

# VALUE REPRESENTATIONS: A VALUE BASED DIALOGUE TOOL

MAJKEN KIRKEGAARD RASMUSSEN  
AARHUS SCHOOL OF ARCHITECTURE  
MAJKEN.KIRKEGAARD.RASMUSSEN  
@AARCH.DK

MARIANNE GRAVES PETERSEN  
DEPT. COMPUTER SCIENCE AARHUS  
UNIVERSITY  
MGRAVES@INTERACTIVESPACES.NET

## ABSTRACT

Stereotypic presumptions about gender affect the design process, both in relation to understanding users and how products are designed. As a way to decrease the influence of stereotypic presumptions in the design process, we propose to view gender through a value lens. Contributing to this perspective, we have developed Value Representations as a design-oriented instrument for staging a reflective dialogue with users. Value Representations are fictional, value-driven concepts developed to promote dialogue with users about their values and how they may materialize in their everyday lives.

## INTRODUCTION

Bratteteig (Bratteteig 2002) points out that discussions about gender and design primarily address the product side of design, rather than how gender affects the design process. She points to the relevancy of studying gender in relation to the design process, as products are influenced by the gender presumptions held by the designer. Huff & Cooper (Huff & Cooper 1987) has studied how gender stereotypes, held by designers and programmers, affect what they design. They conducted an experiment, where they engaged software designers to build educational software for boys, girls, and students. The stereotypic presumptions about gender led the software designers to design different software for the three categories. The designs for boys and students were very similar, while the design for the girls were based on stereotypical girlish activities. The designers thus built a gender script into the design, supporting the stereotypic notions of what is girlish. The examples illustrate how easy it is to stumble into the pitfall

of simplifying gender into the pervading cultural stereotypes, when designing artefacts. And although the gender stereotypes might hold true in some situations they fail to provide a nuanced picture of peoples preferences and values.

As a way to decrease the influence of stereotypic presumptions in design process, we propose values as a lens to view gender through. Contributing to this perspective, we have developed Value Representations as a design-oriented instrument for staging a reflective dialogue with users. The focus of the technique is to elicit a dialogue, based on a range of fictional products in order to explore and reflect upon a new set of values in relation to a specific product area. The technique has been developed as part of a multidisciplinary research project focusing on creating interaction design for advanced electronic products, based on studies of feminine users. The project explore feminine values, motives, challenges and desires, in relation to three case products; a bluetooth headset to be used with a mobile phone, a music entertainment system and a system for indoor heating control. Historically, and still predominantly IT development is being dominated by males (Bratteteig 2002). The thesis we explore in this paper is that, developing interaction design from a perspective of feminine values, might result in interesting and novel types of product and interactions.

Before we continue we will like to point out an issue of clarification. Some activities and values can be gendered as feminine, but can still be performed and adopted by people of any sex. The gendered values say nothing about how any individual will react towards these or represent these. This paper presents the theoretical grounding for a value perspective and next present the development of value representations and the use of these in workshops with users promoting a reflexive dialogue with users around which values resonate with their lives and how these values may become contextualised with respect to three case products.

## THEORETICAL PERSPECTIVE

Within both Value Based Design (Cockton 2004) and Gender Research (Bardzell 2010), there seem to be a

scarcity of concrete techniques and approaches to how value and gender can be used generative in the design process. With Value Representation we propose to help fill the gap within both fields, through providing a concrete tool for exploring values and gender in the design process. The technique is inspired by Gaver's notion of Value Fictions (Gaver & Martin 2000) supported by Schein's theoretical perspective on the relation between artefacts and values. How the technique separates itself from Value Fictions [ibid] is discussed and reflected upon later in the paper.

