Using Social Science in Design

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Abstract. This paper deals with ways in which designers of user-centered systems and products can make use of other disciplines, primarily social science, to inform design practice. It discusses various ways in which theories, models and frameworks from social science can be integrated into design research and the problems that can arise when translating concepts, theories and methods from one discipline to another. The paper argues for not only using social science before or after the design process to provide context but letting it intervene in all stages of the design process. The paper draws from experiences with the TA2 project for social group communication.

Keywords: Design methods, social science, social technologies.

1 Purpose

Designers of technologies for social communication are intervening in social processes and practices that the design is in no control over. These practices and processes must be understood and using theory from other disciplines is a way to accomplish that. For design in general this is nothing new and especially the field of HCI and interaction design has always borrowed heavily from other disciplines, for example psychology and cognitive science [1].

Often this has had to do with creating usability and a part of the design process has involved user trials to make the interaction with the design more efficient [2]. When it comes to technologies for social communication that resides within an already existing social situation, things quickly become complicated [3]. Within interaction design, there have been attempts at borrowing from social science, for example from ethnomethodology [4]. However, methods from social science often require long periods of research to make sense and are based on foundations that can't simply be translated over to design research.

This paper will describe methods for using social science in design and how problems, solutions and concepts differ between the two disciplines. It argues for the use of social science as an attempt to manage the uncertainties involved in the design process. In doing this, it draws from experiences gained in TA2, which is a research project aiming to increase togetherness in groups with strong ties separated across different locations.

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The main question this paper addresses is:

How can knowledge from other disciplines be incorporated into design research in a way that does not only become superficial add-ons on top of an already formated design process?

2 Three Ways Social Science Can Impact Design

We can consider three ways of using social science in design which also corresponds to different dimensions of social science.

1. *Social science as confirming the foundation which design is using as a basis.*

A designer can use social science as a way to create a foundation for the assumptions made during the design process, in order to make them explicit as well as confirm or justify these assumptions. Social sciences will then function as an analytic basis for the design decisions, as a way of creating certainty that the process are on the right track. This is the way for example sociology has traditionally informed political decisions. Social science focusing on the analysis and description of empirical data can be used in this way.

2. *Social science functioning as a catalyst for the design process.*

Another case where social science can inform the design process is when it can inspire design to think in creative and radical ways. This resembles how social science have influenced radical thinkers and social movements to change power structures and inequalities. The kind of social science useful here is not about making statements about the fundamental fact of social life but function more as cultural probes trying to discover new ways of being. Social science here functions as a catalyst, in the sense that it is an element that gets a process going, but that is not involved in the transformation process itself [5]. Valuable here is not only empirical data confirming what goes on in the world, but also the sociological sensitivity that Fraser [6] writes about: Sociology's ability to not only look at the past and the present but to get a feel for the trajectories, hinting to a state beyond the present.

3. *Social science as a tool.*

This is a somewhat different approach to the previous paragraphs where social science was used in its unchanged form, as something external to the design process, although they did it in two opposite ways. This third approach would break away from this and instead integrate the social science way of thinking into the very design process. This would mean having to change, tweak and hack the social science concepts and theories in order to make them function in the design process. It would not be a way of telling design what the world is like or how it should be, but a method to create thicker descriptions, richer concepts and a new kind of subtle sensibility in the design practice.

3 Empirical Science in Design Methodology

Using social science in this way differs from the way Dourish describes how design often only borrows a method from another discipline without considering the proper

sensibility and understanding of the core fundament behind the method itself. This makes the actual value of the results from the method unclear.

According to Hallnäs and Redström, this creates problems when the distinction between the analytical-empirical scientific practice and the constructive and creative design process are blurred [1]. It is somewhat of a paradox to use descriptive and analytic theories about the state of the world today, such as the social sciences, as a basis for building the designs of tomorrow - as this is a practice of synthesis rather than analysis.

The social sciences may very well study use of technological artifacts as an empirical study, and there exist many such studies. In design practice on the other hand, the future use and even the future user itself is not something that can be studied in the present but something that is firstly defined as intended use by the designer, and secondly defined in use by the real users – and this actual use might deviate from the original intended use. There will always be a gap between the empirical results of social science and the design choices made. Empirical sciences can provide variables to work with, but the design will then have to be an interpretation of that variable that has no correlation in the present. Central to the use of social science in design is then to turn analytical and empirical results into definitions and concepts, to inspire hypotheses and ideas that can be explored, or to interpret "analytical information in terms of design choices" [1].

This gap between empirical results and design choice can however be made explicit together with making explicit assumptions are based on empirical science and what is the designers own design choices and then begin to investigate what assumptions they are based on.

4 Problems and Solutions in Social Science and Design

Because of this gap, a foundation for the design practice cannot be built from empirical sciences that study the actual, that is what is currently given. However design can make use of the virtual in social science, which would allow us to see trajectories and give us concepts to help describe and define the world and the intended use the designer wants to create, and perhaps also to challenge it.

Social science is traditionally considered to be analytical and descriptive. This means that the scientist typically wants to affect the subject of the research as little as possible as opposed to design that want to intervene in the lives and habits of users.

However, recent developments in social science are questioning this approach and are approaching an understanding of knowledge production that is more similar to the interventionist methods of design research [7].

Social science change the object of study through performativity, by the activity of defining it with concepts and making claims about what the world is made up of. Law says that this means that social science is caught up in "ontological politics" {Law, 2004}. He proposes a version of social science that acknowledges that the scientist affects the world and embraces it by explicitly thinking about the worlds it wants to help realize, thus assuming a normative stance similar to that of designers The difference with design, which is also a discipline that wants to be relevant and

engaged, is that social science only has discourse as its means of changing the world while design has a number of material and discursive practices.

Fraser makes the proposition for sociology to deal with virtual structures rather than actual structures [6]. The virtual/actual distinction comes from the philosopher Gilles Deleuze [8] where the actual is the given situation and the virtual is the possible realities that can be created by the forces that traverse the situation. The task of sociology would in this case be to discover the potentialities and possibilities of a situation rather than just describing its actual state. When using these kinds of concepts from social science in design practice it is not a matter of finding answers in social science to use as a basis for research, rather it is about entering into a problem space with several possible outcomes. Social science evolves problems rather than finding direct answers and in this space of problems the design practice can enter.

5 The Theoretical Loop

Design is often thought of as applied science, resting on theoretical foundations from other subjects [9]. In the perspective proposed in this paper however, all throughout the design process, new insights are gained that reformulate the way the gap between the design and the foundations are negotiated. Theory in design research is part of a loop. Not a progression from theory to practice. As Schön puts it, design process is a continuous dialogue between problem formulation and solution [10].

6 What Does Social Science Allow Designers to Do?

By using social science in the correct way, design can achieve the following:

- By using concepts from social science, design can make a bigger impact with less effort by bridging the gap between the actual, its trajectories and the design. The designer can better understand the space where the design operates and and able to fit the design there without forcing the technology into it.
- Social science allows the designer to be more precise and explicit about the hypothesis and assumption that goes into the design process. Instead of basing the assumptions on common sense or intuition and therefore keeping them as facts, basing them on empirical science enables the designer to postulate them as explicit and open hypothesis that can be evaluated and challenged.
- Designs will be able to contain a larger spectrum of use cases, by making use of the rich descriptions of the social world that social science provides. Social science has made the same mistakes designers will do when making assumptions about the social for a hundred years and at a much bigger scale. Social science can give designers things to pay attention to and ways of thinking.
- Avoid previous mistakes made when design research borrows methods from empirical science without considering the fundaments behind the theory.

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