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NORM-CRITICAL DESIGN ANALYSIS: A FRAMEWORK

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AN INTERACTION APPROACH FOR NORM-CRITICAL DESIGN ANALYSIS OF INTERFACE DESIGN

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Abstract

This paper argues for the need of a methodological framework for analysing the design of websites from a norm-critical perspective. The aim is to provide a framework for making the "unspoken" values in design visible. We identifying issues and challenges in previous studies on norms and values in interface design and suggest an approach for analysing norms in websites and user interfaces based on sociological and cultural perspectives on design. Approaching norms in interface design we understand design in terms of resources for interaction, involving four aspects of interaction: cultural representations, technology, interactivity, and context.

1. Introduction and aim

The first generation of Internet researchers perceived the Internet as a space separated from the prejudices and norms of the "real" world (Meyrowitz, 1985; Rheingold, 1993). However, this utopian idea was called into question by the following generation of Internet researchers (Wakeford, 1996; Kendall, 2002); claiming that no one only inhabits the Internet (Kendall, 2002). The norms and prejudices of the offline world continue to exist online (Kolko, 2000). More recently, studies on norms and values in computer systems have been highlighted in the field of Human Computer Interaction (HCI) (Friedman *et al*., 2006; Bardzell, 2012) and in the field of game studies (Williams et al 2009). Critical studies on games have shown how racial prejudices and stereotypes in computer games and sexualised female characters are common in top selling computer games (Williams et al 2009, Mou and Peng 2009, Downs and Smith 2010).

In this paper we propose an approach for norm-critical design analysis of interface design such as websites. Norm-critical perspectives are well-established frameworks within research areas such as education (Martinsson & Reimers, 2008) gender and queer pedagogy (Bromseth & Darj, 2010) feminism (see for example Butler, 1990; Bromseth & Darj, 2010; Powell, 2012), and intersectionality (de los Reyes, Mulinari & Molina, 2007). Critical studies on norms have not been explored to the same extent in HCI, even though efforts have been made

(Bardzell, 2010; *et al*., 2011; Friedman *et al*., 2006). Norm-critical perspectives in HCI can be described as a broad framework of ideas and perspectives that study and question ideas of normality and social norms in information systems, related to work in, for example, critical design (Dunne & Raby, 2001; 2013; Blythe *et al*., 2008; Bardzell *et al*., 2011; Bardzell & Bardzell, 2013), feminist HCI (Bardzell, 2010), and value sensitive design (Friedman *et al*., 2006).

In this study, norms are, on the one hand viewed as a concept describing intersubjective, shared and implied rules, and expectations of behaviour in social communities or in society at large (Foucault, 2002; Butler, 2004) and from a ethnomethodological perspective, understood as a resource participants can invoke in the accomplishment and organization of situated actions and activities (Heritage, 1987; Suchman, 2007). Social norms also imply an understanding of how actions are supposed to be performed and how you are supposed to behave towards and in relation to others. From an ethnomethodological perspective, norms are not seen as predetermined but rather as resources invoked in interaction and made relevant at particular points with particular interactional implications. Norms might also be ways of understanding how actors organize activities and the social structures of achieved actions (Garfinkel, 1967; Suchman, 1987; 2007).

The purpose of this study is to shed light on a significant but still underdeveloped research area in the multidisciplinary field of HCI: critical studies of norms in/of interaction design. Due to this shortcoming we suggest an approach that aims to make visible the invisible, the "unspoken spoken" (see for example Foucault, 2002) i.e., the implicit social rules, expectations and relationships in/of the design of interactive systems. Our approach is based on previous studies of norms and norm-critical perspectives in societal domains as well as important influences from the HCI community such as embodied interaction, value sensitive design and critical design. We begin by presenting our perspective on design before describing some current ideas on critical design and norm-critical design relevant to our purpose. Then we discuss some methodological challenges and issues and propose a critical approach for the analysis of social norms in interface design and interactive content. Our understanding of design rests on a sociological account, viewing design primarily as creating resources for actions and interaction (Dourish, 2001; Suchman, 1987). From this perspective interaction with computers should always be understood as being socially and contextually situated.