Value Fictions utilizes fictional artefacts to explore an alternative value perspective in order to broaden a design space and to provoke reflection upon possible relationship with technology. They differ from science fiction by proposing practical technologies for implausible social goals, instead of inventing implausible technologies to support recognisable cultural activities. Schein's (Schein 1992) framework describing values in relation to culture provide theoretical grounding alongside theories of design as communication (Crilly, et.al 2008), for the close relation between values and artefacts presented in Value Fictions. Schein (Schein 1992) distinguishes in his framework, between three levels of values, namely basic assumptions, espoused values, and artefacts. Basic assumptions form a view upon the world. They are *use-values* and affect the way we act and behave in certain situations. Espoused values comprise what people say, but not necessarily predict how they will act in a given situation. Thus an espoused value can either be or not be congruent with the basic assumptions of the group, but this may not necessarily mean that the expressed value is manifested through actions. Finally, Artefacts are constructed environments and social contexts. They comprise physical buildings clothes, interior etc. But they are also verbal and behavioural manifestations. To infer what the artefact is a manifestation of, can be difficult, and should involve an investigation of both the espoused values and basic assumptions connected with the artefact.

We find Schein's framework valuable as it provides a perspective, which accounts for how artefacts can be manifestations of values and in giving artefacts an equal role in defining and exhibiting values, as the people who use them and as a tool for understanding users wishes, motives, and what they strive for.

## VALUE REPRESENTATIONS

Value Representations focus on eliciting a dialogue between designers and potential users, regarding users values and how they relate to a specific context. The dialogue is centred on fictional artefacts, which serve as visual placeholders concretising abstract values. Figure 1 show an example of a value representations used in the dialogue. The role of the value representations is to act as boundary objects (Star & Griesemer 1989) bridging the gap between the designers' perception of the users values in relation to a specific context and the

world and values experienced by the users. The aim is thus not to discuss whether the specific artefact is desirable in the users home, but to discuss the values inscribed in the artefact. Taking Figure 1 as an example, the aim is to debate the desirability of having or loosing control over the music, how music relates to activities in the home, the desirability of artefacts influencing the activities in the home, and artefacts exhibiting awareness of the users. By centring the dialogue on concrete artefacts representing values, we utilize the established lesson of participatory design and iterative prototyping, alongside Star and Griesemer's notion of Boundary objects (Star & Griesemer 1989)]. To achieve the plasticity of the fictional artefacts as boundary objects, while maintaining a common identity (Star & Griesemer 1989) they are presented on paper cards containing a product visualization accompanied by a short text. The cards contain no technical explanation of the products functionality, but if the participants question the functionality of the design, then its plausibility is loosely described in the dialogue.



Figure 1 Value representation example: exploring awareness and empathy: The music system senses the activity in the room and attempts to select music, which is appropriate.

## THE DIALOGUE

For each of the three case products, we conducted one dialogue session, with four users, divided into two groups. The dialogue session was divided into three parts, a warm-up activity, the dialogue based on the value representations, and a final part where the participants reflected on the artefacts. The women, who took part of the dialogue session, were recruited on the basis of a larger study, conducted earlier in the project, where 200 Danish women were interviewed about their relation to technology. The women who participated in the dialogue session were chosen based on three criteria's: living locally (around the second largest city in Denmark), representing different age groups, and that they differed in their relation to technology.

Each dialogue session were based on 16 value representations, presented in three categories each highlighting a different overarching value theme. In principle, the value themes can be established in a range of ways, either through value based cultural probes (Vaida, & Mynatt 2005) or a new company value proposition, the important aspect is to frame a relevant value theme, guiding the design of the value representations and focusing the dialogue. In our case

the value themes stemmed from the project's initial research phase, where we investigated a number of case studies within the area of psychology and HCI centred on how women relate to technology (Colley & Maltby 2008, Dyke & Murphy 2006, Hou 2006, Van Slyke 2002, Wright 2006). Beside the existing research, the value representations are also informed by information on motivations and barriers with respect to the case products that were gathered in four in situ interviews for each of the three case products. The values promoted in the value representations include: supporting social relations, empathy, holistic, and collaboration.



Figure 2 The value representations were used in workshops with 2x2 women for each case product. Participants were asked to discuss and reflect upon the individual value representations as well as judge between them.



