that she will learn something from the design process and/or the design outcome and that something will come out of an analysis afterwards; a theory could be an outcome. Therefore I call this part of the scale *design before theory*. In the other end of this scale I think of examples where the researcher has a well developed theory in mind and wants to explore specific things by doing the design work; *theory before design*. In the middle I see work that is experimental where the aim is to develop theory and design at the same time. Another way to present the scale is to say that it starts with more problem solving design and ends in pure investigations, while in between there is an attempt to create and find things not by only putting theories into action or by pure problem solving.

GISLÉN

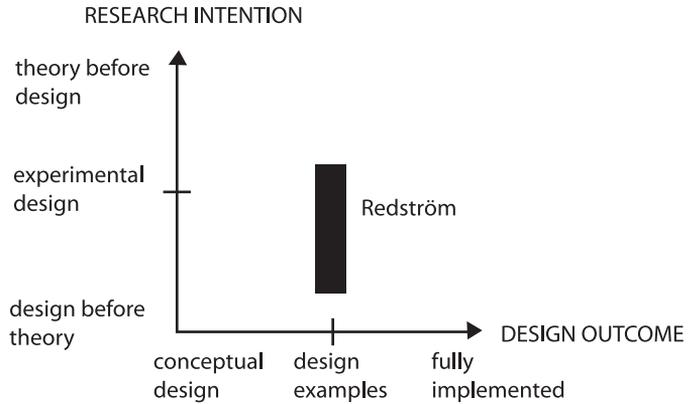
I have positioned Gislén's design work presented in her thesis *Rum för handling* in the lower right area in the diagram. As I see it, her *design projects* gave her experiences that lead to the theory she presents in her thesis, but they also worked as investigations and explorations about some aspects about collaborative narratives that is related to the theory. She doesn't really develop any theory at the same time as her design. I find it presumable they both give her ideas and hints about each



other but I don't see that as her research intention while designing. Therefore I put her lower than *experimental design* but not fully in *design before theory*. The projects are implemented to the degree that the narratives can be tested with the result that they are quite close to *fully implemented*.

The project Avatopia, however, is an exception and a little bit harder to position. It is her last design project in the dissertation, and compared with the others I think it starts with a more developed theory and a greater awareness and wish to develop a theory by doing the design work. But that is only one part of the project, a part that stayed on a conceptual level and was never implemented. (I'm thinking of the idea of collaborative narratives as a way to encourage and support reconsiderations of valuations). Therefore I positioned the Avatopia project at two different locations. One part was implemented, even to a greater degree than her other projects, but that part is not as much of an investigation or instantiation of her theory as the part that remained on the conceptual level. Perhaps one could say that the lower right position for the Avatopia project contains things more relevant for the design projects realisation due to the other participants and partners in that project, rather than something related to her personal research and theory.

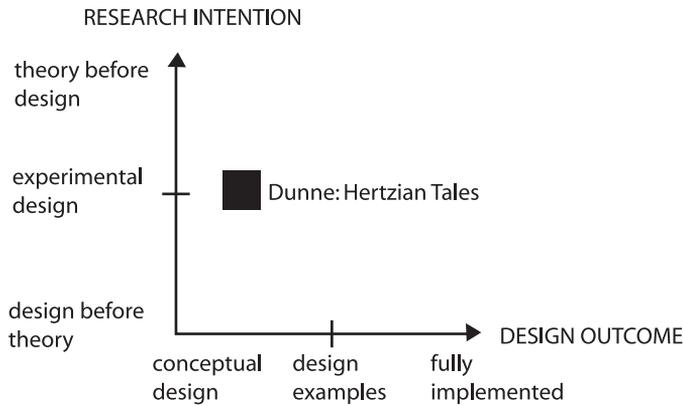
I find the upper left position quite interesting. Is it possible to develop a theory by just doing conceptual design or do you have to implement and give an idea a concrete form? This question is for design work positioned among *experimental design*. If you go further up towards *theory before design* the question would concern whether it is possible to investigate a theory by just doing conceptual sketches. In Gislén's case the *scenarios*, where these unimplemented thoughts were designed and therefore sort of investigated, probably gave more answers to her speculations and more experience to formulate the main claim in the thesis than the implemented part did. But I find it very easy to imagine that if it would have been implemented, it could have been of greater importance for her main claim. I wonder if there exist