2. Critical and norm-critical analysis
Critical perspectives and theory are often used to shed light on hidden ideological, semiotic, and symbolic structures in socio-cultural contexts (Dunne & Raby, 2001). A subfield developed from critical perspectives concerns the critical study of norms. Norm critique is both an analytical tool and a method with which agencies can make their own prerequisites to change power structures (Tema Likabehandling, 2012). The analytical purpose of norm critique is to understand how power relations and structures function and hinder equality and inclusiveness at all levels of society, such as interactions between people and distribution of resources and access to key societal functions such as work, education, and health care (Tema Likabehandling, 2012). Norm-critical studies focus on social norms, power relationships, and

inequality of sexuality, gender, class, race, ethnicity, or religion. Several norms can be at work at the same time. This is understood as intersectionality (de los Reyes, Mulinari & Molina, 2007). Norm-critical perspectives question, challenge, transform, and create new norms and standards, but also shed light on how groups may benefit from reproducing norms (Kumashiro, 2002; Martinsson & Reimers, 2008). To visualize norms also means to question these and make the privileges visible, as well as examine one's own position (Bromseth & Darj, 2010). Beginning by asking 'who benefits from this social order?' it is possible to discover how norms are reflected in different activities, actions, and situations (see also Martinsson & Reimers, 2008; Dolk, 2013). Having a norm-critical perspective means to explore and visualize norms that affect our actions, values, and beliefs.

3. Critical design

Critical design is an area of research that has been used in HCI as a way to make users and designers reflect on their own practices and to ask which norms and values are reproduced in the design (Bardzell & Bardzell, 2013). The concept of critical design was developed in the field of interior and interaction design, defined as a possible way to get consumers to take a more critical stance towards their everyday life and consumption of artifacts, aiming for a practice of reflecting on the beliefs, values, ideologies, norms and behavioral patterns incorporated in design and artifacts (Dunne & Ruby, 2001). Criticality in design can be traced to critical design traditions such as post critical architecture, anti-design, conceptual design, and contemporary critical design. Criticality is rooted in a design tradition of questioning the ideas, exposing structures, and creating a space for discussion of power, inequality, capitalism, industry, and technology that underpins conceptions of design. It is, however, hard in many contemporary design domains to locate the terms of criticality, as the basis in capital, industry, and technology no longer hold in the same way, or to the same degree. Post-critical proponents explore notions such as performativity, procedures, and pragmatics rather than concepts of resistance, disjuncture, and negotiations (Maze & Redström, 2009).

According to Maze and Redström (2009) critical design can be understood as certain practices or "approaches that might deliberately mix up traditional measures of value – playing one against the other to criticality in and through practices" (Maze and Redström, 2009 p. 28). From this perspective the notion of criticality is formulated as 'within' the actual design work, as a method to make designers reflect on their own practices (Maze & Redström, 2009). Instead of limiting the notions of criticality to "a kind of theoretical development that happens through, and from within design practices and not by means of external descriptions or analyses of its practices and products" (Maze & Redström, 2009 p. 28), we argue that a critical notion on design should be understood as a practice that must be analysed from both 'within' and 'outside' design practices, through external descriptions, and analysis of the design; as designing and decoding are flip sides of the same coin (Pauwels, 2012). Criticality focuses also on questioning and exposing structures of inequality and practices of obscuring power (Tema Likabehandling 2012), opening up a space for discussion, reflection, and revelation. There are numerous examples of critical design concepts. In Sweden, an interesting example of a critical design concept is Ehrnberger's work on redesigning a mixer by using stereotypically masculine symbols and a drill designed in stereotypically feminine features such as soft lines and in white and pink (Ehrnberger *et al.*, 2013).