Figure 3 Example of Value Representation illustration: The scarf creates a private sound space, which allows you to talk privately in the public space without being overheard.

#### DESIGNING VALUE REPRESENTATIONS

The basis for designing the value representations, were a specific product and the set of values. However instead of focusing on the specific product, the design space are defined by the “service” the product provides, thus defining it by the functionality that makes the product appealing, rather than the product itself. Defining the design space, as the service the product provides, made it easier to shed existing preconception about the product as a type and redesign it based on a new set of values. In our case we worked with a headset, an indoor heating system and a music entertainment system, but defined the design space for the aforementioned case products as ‘flexible communication’, ‘high quality indoor climate’ and ‘high quality music experience’.

In order to obtain a finished look and sense of realism in the value representations, without spending a large amount of time on designing each representation, they were created as collages utilizing different images of

existing products or product concepts. The existing products, were altered to visually to communicate their new function. An example is Figure 3 showing a simple scarf, which is transformed to communicate the creation of a personal sound space. By visually adding the impression a few LED lights on the scarf, it gets the sense of a more “technical product”, which might be easier to accept as being able to block the sound.

#### REFLECTION ON THE TECHNIQUE

The value representations worked extremely well for triggering discussions and reactions during the value representation dialogue. However, the challenge of creating a recognizable context and situation became evident. Contextualization and relevancy helped breaking down the boundary between the visualization on the card and the participant's lives. Creating relevance of situation and context, proved difficult, as the group of participants were varied, and it was thus hard to find situations that were relevant across different types of living conditions and life stages, ranging from people living alone, with teenagers and with small children and living in different types of homes, from old houses, to modern apartments.

We were pleased to see that people were able to relate to the value representations and put them into the context of their own lives. The reactions to the value representations showed a varied spectrum, ranging from strongly positive and negative feelings, to perceiving them as silly, helpful or even too far out. But they clearly made people envision and relate to new opportunities, as one of the participants put it: “*You start thinking about issues you did not realize that you could think of in this way*”. However, as argued by Schein there is no guarantee that the responses made based on the value representations are grounded in basic assumptions rather than espoused values, as the gained information is still based on responses rather than actions. But as a way of seeking to overcome this, we sought to ground the participant's answer, through steering the dialogue towards exemplifying very specific situations relating to their lives, rather than relying on generalized answers.

#### DISCUSSION

Value representations have close relation to Dunne and Gaver's (Dunne & Raby 2000, Gaver & Martin 2000) notion of Value Fictions, but differs on two points, their role and relation to users. Fictional artefacts are the core, in both value fictions and the value representations, but they differ in relation to what role the artefacts play. The aim of Value Fictions is to be critical and question people's lives through exploring values that are currently socially implausible. The fictions serve a range of roles: a workbook for encouraging a process of imagination with partners (Gaver & Martin 2000), artefacts challenging current assumptions about computers (Dunne & Gaver 1997), or placebo objects taking conceptual design beyond the

gallery into everyday life (Dunne & Raby 2001) Value Representations has the opposite intention, the aim is explore values that are socially plausible and desirable, but hitherto has not been manifested in a specific product area, through gathering knowledge about the values' desirability in a dialogue with users. What is sought is not to present a critical view on people's relationship with artefacts, but to place the focus on whether existing artefacts fit people's values or just blindly follow existing preconceptions about how products should be and what values they should be built upon.

## REFLECTION

The value representations are design-oriented in a double sense, in that they explore directions and designs for possible futures as well as drawing upon design skills in the creation of the representations themselves. The design focus is not on creating value representations as designed products, but on them being visual placeholders of ideas and tools for people to relate to a broader design space encompassing a larger variety of underlying values than prevalent products presume. Value representation also represents a value-driven approach to product and interaction design innovation in that values and services are the starting point of the innovation process. Finally, value representations is a tool for both exploring a broader set of values as well as an approach to addressing gender in design.

## ACKNOWLEDGMENTS

We would like to thank the reviewers for their insightful and helpful comments.

