

Invited paper for publication in the proceedings of the First International Conference on Universal Access in HCI, ([UAHCI'2001](#)), August 5-10, 2001, New Orleans, LA, USA

Designing Trust for a Universal Audience: A Multicultural Study on the Formation of Trust in the Internet in the Nordic Countries

Kristiina Karvonen

Department of Computer Science, Helsinki University of Technology, P.O.Box 9700 HUT, Finland

Abstract

This paper presents a multicultural comparison on users' perception on computer security issues in Finland, Sweden, and Iceland. Special emphasis is given to the notion of trust: how trusting relations are formed both in an electronic environment, namely, the Internet, as well as outside it, in the real world. A set of user interviews, together with walkthroughs of existing Web sites of some e-commerce service providers, were conducted in all these three countries, in order to track down how cultural variation might affect users' perception of computer security, as well as their trusting behaviour. The outcome of the study is an understanding that cultural variation indeed plays a major role in trust-forming, and that the online behaviour of the users representing these three Nordic countries was to some extent similar, but at some points quite dissimilar to one another.

1. Introduction

The rise and fall of e-commerce depends on finding ways to ensure customers that online transactions of money are in fact secure. Internet was not created with security in mind, and has not provided for maximum security till now. However, things are changing, as the Internet society has grown more security-aware. Quite recently, the universal audience interested in the services that e-commerce can offer, has learned to demand some signs of trustworthiness from the service provider to guarantee that their privacy is not at risk. These makings of trustworthiness are, however, likely to vary from one culture to another. What creates trust in a user in one culture may not do the same for a user coming from another culture with a different cultural background. However, Internet has a truly global user base, and it is, thus, important to study the makings of trust in different cultures, in order to be able to provide for trustworthiness for everyone - either through a universal design for all, or through localised design versions of the same service. Whichever design approach we choose, the decisive factor behind the suggested solution should be that it acknowledges and addresses the cultural factors as fully as possible.

This paper presents results from ongoing studies on what promotes trustworthiness towards Web services in Finland, Sweden and Iceland, conducted in 1999-2000. The methodology to gather the research data was to use a combination of user interviews together with evaluations of existing Web services. In all, 35 users from the three countries took part in the user investigation: 20 from Finland, 10 from Sweden, and 5 from Iceland. The areas considered relevant for online behaviour as regards trust were studied, in order to get insight into the makings of the feeling of trust in general, both in and outside of the Web, and how this knowledge might be applicable to behaviour in security-prone use situations online. These areas include the attitude towards and use of computers, phones, Internet, e-mail, passwords, and e-commerce, as well as bankcards, credit cards, and ATMs. Also, the sources of information the decision to trust was based on, again both in the electronic and real world, was studied: who users trust in general, do they trust their bank, do they trust their local newspaper, and where do they gather their information from - from hearsay, rumours, or from various media? And, how does this information affect their behaviour in the Web?

Among the research questions that this study, in its part, tries to answer, are the following:

- How can we investigate into the effects of culture in understanding attitudes towards computer security (especially trust issues)?
- How should we define "culture" in this context? Can national borders be used as cultural borders as well?
- How weighty are cultural considerations for the overall understanding of computer security issues (and, more specifically, trust)?

- Does such a global environment, as the Internet, bring forth its own culture that can override the effects that cultural background otherwise would have on users' perceptions of it? Is the Internet strong enough as a global medium to have a culture of its own, perceived in a similar manner regardless of the cultural background of the perceiver?

The above problem areas have served as a starting point for our enquiry, and we have tried to answer these questions to some extent through our studies. The last item in the list demands for a further explanation. It is important to understand that the Internet might have a culture of its own that overrides other, culture-specific expectations users might have. For example, the Web has been described as a low-trust society (Nielsen 1999, March). What this means is that in the Web, we currently have a *culture of untrustworthiness*, rather than one of trustworthiness: it is natural not to trust but to suspect every service provider and information that is encountered in the Web. This kind of expectations that have to do with the specific nature of the medium we are dealing with, must also be acknowledged and analysed, and taken into account, in creating culturally-adapted interfaces for, say, services, inside this medium.

As results, our paper points out in what various ways the makings of trust, needed to be willing to conduct money transactions online, for example, differ a great deal, depending on the cultural background of the customers using these services. Even in such neighbouring countries as the Nordic countries, the differences among attitudes towards what is trustworthy and what is not, seems to vary a great deal. Also, what is considered private, is a different thing in Iceland than it is in Finland and Sweden. All these differences are listed and analysed. The paper ends with a list of suggestions for a successful design for creating trustworthiness in the Web for all its users.