4. Norm-critical design and perspectives

Norm-critical design can be understood as a sub-field of critical design where the specific focus is on the relationship between design and social norms and how to support existing practices of norm-critical analysis in the design domain. Previous work by Lundmark and Normark (2012) have, for example, shown how social norms can be embedded in interaction design and how different user roles and identities are made relevant within the design processes of the specific design project of an online youth counselling site, UMO.se (Lundmark *et al.*, 2011; Lundmark & Normark, 2012). The study follows a group of designers creating an animation about what happens in the body when falling in love. The designers of this project actively worked with a norm-critical approach in their design work, and by following their work some concrete examples of design challenges involving normative and value sensitive considerations were identified, as well as examples of how norms and values can be manifested not only in textual or pictorial content, but also in the design at large. This previous work acts as a point of departure for a discussion on how interaction design consisting of technology, interaction, images, sounds, and text together may construct meaning, norms, and values in design. The study referred to here also argues that there is a need to further comprehend issues related to how digital design embeds norms and to examine how the relationship between norms and design can be critically examined. Another study along this line performed as part of a bachelor thesis (Faber & Alexandersson, 2013; Faber *et al.*, 2014) suggests a method on how to apply a critical perspective on the design process of a video production project. The method, enabling practical implementation of critical design in a design process, is based on the perspectives of defamiliarization, evaluation, and provocation drawn from previous research on critical design and led to a changed process of design during the development.

5. An approach for norm-critical design analysis

In the following chapters we outline a preliminary approach for performing norm-critical analysis on interactive design with a specific focus on websites. To approach websites from a norm-critical perspective, decoding the cultural information that resides both in form (design) and content is important (Pauwels, 2012). Norms are embedded in the technological artefact and the interface as well as in its symbols, texts, and images. As such, our notion of interactions in websites is to be understood from four different perspectives; *cultural representations, technology, interactivity,* and *context of use*. These perspectives are interrelated in analyzing social norms in society and culture, and how these are embedded and reflected in technology, interface design, and content.

5.2 Cultural representations

Websites are unique expressions of contemporary culture and as such they constitute a huge repository of potential data about contemporary ways of doing and thinking within large groups of ethnic and national boundaries (Pauwels, 2012). This notion of websites involves a broader sociological and anthropological view on society, analysing human behaviour and

material culture that includes intercultural and intracultural differences and expressions of norms and values, expectations (Pauwels, 2012) in an understanding of what social norms are embedded in the design and what norms are absent. In this study cultural expressions refer to visual, textual, and auditory representations. Exploring cultural representations on websites involves, for example, a discussion of the presence or absence and portrayal of a social group (Williams *et al.,* 2009). Critical questions are; Who/what is represented visually and textually and who/what is left out? What possibilities for identification are there? Visual representations mainly deal with questions of how people make sense of and use information that contains meaning (Blackwell, 2013). In HCI, visual representations are the principles by which markings on a surface are made and interpreted (Blackwell, 2013). This means that theories on visual representations, for example, texts, typography, maps, node and link diagrams, drawings, pictures, signs and symbols, and visual metaphors focus on making meaning rather than norms (Blackwell, 2013). Just like messages, norms can be decoded symbolically through images, texts, and audio sounds, through possibilities of interaction and limitations set up and designed into the system. Studies on race representations in computer games (Leonard, 2003; 2006, Williams, *et al.*, 2009 and Mou and Peng, 2009) have shown how computer games draw on racial stereotypes in their characters. For example Asians being represented as martial artists, Cuban drug dealers as violent rappers, Arabs as terrorists and Latinos portrayed as criminals (Leonard, 2006). "Such stereotypes do not merely reflect ignorance or the flattening of characters through stock racial ideas but dominant ideas of race, thereby contributing to our common sense ideas about race, acting as a compass for both daily and institutional relations" (Leonard, 2006 p. 85). Of course visual representations come in many different forms and shapes; graphical representations (charts), non-graphical representations (images), numerical representations (tables). However for our norm-critical purpose, an analysis of images, pictures, and sounds are relevant to understanding the way in which norms are represented. In media studies, analysis of ideological discourses by content analysis is a common method we consider relevant for a norm-critical study of websites. Content analysis is a research method used for identifying different types of patterns and meanings in a material (Patton, 1990). Content analysis is useful for analysing norms in interface design of websites including the structure and organization of menus, tabs, options, chat forums, communication channels, and so on.

