

## DESIGNING CULTURES: POST-DISCIPLINARY PRACTICES

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### ABSTRACT

Adopting a cross-disciplinary approach influenced by a sociological perspective this paper assesses the implications of a post-disciplinary approach to design and how this is inflected in new cultures of design. This is supported by an examination of the role of design culture and the emergence of participatory design approaches. Within the framework, we explore the value of boundaries as creative sites of action rather than obstacles or impediments to post-disciplinary working. We also describe a number of techniques and approaches to post-disciplinary design that inform, guide and act as provocations for this new approach to understanding design. This includes the use of bricolage in co-creation where technology, social factors and design are defined in terms of connection and juxtaposition, we will also be describing object design and design for experimentation. Finally, this paper highlights the challenges to design practice with the promotion of a more 'romantic' engagement with innovation

*Keywords: post-disciplinary, collaborative design, bricolage, design-in-use*

### 1 INTRODUCTION

Design often inspires or requires change in the cultures its products are meant to fit into. Almost inevitably, such change has many, complexly interconnected, often cumulative positive and negative aspects. A key example is the car and the car cultures that have evolved around it which massively increased people's mobility and flexibility, yet increasingly strangulate our cities and countrysides, contributing to 1.2 million road deaths annually (WHO 2004) and climate change. Another case in point are mobile communication or mobility technologies and emergent communication practices which allow individual access to information and entertainment 'anywhere anytime', as well as intimate connection with distant colleagues and loved ones, but also (arguably) allow an erosion of sociability, civility, and the productive balance between privacy and public assembly in 'real' public spaces.

Designers shoulder some of the responsibility: 'Many of the troubling situations in our world are the result of design decisions', according to Thackara (2005). However, they also perceive themselves as part of the solution: 'if we can design our way into difficulty, we can design our way out' (ibid). This is far from simple, of course, since any attempt at design will again be appropriated in unanticipated ways, and with unpredictable 'systemic' consequences. To exert control one would have to 'design' living cultures, an impossible undertaking.

However, over recent years approaches that constructively appreciate the 'connexity' (Mulgan 1997) or systemic interdependence of designed objects and cultures, designers and the people they are designing for have emerged. Participatory or collaborative design (Kyng and Greenbaum 1991, Voss et al 2008) has perhaps the longest tradition and the most developed practice in this area, with other approaches, such as user-led design in the commercial sector (von Hippel 2005), and open source design in technology (Gosh 2006) but also in other areas such as urban design (Fuller 2008) expanding the scope and ambition of collaborative design approaches. They do not aim for control but for collaboration and experimentation, create not just products and technologies, but also support for creative appropriation, new processes and services, and they productively blur the boundaries between designers, engineers, users, the natural sciences, the social sciences and the humanities.

In this paper we reflect upon our own emergent 'post-disciplinary' practices, theories and methods of research and design to contribute to the development of collaborative design approaches. In the next

section, we locate our own position within this growing field, and then turn to a review of a set of examples from completed and ongoing projects of socio-technical innovation. This is followed by reflections on new boundaries and practices of boundary making in and through collaborative design.

## **2 IN SUPPORT OF BOUNDARY MAKING**

Digital technology is a highly dynamic and complex area of innovation. Lessons learnt in socio-technical collaborative design are revealing for other fields of design for at least two reasons. First, the increasingly ubiquitous and pervasive nature of such technologies means that socio-technical design intersects with almost all other forms of design – from product design, to architecture, urban planning, to service and organizational design. Second, the depth of entanglements of computing technologies and everyday practice and the way in which this has been addressed through collaborative design in this field can inform other forms of design. One of the key lessons in this field is that collaborative design is not built on a wholesale dismantling of boundaries. Bounded disciplinary expertise and distinctions between design and use provide important vantage points and perspectives that are useful for guiding and driving socio-technical innovation. However, the knowledge produced from these different positions too often comes in the shape of partial ‘expert’ views that compete for authority over to-be-designed objects or their prospective home cultures. As Suchman (2002) observes, going beyond such partial views requires that

design work becomes located; that is, we [need to] replace "ways of being nowhere while claiming to see comprehensively" (Haraway, 1991, p. 193), with "views from somewhere" (p. 196) ... This means identifying our participation in the various mediations that define the production and use of new technologies, and taking some responsibility for them.

Taking responsibility means actively negotiating and forging new boundaries between designers, users and other experts rather than simply abandoning boundaries or working ‘across’ boundaries. This is what we mean by ‘post-disciplinary’ design practice.

Disciplines – like design, sociology, economy, engineering – study different areas from different perspectives; they separate what needs to be understood as a whole, such as the introduction of a new communication technology. While multi-disciplinarity can facilitate insights into the dynamic complexities of socio-material-technical cultures for design, it does not enable an understanding of such cultures’ lived autopoiesis. Post-disciplinarity (Jessop and Sum 2001, Mayer Harrison et al 2007), in contrast, returns to the pre-disciplinary roots of many disciplines whose isolation and specialization was formed in the enlightenment spirit of rational inquiry and the (social) engineering confidence of modernity. Post-disciplinarity fosters study and intervention as a holistic endeavour. It enables analysis and design to follow connections all the way through and to forge viable new connections, because they are more mindful of the multitude of dependencies. Post-disciplinary researchers and designers integrate other disciplines’ knowledge and skills, allowing for sophisticated interferences and synergies that enable groups of people to grasp the interconnectedness of factors and domains influencing socio-technical innovation.

