

Privacy in the Contexts of Everyday Life - Social Meanings of Privacy in the Light of New Information Technology

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Abstract. Based on a study of everyday users of modern information technologies, we present a set of possible ways to interpret privacy in the context of new information technologies. The results indicate a need to pay more attention to subject-subject information exchange in the study of privacy and emerging information technologies. The results also give us reason to argue that empirical studies of how privacy is perceived by everyday users are needed.

1 Introduction

In our western societies, everybody has something private - thus a need for privacy. Or so the argument goes. The concept has been studied in many fields, with different foci. In computer science, the concerns of privacy in a networked world begun early after the first computers appeared. It is no wonder then that there exists a large body of literature on privacy and computers, and even well known international conferences on the topic (e.g. the ACM conference on Computers, Freedom, and Privacy that has been organized since 1992). In many ways, the question about privacy boils down to the question about the *social acceptability* of new computational products and innovations. The big questions have hovered around new practices [1] related to for example digital rights management (DRM), personal information management, and security of information networks.

Many professionals working in these areas view that the new information technologies challenge - or even threat - our current legal, technical, and social structures. The usual argumentation about the threats to privacy uses quantitative claims about the matter: either we are "losing" a part of privacy or, in the advent of new and powerful technologies, we are having "less" privacy (e.g. on the Internet). It is claimed that new technologies threaten our western rights to be free individuals. The fear of losing our own sovereignty, especially in relation to personal information, threatens the very base of our current identities - and the ways to plausible uphold those. However, it seems that because the concept is deeply rooted in our western culture and because it intertwines many levels of our everyday life, it is easier to present the former claims than to define how people actually understand privacy. Attempts to theoretically define the concept in the field of computer science are numerous [2-5], but the researchers seem to disagree about the meaning of the concept. Meanwhile, with the emergence of ubiquitous computing [6] with ad-hoc networking, a multitude of small computing devices to be used everywhere, and numerous information services to be used at all times, new challenges to the privacy of individuals can be seen [7-8].

However, there are only a few studies in the area that address the question of how people interpret and "do" privacy in their everyday life [e.g. 11]. Therefore, it is especially important to study how people situate the concept in relation to other aspects of their normal lives, and in what kind of contexts the whole concept becomes culturally understandable. The ways of understanding are socially shared and reproduced in particular cultural contexts. In this paper, we focus on how Swedish and Finnish people from various backgrounds understand the concept, and how it is related to their everyday life practices.

This kind of research does not hold a predictive validity on future understandings of privacy and new technology. However, the results give an insight to *present* understandings and cultural relations in which privacy is considered as an important factor. These results give important views on how to design new products that provide better ways to protect and enhance the end-users' feeling of privacy. In addition, the results contribute to the understanding of the potential power of new technology to disrupt current ways and boundaries involved in the maintaining of personal privacy in everyday life.

In this paper, we describe a study of everyday users of modern information technologies, which results provide a set of possible ways to interpret privacy in the context of new information technologies. The paper is presented as follows: section 2 gives a brief background to the study of privacy in computer science. In section 3, we argue that there is a need for empirical studies of how people perceive the concept of privacy, in addition to the prevailing analytical studies available in literature. In section 4, we present the study itself, and in section 5, we conclude with a discussion about its results.

2 Many Facets to One Concept

The roots of research on privacy within computer science are founded in the earliest debates on the impact of computers to the society. For example, the main concern in the early survey article on privacy and computers by Lance Hoffman [9] is on technical issues related to information handling, but it also discusses legal and administrative sides of privacy.

What was a hot topic then seems to have remained as one throughout the decades: the (technical) control of the access to information mediated by the machine. For obvious reasons, the discussions about privacy in computer science have focused mainly on data protection ("cryptography") and defining the appropriate ways of subject-institution information exchange ("fear of big-brother"). Phil Agre [2] has presented an interesting categorization about the current research areas of privacy in the field of computer science.

Agre categorizes research by two axes: by the type of privacy boundary (personal vs. binary) and by the quality of relationship (subject-institution vs. subject-subject) at hand. This categorization ends up with recognizing four distinct areas of research, of which some have attracted more research than others. It seems that for example binary access in subject-subject or subject-institution communication have been a popular area of research, resulting in various innovations in for example cryptography or privacy enhancing technologies (PET).