## REFERENCES

- Bardzell, S. (2010) Feminist HCI: Taking Stock and Outlining an Agenda for Design. In Proceedings of CHI'2010, ACM Press, pp. 1301-1310.
- Bratteteig, T. (2002). Bringing gender issues to technology design. in Floyd, C et al (eds): *Feminist Challenges in the Information Age*. Germany: Verlag Leske + Budrich
- Cockton, G. (2004) Value-Centred HCI. In Proceedings of Nordichi'04. ACM Press, pp. 149-160
- Colley, A. and Maltby, J. 2008. Impact of the Internet on our lives: Male and female personal perspectives. *Comput. Hum. Behav.* 24, 5 (Sep. 2008), 2005-2013.
- Crilly, N. and Good, D. and Matravers, D. and Clarkson, P.J. (2008) *Design as communication: exploring the validity and utility of relating intention to interpretation* Design Studies, 29 (5). pp. 425-457
- Dunne, A. and Raby, F. (2001) *Design Noir: The Secret Life of Electronic Objects*. August/Birkhauser, London/Basel.
- Dunne, A. *Hertzian Tales: Electronic Products, Aesthetic Experience & Critical Design*. Art Books, 2000.
- Dunne, A., and Gaver, W. (1997) *The Pillow: The Pillow: Artist-Designers in the Digital Age*. In Proceedings of CHI 1997, ACM Press, pp. 361-362.
- Dyke, L.S. & Murphy S.A. (2006). How We Define Success: A Qualitative Study of What Matters Most to Women and Men. *Sex Roles* 55: 357-371
- Gaver, B., Dunne, A., and Pacenti, E. (1999) *Cultural Probes*. In Interactions. jan - feb, ACM Press, pp. 21-29.
- Gaver, W., and Martin, H. Alternatives (2000) Exploring information appliances through conceptual design proposals. *Proc. of CHI'00* (Den Haag), pp. 209-216.
- Gaver, W. W., Beaver, J., and Benford, S. 2003. Ambiguity as a resource for design. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. CHI '03.
- Hou et. al. (2006). "Girls Don't Waste Time": Pre-Adolescent Attitudes toward ICT . *CHI 2006*, April 22–27, 2006, Montréal, Québec, Canada.
- Huff, C. W., Cooper, J. (1987). Sex Bias in Educational Software: The Effect of Designers' Stereotypes on the Software They Design. *Journal of Applied Social Psychology*, 17:6.
- Le Dantec, C. A., Poole, E. S., and Wyche, S. P. 2009. Values as lived experience: evolving value sensitive design in support of value discovery. *CHI '09*. ACM, New York, NY, 1141-1150.
- Petersen, M. G. Embracing Values in Designing Domestic Technologies. In Proceedings of ECCE 2004.
- Prentice D. A., Carranza E. What Women and Men Should Be, Shouldn't Be, Are Allowed to Be, and Don't Have to Be: The Contents of Prescriptive Gender Stereotypes *Psychology of Women Quarterly*, Volume 26, Number 4, December 2002 , pp. 269-281(13)
- Rokeach, M. (1973). *The nature of human values*. New York: Free Press.
- Schein, E. (1992) *Organizational Culture and Leadership* John Wiley & Sons.
- Star, S., L. & Griesemer, J. R. (1989). Institutional Ecology, 'Translations' and Boundary Objects: Amateurs and Professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19, 387-420.
- Van Slyke, C., Comunale, C. L., and Belanger, F. 2002. Gender differences in perceptions of web-based shopping. *Commun. ACM* 45, 8 (Aug. 2002), 82-86.
- Voida, A., and Mynatt, E. (2005) Conveying User Values Between Families and Designers. In Proceedings of CHI 2005, Late Braking Results, ACM Press, pp. 213-216.
- Wright, J., O'Flynn, G., & Macdonald, D. (2006). Being Fit and Looking Healthy: Young Women's and Men's Constructions of Health and Fitness. *Sex Roles* 54: 707-716.
- Wajcman, 1995 *Feminist theories of technology* In *Handbook of science and technology studie*