The rest of the paper is organised as follows: First, we will have a short overlook on previous studies on the impact of culture in usability issues. Then, we will have a look at the results of the studies conducted in Finland and in Sweden. Next, we will describe the results of the Icelandic user studies, and compare them with the results of the previous studies, especially focusing on the cultural differences among the three countries. We will conclude our presentation by design recommendations and suggestions for further research on culture-sensitive design approach for Web design.

2. Previous work on studying cultural variation in usability

Culture plays an important part in how people perceive and interpret information (Del Galdo and Nielsen 1997; Fernandes 1995). This is also true of how people perceive and interpret information about computer security. Security for users includes issues such as feeling secure, feeling private and feeling trustful (Karvonen 1999). In our studies, we have placed special emphasis on the notion of *trust*: how trust is formed, both in and outside the Internet, and on basis of what do people decide to trust someone or something? Anyhow, trusting is basically a social phenomenon (Seligman 1997) that inevitably is affected by cultural factors.

Recognising the impact of cultural background for usability issues is a corner-stone for creating truly universal design - which is something that we need in the era of such global communications and exchanges that the new media, especially the Internet, have provided us with. The importance of cultural effects is well known in the HCI field (e.g. Del Galdo and Nielsen 1997; Fernandes 1995; Shneiderman 2000; Järvenpää and Tractinsky 1999), but still many cultural issues remain unresolved. Small wonder, for the effects of culture on users' perception of usability issues is far too wide and undefined to be easy to grasp, far less to solve here and now. First problem rises already when we try to define *culture*, or, *cultural impact*. How are we going to manage to do something that has been tried over and over again by historians, sociologists, anthropologists, just to name a few, for centuries?

To suit our purposes of studying cultural variation in trust-forming behaviour, it might be best not to try to resolve the problem of how to define culture in general, but to find a definition that will be accurate enough for such a study. A solution that easily comes to mind is to draw cultural borders over national borders - that is, to treat various nationalities as culturally homogenous entities. Common sense already tells us that in doing this we will lose a whole lot of information about cultural variety within a country that more often than not are made of people with various ethnic and cultural backgrounds. For some countries, such as USA, for example, such an approach would be most inappropriate due to the huge cultural variety within that single nation. Also, by using national borders as defining borders for culture we cannot take into account the various subcultures, and other minorities inside these nations that may have their very own but strong cultural rules and likes and dislikes. However, we must choose to research on cultural effects in some way, and national borders do give us at least some kind of, even if coarse, cultural border that we can investigate. This is exactly what we have done in our studies: we have treated the

Finnish, Swedish, and Icelandic users as culturally homogenous groups that differ from each other culturally, at least to some extent. Now we will have a look on the results of these studies each in turn.

3. Acting wary and reserved: the results of the Finnish user studies

The results of the Finnish user studies have been fully reported in (Karvonen 1999), so here we will settle for drawing a general outline of the results of these studies.

The Finnish user studies were conducted as part of the TeSSA (short for Telecommunications Software Security Architecture) project at Helsinki University of Technology. In TeSSA, The main result has been the creation of a security architecture for untrusted networks such as the Internet. The architecture has been implemented using authorisation certificates, and therefore it supports anonymity, delegation, and dynamic distributed policy management. Usability was stressed as an essential ingredient of the design of this software architecture, and the user studies were an attempt to better understand the current amount of knowledge and understanding that an "average user" has on computer security issues.

The study methodology was mainly using ethnographic techniques, including both interviewing the users, together with both non-participatory and participatory observation of either going through a mock-up UI for an online movie service, or existing Web services. The users were graduate or post-graduate students at a university, aged 22 to 30 years, 8 male and 10 female. No background information about computer security was expected, just a basic knowledge of computers and the Internet. The study was strongly affected by the (ECommerce Trust Study 1999), on which the structure or the Web site walkthroughs were based. In the user interviews, the users were asked about various areas that seemed relevant to behaviour in security-prone situations. These included use of e-mail, use of credit cards, use of online banking services, use of ATMs and use of e-commerce.

The user studies showed that the current level of understanding of computer security was far from satisfactory. The trust decisions made about online purchasing were based on miscellaneous information gathered from friends, colleagues, and newspapers, rather than on use manuals or the security information provided by the service provider. The users were more ready to trust a service that existed also in the real world, for example, the online services of their bank. Users were also rather ready to trade-off with their trust level: if they really needed something that they only could get hold of through a Web retailer, they were ready to take the risk and give away their credit card number to the service provider. For example, the use of e-mail had become such an essential part of these users' daily communication that even though they were not one hundred percent sure that their e-mail was completely private, they were ready to take the risk of someone eavesdropping them, since staying in touch with other people was considered so important. In general it can be said that people were making decisions to trust on basis of the opinions of the people that were close to them, or whom they trusted to have technological expertise. This was so to some extent because information about security features was considered to be hard to get hold of, and hard to understand.