5.3 Interactivity
Unlike graphic design, interaction design includes design of a system's behavior and flow and focuses on the product's aesthetic qualities in combination with user experience.

To be able to understand and critically approach digital artefacts, an analysis of interactions as well as limitations of interactions made available by the system is therefore needed. Critical questions to ask are: What kind of interactive and communication space does the site allow for? What actions and interactions can and cannot be performed? The analysis of interactions from a norm-critical perspective is based on the understanding of interaction as comprised by a broad range of agents and actors, including both people and artifacts. Thus, a critical analysis of interactivity includes, for example, how users interact with the interface and content and how the technology communicates back to the users through feedback and actions connected to the users' actions as well as how the users reflect on and communicate with the

interface. As a part of this norm-critical approach for analysis is the question of whether it is possible to identify practices of resistance, counter strategies, and performances. Embedded points of view and implied audiences (Pauwels, 2012) are studied as part of interaction within the relevant target groups, but also by trying to find what is lacking, what is made invisible in interaction *et cetera*. Social norms, for example in HCI, imply understandings of how actions are supposed to be performed and how users are supposed to behave towards and in relation to others. These norms are present and can be made visible through the study and analysis of interaction. Also the interactions that the system allows for imply certain norms, such as being able to click on the mouse, make choices, menus, navigation, feedback, and the possibility to interact with the system, with other users, and within the system. One example of how norms can be implied within a web-service through the users' interaction with the systems is the "Like"-function that is used on several social medias (such as Facebook, YouTube etc.) to provide feedback about other users' contributions. The Like-function is used to appreciate (or not appreciate) other users' actions within the social media but it is also part of the construction of people's view of social media and embeds a value; that social actions should be graded, reviewed, and commented. The normative aspect of the Like-function occurs in its use and interaction: the way that it is applied to approve of certain expressions while not of others (see Lundmark & Normark, 2011). Even though there seldom exists a "Dislike"-function, the lack of "Like" feedback from peers is also an experience of feedback. The impact of the way that functions make sense to the users and create meaning can show values and norms within the interface. The way that the interface design presents itself to the user largely affects the way the user interprets the meaning of the activities happening there. The implicit meaning embedded in the interface design is invisible in the sense that we do not think about how it structures our actions and interpretations of the online world (see also Bowker & Star, 2000). Also the "culture of profiling" (see Bromseth & Sundén, 2011) in social media illustrates a normative sense of interaction. Thus, profiling in social medias often consists of "point-and-click menus" and "ready-made" identity options" (*ibid.*) that the user can choose from. This creation of normative actions in social media, are not often questioned in the design of these applications. Also the various options allowed within functions (or lack of options) are relevant to an analysis from a normative approach. Also, on the website *Ravelry* (www.ravelry.com), a large crochet and knit community, members can chose between several functions when giving feedback on a members' post; such as educational, interesting, funny, agree, disagree, love. Although these feedback options also imply a grading and reviewing system similar to the Like-function, these options express various alternatives for providing feedback where users have the option to be more varied than if using the vague Like, such as for example, give an instructive pedagogical kind of feedback with "educational" as well as a friendly and intimate response "love".