In addition, the fear of big brother has had its impact on numerous studies on appropriate personal boundary regulation on subject-institution information exchange. However, the research on how personal boundary lines (one's personal identity) are communicated and regulated in subject-subject relationships has to date been a small research area [3, 10-11].

It seems that privacy is used in different meanings in different application areas, but without concentrating in detail on these, we can say that privacy as a concept has been used at least

as: a value, a normative description, a goal of design, a human right, and an operationalized concept (see e.g. [4-5, 12]). When privacy is treated as a value, it is taken for granted and used as a locus of argumentation without any clear definition or purpose. Normative descriptions tell us how things are or how they should be with privacy in certain contexts. Privacy can also be presented as a goal of design – as a dimension or property of a construct that enhances privacy of the user/consumer (e.g. PET). When talking about privacy as a human right, we are moving in the areas of juridical-philosophical discourses. Last, but not least, we have uncountable numbers of different kinds of operationalized definitions about privacy for the many purposes of research. What is obvious in debates and research literature is that privacy is something we are all very concerned about, but that we have limited means to capture the experience of privacy verbally. This very same problem keeps repeating itself in literature about privacy both in everyday newspaper articles as well as in research reports.

3 Back to Basics

The disagreement about the meaning of the concept is hardly a surprise for academic researchers, who for more than 2000 years have been struggling with concepts like “identity”, “being” and “good and bad”. What is more surprising is that few empirical studies have been made about how people actually understand the concept, and in what contexts of their everyday lives that it becomes a socially meaningful concept to talk about. The current discourses consider privacy mostly as an important aspect of large and stable technical networks like the Internet or other networks designed in particular for client-server applications (subject-institution information exchange).

However, we see today a switch towards a greater use of peer-to-peer applications (subject-subject information exchange), and furthermore, the use of small and dynamic networks with wireless network technologies such as IEEE 802.11 and Bluetooth. This development include the use of small portable and wearable devices that interconnects with each other as well as application servers of institutions such as banks, stores, and entertainment establishments [13]. In turn, this technological shift promotes the possibility to form ad-hoc social groups with highly dynamic flows of information between subjects as well as subjects and institutions. Thus, it would be interesting to have a new viewpoint on the matter – to introduce the notion of “social” in the vocabulary of the discourses and to understand which role privacy plays in the context of social networks, mediated by these new technologies.

The focus of the dominant discourses has been on juridical-philosophical debates on digital rights, electronic surveillance and on technical matters of the security of binary access. For their part, they are indispensable debates about privacy and new information technology. However, where are the studies about real people, the concrete consumers or real users of everyday technologies in the field of privacy studies? In the current privacy debates, everyday people exist as components of the overall systems (be it a legal, technical or social system) – not as human beings with the ability to actively invent new uses, meanings and interpretations of the threatening technologies. It seems to us, that without empirical studies of how people in general interpret the concept of privacy the debates on privacy is missing a crucial viewpoint – simply because it does not concern real users and consumers of information technology. In addition, there has not yet been any major discussion about privacy and mobile technology, which seems to be one important future direction of consumer technology.

To address this omission, we conducted a focus-group study about how people understand privacy and in what contexts the whole notion becomes meaningful to discuss and to debate in everyday life. The study is a part of a user-centered design project, named ThinkWearable, for constructing a wearable context-aware instant messenger (see <http://www.thinkwearable.org>). The study results here are part of an ongoing research project collaboration between the HUMLE lab at SICS (Swedish Institute of Computer Science) and IERG-group at HUT (Helsinki University of Technology).

4 Privacy in the Contexts of Everyday Life

As privacy is interwoven into our daily life in many ways, we wanted to find out how people relate to the concept, and in what contexts the whole notion becomes meaningful to everyday users of new information technology. Are people today at all concerned with how their personal information is used by others? Do people worry about the way that other individuals (e.g. family, friends, colleagues, or strangers), or perhaps institutions (e.g. government organizations, employers, or business corporations), relate to and handle their personal information? Are people afraid of privacy violations, do they feel slightly uneasy about it, or do they simply not care at all?

