Intermediate Knowledge: A Bridge For Interaction Design To Other Disciplines

Doménique van Gennip [1,2]

domenique.vangennip@uts.edu.au

Elise van den Hoven [1,2]

elise.vandenhoven@uts.edu.au

Panos Markopoulos [2,1]

p.markopoulos@tue.nl

[1] Faculty of Design, Architecture and Building,
University of Technology, Sydney, Australia

[2] Department of Industrial Design,
Eindhoven University of Technology, The Netherlands

Abstract

We propose intermediate knowledge as a more generalised form of insight from empirical studies can bridge a gap within interdisciplinary work combining interaction design with other fields, if focused on its potential to generate questions on a topic beyond the immediate audience of designers and IxD research.

Author Keywords

Interaction Design; Knowledge; Position paper

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

In our present position statement, we focus on the project of the first author on interaction design for everyday remembering. The project considers the value of digital items for personal reminiscence and investigates how memory cueing may influence and benefit everyday wellbeing [4, cf. 5]. In its conceptual framing, this project has relied on cognitive models of memory and embodied memory in addition to empirical investigation of everyday memory cueing using methods typical within HCI. Given frequent interactions with cognitive psychologists, the project can be considered interdisciplinary. This interdisciplinarity

presents challenges for the dissemination of knowledge, as ideas on what constitutes knowledge differ [cf. 1].

Within the field of interaction design (IxD), there is a focus on qualitative investigation of people's practices and experiences (often with technology of some sort) with the intention of arriving at design-oriented insight. Characteristic of these approaches is the use of designed artefacts and empirical evaluation through use studies. Knowledge stems from interpreting (often qualitative) responses from participants, relating this to a body of existing work, and formulating ways in which current insights could shape future designs and new research questions. The form knowledge takes can be theoretical, a process of designing, methods of investigation, user scenarios, and future design concepts [3]. Referred to as intermediate knowledge [6], this provides a more generalised bridge between specific designed artefacts or inquiries and theoretical models. Typically, such knowledge is arrived at either during or after an investigative process (e.g., analysis of an empirical study) with a goal to be inspirational to designers [7].

IxD research often has an explorative character that welcomes subjectivity [1, 2], which can place it at odds with the more controlled process within the field of cognitive psychology (i.e., accepting or refuting theories based on a belief in reproducible, objective practice). Whereas any speculative design work embodies the beliefs and theoretical understandings of its maker(s) [1], the field of psychology typically tries to reduce such influences. This makes cross-pollination of knowledge between these disciplines an interesting effort.

Intermediate knowledge to bridge disciplines

It is therefore the question if and how intermediate knowledge could be of value within interdisciplinary projects as a means of bridging the philosophical gap between disciplines. Given the diverse backgrounds of HCI researchers, we argue mixed disciplines are quite common, and a discussion on dissemination of research insights fruitful. Intermediate knowledge is valued for its generative ability (e.g., future interactive concepts, inspiration scenarios), but forms taken vary, as does the moment of its instigation and use in reflection on (designerly) action. Given such flexibility, and its position amid the empirical and theory, intermediate knowledge may well bridge an interdisciplinary gap if it takes a form not exclusive to designerly use.

We argue an ability to generate questions and reveal what is (not) known, two characteristics we consider key parts of the notion of intermediate knowledge, as ways of contributing across disciplinary boundaries. In more concrete terms, we think that intermediate knowledge can bring an understanding across disciplines of insights gained if such insight is translated into new questions to inspire future investigations across disciplines. The key characteristic here for intermediate knowledge is thus less focused on how a designer can derive new designs from it, but rather how well a new or refreshing perspective is offered to generate questions applicable to one's field. This may shape the choice for kinds of intermediate knowledge sought, as some kinds may translate and inspire more across disciplinary boundaries (e.g., scenarios may translate better than designerly skills or ways of knowing). As such, we reason for a small addition to the understanding of substantivity for forms of

intermediate knowledge towards a body of knowledge (the other pillars of scientific quality being contestable and verifiable as a form of knowledge generation [Booth et al., 2008, via 6]).

Conclusion

We have proposed that intermediate knowledge as a more generalised form of insight from empirical studies can bridge a gap within interdisciplinary work combining interaction design with fields with disparate philosophies on what is knowledge generation in science. We reason intermediate knowledge should be judged on its ability to generate questions on the topic beyond the immediate audience of designers and IxD research. Our interest in this workshop stems from a desire to reconcile an interdisciplinary background with designerly ways of generating scientific knowledge.

References

1.   Archer, B. The nature of research. CoDesign 2, 11 (1995), 6–13.

2.   Fallman, D. Design-oriented human-computer interaction. In Proc. CHI '03, ACM Press (2003), 225–232.

3.   Fallman, D. The interaction design research triangle of design practice, design studies, and design exploration. Design Issues 24, 3 (2008), 4–18.

4.   Hoven, E., van den and Eggen, J.H. Informing augmented memory system design through autobiographical memory theory. Personal and Ubiquitous Computing 12, 6 (2008), 433–443.

5.   Hoven, E., van den, Sas, C., and Whittaker, S. Introduction to this Special Issue on Designing for Personal Memories: Past, Present, and Future. Human–Computer Interaction 27, 1-2 (2012), 1–12.

6.   Höök, K. and Löwgren, J. Strong concepts: Intermediate-level knowledge in interaction design research. Transactions on Computer-Human Interaction 19, 3 (2012).

7.   Sas, C., Whittaker, S., Dow, S., et al. Generating implications for design through design research. In Proc. CHI '14, ACM Press (2014), 1971-1980.