

1. Introduction

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The relationship between design and research is changing. Over the past decades, industrial design has established itself as an academic discipline, and is establishing its research culture. Whereas in the past design research had its outlets mainly within niches on the fringes of 'mother disciplines' - such as engineering or psychology - we can now begin to discern the outlines of an emerging field of design research with its own connections to practice and theory.

Academia is engaged in an intensive discussion about the form and contents that PhDs on design should have. Industry is struggling to find ways to incorporate design as a binding and driving factor in product development, which is becoming increasingly knowledge-intensive and cross-disciplinary in nature. And governments (especially in Asia) are starting to recognize design as a driving factor in innovation.

As we grappled with this emerging field, we felt that the time was ripe to make a connection between those doing design research in academia and in industry. On November 10th, 2005, a one-day symposium was held, featuring international speakers, with the participation of 50 practitioners from the broad spectrum of the field: researchers, practitioners and policy makers.

In the morning, three speakers from three continents presented their views and experience of designing as a form of research, and shared their knowledge. They were: Brenda Laurel, known for her work at Apple, Interval, Atari and the books *Computers as Theatre* and *Design Research*; Gillian Crampton Smith, of the Royal College of Art and Interaction Design Institute Ivrea; and Kun-Pyo Lee of the Korean Advanced Institute of Science and Technology. The afternoon consisted of discussions about experiences of design as a knowledge-growing activity.

Demarcation

The aim of the symposium was to take a broad inventory of the vital issues in the field. We wanted to identify viewpoints, issues, and concerns. The goal was not to focus on precise definitions of the terms 'design' and 'research'. That would engender extensive discussion and debate, with possibly valuable philosophical contributions, but would be beyond the scope of a condensed, one-day event.

Rather, we intended to keep the event loose and open-ended by relying on the participants' intuitive understanding of the terms. We wanted to bring into the open the many ways in which the participants deal with incorporating designing and research in their work, and to discuss the various considerations that are involved. Nevertheless, for the purpose of outlining the topic of the day, we can indicate the terms roughly as follows: *designing is an integrative, generative activity that aims to create products and/or services; research is an activity that aims to establish generalizable knowledge.*

Designing and doing research are also related. A design project can yield a variety of bits of knowledge that can be valuable in other places, i.e., constitute generalizable knowledge. Some of these bits can be important contributions to research. On the other hand, research projects can lead to solutions applicable to new products, e.g., by developing measurement instruments.

We focus on the contribution of designing as an activity within research, as an activity that generates knowledge. Hence the title of the symposium 'Design and the growth of knowledge', which draws on the title of the influential compilation on philosophy of science 'Criticism and the Growth of Knowledge' (Lakatos and Musgrave, 1970). Since then, we have learned that 'design and the growth of knowledge' was also a chapter title in Vicenti's (1990) monograph, *What engineers know and how they know it.*

Process

Prior to the symposium, both speakers and participants were handed an open and playful work package, consisting of a generative toolkit (Sleeswijk Visser et al, 2005) covering three questions about design research practice that we encountered in our own work and in discussions over the years. All speakers and participants were asked to reflect on, formulate a vision about, and recount experiences with three problems.

The first question is about the position of design research within the reality of organizations, budgets, and authority. The other two questions focus on how to manage the knowledge itself, starting from the observation that much knowledge gained in a design project gets lost:

- (1) In your practice, who do you need to convince that designing is a valuable way to generate knowledge that can be used beyond the product?
- (2) How do you keep the insights gained in design (research) projects, so you can reuse them?
- (3) How do you spread the insights to other people, or other projects?

The speakers were asked to reflect on these elements in their presentations, but to choose their own perspectives. Similarly, the participants were asked to depict their experiences and viewpoints in maps, which they discussed in the afternoon session. These discussions led to an overview of positions, issues and questions.

The aim of the day was to identify ingredients, share best practices, be surprised by new insights, and finetune our questions. With this publication, we want to make these insights available, on the one hand as an entry point for participants and researchers, providing support and insight in the emerging field of design research. The publication is also intended as a point of reference for researchers, practitioners and policy makers who are interested in deepening their understanding of design as a knowledge-growing activity.

To kick-start the reader, first we provide a perspective on how design can be a part of research (and vice versa). As an example, Ianus Keller's (2005) PhD project is included, in which he actively aimed at uniting design and research (see inset on page 12). Next, we report on the three speakers' presentations. Then, we provide a summary of the issues, positions and questions covered in the afternoon discussions. Finally, John Thackara, who moderated the symposium, provides an afterword, in which he reflects on the day and on the topic of design and the growth of knowledge.

References

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- Sleeswijk Visser, F., Stappers, P.J, Van der Lugt, R., & Sanders, L. (2005). Contextmapping: experiences from practice. *Codesign*, 1, (2), p.119-149.
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