These questions are of course impossible to answer in detail. Perhaps the main reason for this is that people tend to change their opinion about the matter as they gain experience with new technologies [14]. Therefore, instead of trying to make a detailed explanation of how people view privacy, we set out to draw a sketchy map of the concept. Our intentions were to find a set of possible ways to interpret privacy in the context of new information technologies. Thus the focus of this research was to recognize different everyday contexts and their salience in the Scandinavian culture – where privacy is involved and becomes a relevant, articulated topic of everyday understandings.

To draw a map of users' socially shared representations of privacy we had in total 16 subjects, 6 from Finland and 10 from Sweden, to participate in an association exercise. Our subjects were given blank sheets of paper with only the word "privacy" printed on them. We asked our participants to write down words that came to their minds. After 15 minutes of the exercise we went through all the words in groups of 2-5 people and discussed what people came up with and why. In total, people produced 152 word items (93 Swe, 59 Fin).

The analysis performed of the data is a form of qualitative cluster analysis – we analyzed the whole material that our interviewees produced on the blank papers, and formed various clusters or categories based on the recurrent concepts and themes in which privacy was contextualized in the answers.

The word clusters were based on the similarity in the meaning of the generated words. The similarity of the words were evaluated by the researchers on the basis of the interpretations and explanations our subjects gave of the words they came up with in the post-association discussion. The formed clusters of words with similar meaning were thus interpreted as different everyday contexts where "privacy" emerged as a relevant topic of discussion. The generated words were all accounted for by these contexts.

After analysis and the interpretation of the clusters, six different kinds of contexts of using privacy emerged from the data. The cross tabulation below summarizes the relevance of each context in our data. The numbers after the contexts are percentages of the overall words produced on the papers, and by the Finnish and Swedish groups. However, there are

several interpretative limitations in the presented findings that must be taken into account when interpreting the percentages.

First, our aim is *not* to present a statistically distributive generalization of our findings in the Finnish or Swedish population –our data is too small for this. In addition, the groups were heterogeneous and not controlled by different demographic variables. Thus, the differences between Swedish and Finnish data are not to be taken too seriously, as they lack any statistical power. However, these may provide food for thought for possible follow up studies on cultural variations in the understandings and relevance of the contexts of “privacy”.

Second, our aim is not to sort the most “important” contexts related to privacy in everyday life (or to be more precise: in our data). Rather, our aim is to point out that there exist different kinds of cultural possibilities to situate the concept of “privacy” in several contexts, and that the meaning of the concept varies accordingly. Following from the latter, our interest in presenting the cross tabulation is on the demonstration of different kinds of possibilities for contextual uses of privacy, and their relative relevance in our data.

Privacy contexts	Total	Fin	Swe
Personality / Identity	24%	18%	26%
Personal relationships	24%	5%	35%
Physical Boundaries	23%	35%	15%
Information (control)	8%	11%	7%
Rights	6%	11%	2%
Physical artifacts	15%	20%	15%

Table 1. Cross tabulation of the relevance of the generated contexts of privacy related items.

The items in the personality/identity category point to the social fact that, in our societies, some parts of who “we” are should be kept undisclosed to a larger public. In the data collected from the interviews these are, for example: attitudes, religious orientation, and other individual information that build our “personal” identity. In this context, privacy is evaluated by the negative effect of privacy leaks (a negative definition of privacy) and it is very clear that an experience of privacy is a constituent part of our identity and “personal self”.

Privacy was also discussed in the context of personal relationships. Different kinds of personal relationships require different kinds of levels of sensitivity of disclosure and means to take the other participant of the interaction in hand. Words like “gossip”, “defame”, “insult”, and “conflict” were the core of this category. Personal relationships have strict norms of conduct in interaction, and the failure to obey these is considered as a violation against privacy of the interactants. This means that in social interaction, other people’s (and one’s own) “faces” are to be respected, otherwise the privacy in interaction is lost.