cases where an implementation wouldn't contribute with anything for the research. Perhaps that could be true in cases where developing an idea is the research itself; when it's about finding new ideas and thoughts and try them out by designing them as conceptual ideas, not by instantiating them physically. A concrete form could in cases like that perhaps communicate the idea better but it could also impair the communication since people could shift focus more easily from the topic of investigation to questions regarding form (like physical form or interaction form).

REDSTRÖM

Redström's *design examples* are positioned just as design examples in the diagram. They are implemented but only to a degree so they certainly cannot taken for real products for everyday use. His research intention in the big picture is to formulate a design program, carry it out and instantiate it, reflect and reformulate the design program (Redström, 2001:26). But it is first in project number 3 (of 6) you get a hint of this intention in the design work, and it is done properly first in the next project (number 4, Informative Art), and in the following ones. Therefore I think that it is only project 4–6 that can fit under *experimental design*, in the upper part of the rectangle. The other design examples are closer to *design before research* and done more with a research interest to explore some fields he is interested in by designing things for them. He says himself about the two first examples: »... they represent our first endeavours into areas such as ubiquitous computing and tangible interfaces ...« (Redström, 2001:28). This is probably something that could be a common thing among dissertations, that the earlier works in a dissertation see how the land lies without a research intention connected to theories, followed by design work that is more combined with analysis and development, or investigations, of theories. Perhaps this could even be described by a thesis author as a chosen

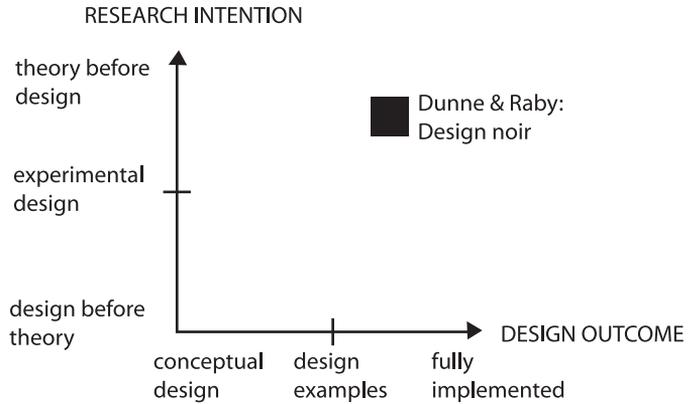


method. (I will come back to this further on under the heading Design presents research.)

DUNNE

Dunne’s thesis *Hertzian Tales* consists of six *essay* chapters and one chapter with five *conceptual design proposals*, as he puts it. He says that the conceptual design proposals »are not necessarily illustrations of the ideas discussed in earlier chapters, nor are the earlier chapters an explanation of these proposals. They evolved simultaneously and are part of the same design process« (Dunne, 1999:15). He doesn’t say anything further about the connection between the design process and the development of the theories, except that the design proposals are »by-products of an investigation into a synthesis between practice and theory, where neither practice nor theory leads« (Dunne, 1999:14). Therefore my assumption is that while he was designing, some questions and above all *wishes* came up that he took under consideration and which led him to a certain interest in the literature he was reading. And the other way round; his design work got inspired by thoughts that emerged while reading.

Thus I put Dunne’s design work among *experimental design* (though it is not articulated by himself) and between *conceptual design* and *design examples* on the design outcome axis. His *proposals* are physical, instantiated by images, video or objects, but still they are done with a strong wish to be as conceptual as possible. He stresses that the proposals are not intended even for prototyping, but for mass-consumption through publication and exhibition (Dunne, 1999:92). Therefore I position them quite far to the left on the design axis. He likes to compare them with books and novels, things that can stimulate discussion rather than be tested or worn.