## **3 EXAMPLES**

In our work we seek to ‘marry’ the located accountabilities of collaborative design with post-disciplinary conceptions of knowledge generation, design and intervention. In the following, we describe different kinds of collaborations in the context of two projects.

### **3.1 Bricolage in the context of co-realisation**

*Ethnography in support of aesthetic production (1995-97).* This project was originated by social scientists, in collaboration with a practice of landscape architects and a computer scientist. The aim was to use ethnographic studies of the landscape architects’ work practice to inform the ‘design’ or ‘co-realisation’ (Hartswood et al 2002) of a new socio-technical system or culture of aesthetic production. The landscape architects wanted to achieve a step change in their utilization of new technologies in order to be able to offer new high quality services and to increase their profitability. The computer scientist’s background in Scandinavian school participatory design was instrumental in defining an evolving ‘assembly’ of new technologies and to develop new working practices. Over the course of two years, the

team developed a 'bricolage' of new and old technologies, practices, and services (Mogensen and Shapiro 1998, Buscher and Mogensen 1997).

But 'bricolage' was not only a useful description of the product of our collaboration. Bricolage also usefully describes the process. It involves crossing the boundaries between the technical, the social, and the economic. Accepting these boundaries as fixed often means that users receive very little support for their 'bricolage' work, that is, effort spent in making technology work. Co-realisation, in contrast, foregrounds bricolage – the often ad-hoc and creative combination of materials and technologies at hand for a particular purpose – and leverages users' efforts. It also distributes the responsibilities for bricolage more evenly. Technologies, workpractices, services become everyone's concern and the point is to work together to make technology afford work as opposed to the technology designers handing over all responsibility to users as happens when traditional boundaries between technology design and use are adhered to. But neither technologies, nor workpractices, nor services are bounded in this way. They cannot be 'inserted' or 'slotted' into a dynamic and complex socio-technical system, but are, rather, themselves dynamic and open in a way that requires their being 'grafted' into existing (changing) socio-technical substrate, becoming a part of its dynamic – in positive, but also potentially negative ways.

Co-realisation is a way of acknowledging the risks and costs of this process and of being there to address them when they arise. By facing up to the impossible challenge of 'designing cultures' through collective long-term engagement it so-to-speak takes the 'bull by its horns'. This is a process not without friction. The parties involved have different interests and ideas about what is interesting and useful; they may have market or quasi-market relations in which one's gain is the other's loss. Hence, there is a practical politics (Hartwood et al 2002) relating to the sharing of responsibilities, the working up of trust and the sustaining of commitment, and these must be achieved in a situated manner within a constantly changing context.

### **3.2 Designing for experimentation through experimental co-realisation**

*PalCom: A new perspective on ambient computing* (2003-07) The aim of this project was to design a computer architecture that would allow people to 'make computing palpable'. This was motivated by the fact that while digital technologies were becoming increasingly mobile and ubiquitous, they were also increasingly difficult to understand. The dominant design philosophy within mobile and ubiquitous computing seeks to make the computer 'invisible' (Weiser 1991, Norman 1999). The key aim is 'phenomenological' invisibility, that is, people should be able to use computers naturally and without thinking about them. However, this aim is predominantly pursued by advocating and practicing 'literal' invisibility in design, that is, designers hide computers and the computing they do by embedding them and by creating interfaces that provide very simple symbolic representations of aspects of their operation. The idea is that technologies should 'just work'. From our own and many other studies (Suchman 2007) we know that this is as impossible as the ability to design cultures.

The PalCom project brought together professionals who would be highly demanding users of ubiquitous computing technologies (such as emergency service personnel, landscape architects, and healthcare users and providers), social scientists, computer scientists, engineers, and interaction designers to research the possibility of a different approach. It was recognized that to support people in making computing 'palpable' was not a matter of hiding computation and of designing better interfaces. In order to understand the operation of complex processes, people need to be able to 'put their finger on them', to be creative, play, experiment, do bricolage, etc.. This requires a computer architecture that makes it possible to create on the fly 'maps' or 'overviews' of the devices one is currently connected to and to 'inspect' nodes and processes, or to receive clear feedback from them (Buscher et al. 2008, Rullo et al. 2006)

## **4 CONCLUSION**

In this paper we argue that through post-disciplinary collaborative design we can begin to address key challenges of contemporary society. We argue against optimism fueled by conceptions of design that remain rooted in enlightenment rationality and confidence in (social) engineering, and for a more 'romantic' – in the sense of holistic, collective, rational-emotional – approach to innovation and the impossible demand of 'designing cultures'.

Our reflections enable us to see a number of important facts more clearly:

1. Design is not isolated, we can never 'just' design an object. Designers, users, all parties involved are also always implicated in the appropriation of this object. Thereby, design decisions may result in troubling situations and designers may be responsible. But they are not alone in being responsible.
2. Boundaries are made and they cannot and should not be simply abandoned. They are useful. By engaging in an explicit and open practical politics of boundary negotiation, better designs and a better fit of design can be achieved.

These thoughts also raise a few new questions and possible answers, or place them in a new light:

- What is the role of designers? They are needed to create bold, courageous synthetic visions and facilitate collaboration with other parties.
- What methods foster holistic approaches to design? We are developing 'post-disciplinary' experimental methods that facilitate synergy between the activities of designing objects and of 'designing' cultures.
- What is or should be the object of design? Although it is impossible to design cultures, design should be about living cultures. This might mean that post-disciplinary teams add to their focus on objects, technologies, spaces, a focus on designing infrastructural support for creative appropriation or design in use, as well as on 'designing' practices, communication and interaction.

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