Physical boundaries are an obvious context of privacy. “Home”, “physical safety”, and “body” are among the key concepts of this category. People have a strict sense of physical boundary lines, the basis of these being our personal space. We need space to accomplish various things, and some of these things are considered “intimate” thus “private” (like toilets, bedrooms etc.).

Privacy was also contextualized in relation to information control. Our subjects were worried about the use of the information gathered about themselves and their doings. Special concerns were expressed about the commercial use of the recorded data about

people. Words like “uncertainty”, “surveillance”, “visibility”, “e-mail”, and “databases” were the core of this category.

Our subjects also considered their rights to privacy. Words belonging to this category were for example “basic right”, “hard to control”, “law”, and “freedom of choice”. Privacy is a hard concept to define as a right, but in the discussions, it was unanimously considered as a profound right of modern people.

Physical artifacts contained various information technologies, like “diaries”, “mobile phones”, “cameras”, or “computers”. This was an enumerative category of everyday technologies that people considered in relation to privacy.

These categories are in various ways interrelated, but for the sake of clarity, they are kept apart. It could be reasonably argued, for example, that personal/identity is interrelated with personal relationships. However, as the point of analysis was to distinguish different everyday contexts and their salience in the Scandinavian culture – where privacy is involved and becomes a relevant topic of everyday understandings – the interrelation of these categories is not further analyzed in this paper.

There are several implications of this small empirical research on the everyday understandings of privacy to the contemporary research in computer science. They are as follows:

1. Privacy is spontaneously connected to various different contexts. This also means that the whole concept of privacy defines itself differently depending on the context in which it is used (there's no “right” or “only” way to understand privacy).
2. In concordance to the dominant academic debates on privacy, lay people do in fact understand privacy in the context of information control (e.g. e-mail) and physical artifacts (like computers, mobile phones, etc.) and the potential threat that these pose to their integrity in a network world.

However, the former academic debates of privacy and information technology have not paid enough attention to all the contexts that people consider as being important in privacy. This is to say that it is not only the very obvious and visible consequences of IT (subject-institution relationships) that are to be considered in design (e.g. from the juridical rights perspective), but so should also the case with personal relationships and privacy (and the relation that new technologies alter).

5 Discussion

As the development of new peer-to-peer devices and networks is gaining more and more attention, investments, and interest, it is obvious that these kinds of devices, networks, and services are the next big thing in users’ everyday life. They will change our way of interacting, and in this way, they will interrupt our contemporary way of handling privacy in personal relationships.

For the moment, the study on privacy management in personal relationships in the context of new technology is almost missing. However, as the results of our study shows, people are clearly articulating that privacy is important also within this context. This should be carefully considered in the development of future peer-to-peer devices and services. A careful study of how people create and maintain privacy in personal relationships could also give ideas to new features and services to support the “doing” of privacy in social interaction

with the help of new devices – thus creating new requirements to the user-centered design of information technology.

Other results based on the study indicate that it is possible to make at least two claims about people's views on privacy. Related to the personality/identity category is the claim that people sometimes find it comfortable to be anonymous or to hide behind a pseudonym. This is sometimes a conscious action in order to protect oneself or one's personal identity from misuse, but it also seems to be an unconscious action for just feeling comfortable in some specific social context.

The second claim, related to the personality/identity, personal relationships, and information control categories, is that people seem to have a great need to regulate the release of personal information to different receivers. Some information, which may not appear as sensitive, not even to the subject himself, should simply not be divulged to certain other individuals (or institutions for that matter). This control over the release of personal information however, is nothing that people seem to pay much attention to actively. On the contrary, several subjects expressed fears of having to maintain access control lists and the like in order to sustain this control in computer systems.

Thus, when designing information technology that will be used ubiquitously and in many different social contexts, we argue that it is important to acknowledge people's desire to from time to time be anonymous, as well as the need to (somehow) control the release of personal information on both subject as well as institution level. The latter is also supported by in-depth studies of e.g. the use of instant messaging applications and communication via SMS (short message service), see e.g. [11]. This line of research, the effect of new technology on privacy management in personal relationships, has not yet received too much space in the academic discourses. However, it is clear that this will be one very prominent direction of research on privacy in the near future.

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