I think his design work can be looked upon from two perspectives, one as an investigation, and for that aim their physical representation doesn't contribute with much, they could just as well have stayed on a pure conceptual level. But the other perspective is as communication tools where the representation of the idea matters in a much higher degree. The question is if the latter affects the research at all. If we compare his position with Gislén's position for the conceptual part of the Avatopia project, I think his position to the right implies that he can communicate his ideas better, by exhibitions etc. If one wants to get more out of the design work for the research process, and not only to disseminate the research, I think one has to go the whole way into *design examples*.

DUNNE & RABY

If Dunne compares the design he refers to as *proposals* in *Hertzian Tales* with books and novels, he and Raby have taken a step further in *Design Noir*. They talk about *conceptual products* and say that a Noir product »is very different from conceptual design, which uses design proposals as a medium for exploring what these products might be like. Conceptual design can exist comfortably in book or video form, it is about life whereas conceptual products are part of life.« The aim with products instead of proposals is to turn the user »to a protagonist and co-producer of narrative experience rather than a passive consumer of a product's meaning« (Dunne and Raby, 2001:46). Therefore they have to do prototypes of the products and let people live with them for some weeks (adopt them). And they have another intention with these products than Dunne had with his proposals. He wanted to start a reflection and discussion, they want to see what happens if people dwell with these products. But there is also a difference in the *research* intention with the design work, not the same thing. He wanted to explore new and different values by *doing*

them while they to a greater extent already have a theory that they instantiate with the design products. And they also use the products as a way of investigating their theory in a greater degree than Dunne did in *Hertzian Tales*.

Hence this combination of research intention together with their other interest implies that the position in the diagram has to move up and right, towards more implemented concepts. But there is a reason why they don't go all the way right to more product-like implementations: »They are products for the mind. Their generic form raises issues about the use of form in conceptual design. If they are too realistic – that is, if they look as if they really should be used—objects like these can quickly become ridiculous. Their abstract form signals that they are intended to be used in the imagination« (Dunne and Raby, 2001:64).

DESIGN PRESENTS RESEARCH

In Gislén's definition of research, knowledge that can be passed on to others is of certain importance. When she discusses whether this knowledge has to be in written form she says that at least one of her design projects contains knowledge in itself (Gislén, 2003:69). She describes her projects as an *investigation* and at the same time as *proposals* about how collaborative narratives in digital media could be done (Gislén, 2003:131). Redström and Dunne describe their design work as *arguments* in a material form and it is quite easy to imagine that Gislén also could say that her project, that contains knowledge in itself, is an argument. But I think there is a difference since Redström's point is that the »design examples are created to support critical reflection upon the design of computational things /.../ in this sense, the design examples are integral parts of the arguments made« (Redström, 2001:36). You could perhaps say that Gislén is less critical in her design work arguments. If you are doing design as research, is it important that your design can speak for itself, as arguments? If they do, how should they argue? I don't find it necessary that they can speak for themselves, but, if they attempt to argue themselves, I think they should claim what they claim better than text would have done. Otherwise they could be too contrived and therefore too easy to turn down. Gislén perhaps succeeds in one of her projects and Redström in some of his (the later ones), but in this case, I think Dunne and Dunne and Raby manage to do this better in all of their examples. By imagining the use of or using their design pieces, their design work can lead the way for their intention, the intention to trigger people to transform their perception and consciousness of their relation to their environment (Dunne, 1999: 106). With that intention (which doesn't have to be the same as their research

intention with the design work, though) their pieces have to be able to stand up for themselves, arguing.

I find that one could divide design work in two categories, one where the work is an argument for the research topic itself and one where it isn't. In the second case the design work itself is only an investigation and/or an example. I do not think that one category is more research than the other, but I assume that they can be used as research to a greater or lesser extent within different design traditions. For example, in textile design, design work that is arguing itself would probably be less frequent than in newer areas like interaction design where the design tradition is newer and therefore weaker. Perhaps I make this assumption thinking that in newer and weaker design traditions it could be easier to break the tradition and claim more controversial things. But it could also be on the contrary, that the weaker tradition leads to an unnecessary idea that doing arguing design work is a way to justify that the design is research.