5.3 Technology

In addition to these perspectives we propose a technical investigation of norms similar to (Friedman *et al.,* 2006), adopting the position that technologies in general, and information and computer technologies in particular, provide "value suitabilities that follow from properties of the technology (Friedman *et al.,* 2006 p. 4)". Technical investigations focus on how existing technological properties and underlying mechanisms support or hinder human values and norms (Friedman *et al.,* 2006). Freidman and his colleagues exemplify this through

the illustration of a video-based collaborative work system, in which some systems provide blurred views of office settings while others provide clear images. These two designs illustrate a value tradeoff between the values of privacy and awareness. How can these ideas be understood in a norm-critical approach to technology? In a thought experiment, imagine an automatic photo filter option for diversity that replaces individuals of the dominant gender with the unrepresented gender or minority gender, or individuals of the dominant racial group with an equal number of people of color, heterosexual representations with homosexual and transsexual representations or representations of functional ability with functional disabilities, and so on when it is needed. A website for a children's daycare center, could for example use the filter option to add men and replace some of the women from the staff. The purpose with the filter option is to add diversity to unequal representations of groups, social institutions, private sectors, and organizations. This technology may also open up for reflections regarding the social norms that we are unaware of by adding diversity to homogenous representations. Photo manipulation is a technology used for normative purposes, for replacing "beauty defects" and manipulating people's bodies, faces, and nature in accordance with a given cultural norm of beauty. This technology can be used for various purposes but implicit in this technology is the manipulation of an object, be it a photo, image, or picture. It is used for the manipulation of bodies, faces, and skin-colors in accordance with the social and cultural norms of beauty.

5.4 Context of use

An analysis of norms in user interfaces cannot be limited to graphical and textual representations, functionalities, organization of data and technology but focuses on the context in which these are used and manifested in our everyday lives (see also Dourish, 2001). In this study 'context' refers to the technical and social context in which the technology is used, as interactive technologies are intrinsically intertwined with the fabric of all relationships between people, institutions, and practices. Technical context can be understood in terms of the tasks that the system is being used for, for example ordering a service, shopping, education or entertainment (puzzle and task solving) systems, music services, and so on. A focus on context is not limited to what users do but also includes *who they are* and *where* and *when* they use the system. A focus on the context and culture matters fundamentally in interpreting normative expressions (Lundmark & Normark 2012). Interactive systems in general are manifested in our environment and incorporated into our everyday activities. The specific designs or user interfaces are various and the general implementation of interactive systems is more significant than the specific system (Dourish, 2001). The social context is the social setting in which the website is used. For example, the technical context of use of a website or web-based service could be the use of web-based services such as information seeking, dialogue, guidance, navigation, functions, buttons, games included in the service, how images and text are related within the services *et cetera*. The social context of use could be related to the people that use the service for information seeking or guidance and the people who have been involved in the design of the service. It also involves the context in which the website is used, for example, at home, school, work or in other settings, as well as on which platforms the website is used, and for what purposes.

6. Concluding discussion and future work

The study of norms in HCI is a limited area of research and therefore so far lacks a theoretical and methodological framework. In this paper we have presented an outline for a norm-critical design analysis based on a foundation of research and studies related to critical design, norm-critical perspectives, and previous work on norm-critical design. The approach is not a theory as it does not aim to explain why or how social norms work in design but is a methodological toolkit to approach the study of social norms within interactive systems. The approach takes several perspectives on interactions; as *cultural representations, interactivity, technology, and context of use*. Each of these can be studied separately as well as more holistically in relation to each other. Our focus, and empirical examples, in this study is the design of websites, but the approach is not limited to websites. It can be generalized to many other kinds of interactive media systems, platforms, and products. The approach presented here should be understood as a starting point for both the development of theoretical and methodological tools for norm-critical design analysis and for further discussions on issues related to norms and normative values inherent in design, interactive content, and structures. The brief outline of the norm-critical approach for analysis has raised several questions that we discuss in this paper but these questions need to be developed and further elaborated upon. Our work in developing this approach for analysis is based on studies made on norm-critical perspectives in design for services mainly concerned with health communication and counselling services directed to youth in Sweden. In future work we will continue to develop this approach and the analysis outlined and posted for further discussion by testing our ideas in empirical studies of the design of interactive systems.

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