I think that the foundation for projects could be one reason for different research intentions with the design. Design work for example that is near or among *design before theory* is more common when people work in projects together with other people and as an assignment towards an external funding provider. The design work has to be done and all the interest of the participants can't be regarded or doesn't exist yet. One thing some of the dissertations has in common, for example Gislén's and Redström's, is that the main claim wasn't formulated when they were in the beginning of the design work. Their main claim is something that came out of the practical and theoretical work and can be found in their last design work but not in the earlier ones. Gislén says that her main perspective (and claim) was something that has been articulated and crystallized as much from actions as from reflection, out of that which in the beginning just was a general curiosity about her research field of collaborative narratives in digital media (Gislén, 2003:210). I have already brought up how Redström describes this in his thesis as his earlier endeavours into some areas. I don't think of this as something negative for the design outcome or the theory. On the contrary, one could claim that *design before theory* or *experimental design* could be a fruitful method in the early stages, and shouldn't be regarded as a weaker form of research than *theory before design*. I think Gislén explains it in a nice way: if you are having a question in mind from the beginning, it implies that you also are having an idea, an idea not only about how things are, but also how things could be, about what is possible and desirable. And that could be a limitation in the design process since questions that turn up *during* the process, during reflections and analysis, can be more productive (Gislén, 2003: 250). Another benefit if you are moving upwards in the diagram during the design work,

for example starting out quite low and climbing up passing *experimental design* towards *theory before design*, could be that you have a good opportunity to give an example of how to instantiate the knowledge produced in the previous design work in the following ones, higher up. Personally, however, I think that the threshold is a little bit higher; it could be a bit scary to trust that something more will come out of designing than one could see from the beginning. But sometimes we may have to throw ourselves out somewhere, without a final formulated research intention. I see it as a way to make oneself able to find the questions we never could have thought of from the beginning.

However, I can think of a possible problem with this approach of moving from *design before theory* in the first projects towards *experimental design* or *theory before design*, like Redström and Gislén. The problem can occur if one is writing a dissertation consisting of a collection of papers published in accepted, refereed journals and not a monograph dissertation. Then, the order of the papers can give the reader a misleading idea of the main claim since the oldest paper, probably about the earliest projects, is positioned first. Redström's thesis is a collection of papers while Gislén's is a monograph, if you compare the two of them Gislén also writes about her design projects in a chronological order, just as Redström brings them up by his papers. The difference is that she can refer to them from her new perspective, she doesn't need to use the exact thoughts she had back then like Redström has to do. This problem can exist in all dissertations with collections of papers, but I think it is more likely to happen if the design work is positioned in different areas in the diagram.

A problem I've seen with design work closer to *theory before design* is that the design outcome can be quite weak. An example of that are the design pieces in the *Presence* project: the sloganbench and the imagebank (Gaver et al., 2003). The sloganbench is a bench which on the back rest scrolls between different handwritten slogans, written by local elders. The scroll turns automatically, but passers-by can also select slogans manually, but all slogans are written in advance. The imagebank consists of five monitors showing images taken by the elderly. The imagebank is wireless connected to the sloganbench so that the attitudes expressed by the slogans are summarised in images. I find the theory and method in that project far more interesting and beautiful than the design outcome that I'm not even sure should be used as an example or seen as an exploration of the theory. But if we look at the project as a *theory before design* example the design outcome is perhaps not what we should evaluate. It should instead be how well the design process investigated the theory and affected the knowledge produced.

I have tried to draw some conclusions about how the position in the diagram matters for the research outcome, in this context the knowledge production, and I find my thoughts to be too speculative and subjective. (They are too speculative since I have only studied four examples of design-research.) Still, I got a feeling for where in the diagram I would like my own design work to be, which meant that I could start to think about *why* I found that kind of knowledge production more valuable, interesting or inspiring than the others. But I am convinced that everyone has their own opinion and finds different areas to be the most suitable, therefore I'm content with noting that the diagram could be used as a tool to formulate issues regarding ones wishes of research outcome in relation to ones design-research process and other people's work.

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