In Web site design, Finnish users valued simplicity of design. Simple design was considered to make the transaction process more easy to follow and to control. This result is, in a way, no surprise in many ways: firstly, the so-called "usability purists" have long promoted simple design as key to attracting customers (see, e.g., Nielsen 1999). Secondly, Finland is known for its taste for simplicity, and purity in design - small wonder then that this preference is reflected in the preferred Web site design as well.

4. Relaxed and careless: results of the Swedish user interviews

The Swedish user studies were conducted in Sweden in spring 2000. There were 10 users in all, all with a university degree, aged 34 to 56 years, 5 male and 5 female. Going through the mock-up UI was dropped; instead, only the user interviews and the Web site walkthroughs were repeated. The interview structure was the same as in Finland, but the Web sites were changed for ones that were best known among Swedish users. The outcome of the Swedish user study has been previously reported in more detail in (Karvonen et.al.2000).

The Swedish users were more relaxed and careless compared with their Finnish counterparts in their overall attitude towards computer security and conducting e-commerce. The Swedish users were more indulged in conducting transactions online, and their wishes about the quality of these services was more refined, and had more to do with the details of the transaction process - they were no longer wondering whether or not to do transactions online at all, unlike the Finnish users. Also, the Swedish users expressed a certain carelessness in their trust decisions, as

compared with the Finns: the Swedes acknowledged that in most cases, the decision to trust a service provider enough to indulge in conducting e-commerce was based on an intuition that was mostly an emotional matter. The service seemed "pleasant" and "trustworthy", so they decided to trust it. This difference between the "more rational" Finns and "more emotional" Swedes is a cultural difference: in the Finnish culture, emotions are usually hidden, and rational thinking is greatly appreciated, whereas in Sweden, emotions can be expressed more freely, and they are given more importance also in decision-making than in Finland.

However, in preferred Web site design the Swedes expressed similar preferences as the Finns, favouring, again, simple design. Clarity ("klarhet" in Swedish) was the word used for design that was considered most trustworthy. The wish for clear design was especially strong for the transaction process, where all the unnecessary fancy features were found undesirable and distracting by most users. So at least in this respect the Finnish and the Swedish users expressed similar preferences across cultural borders.

5. The village of trust: results of the Icelandic user interviews

In fall 2000, the user studies were repeated in Iceland. This time there were only 5 users aged 21 to 37 years, of which 4 were university students and one had a university degree. There were four female and one male user. Again, the user interviews were the same, but the Web site walkthroughs were changed. The Web sites chosen for the walkthroughs were taken from (Cheskin Research 2000). The users went through two most trusted and untrusted sites according to this study.

The outcome of the user interviews with the Icelandic users was very different from the Finnish and Swedish studies. Iceland is a small and remote island with a small population of less than 300 000 people in all. What this means is that to a great extent, the Icelanders have remained "villagers": most people know each other, if not directly, then through a middleman, and this is evident in all trust structures. It also means that news travel fast in Iceland: if someone breaks the rules, everybody will soon know it. Take an exemplary excerpt from one interview:

"Someone broke into a Webpage here, the prime court webpage pictures were changed, with the Prime Minister with sunglasses on, this was in all the news, and then people got a little scared, and they took some pics out. Maybe we are a bit naïve about these things, our society is small, and we are not so fixed on rules, and so on, we trust each other. In Copenhagen [where the user had been staying] they use the rules all the time, why don't they just trust what I'm saying."

A common way to find out about the trustworthiness of a Web service provider that was previously unknown for the user was to pick up the phone and call a friend to ask if he or she had already used that service. However, even if such human networks provided some basis for accurate decision-making online for the Icelanders, they were according to most users alarmingly trusting towards complete strangers as well. Take another excerpt from the user interviews:

"We are not so worried about that [about giving away one's credit card number online] either, also over the phone to salesmen you can give your credit card number. There was a misuse case - some lady gave it to a guy over the phone and it was then misused. It was in the news, so I stopped doing that... I discussed what had happened with some friends."

The borders of privacy are very wide and flexible in Iceland, as compared with Finland and Sweden. For example, on basis of a mobile phone number, it is easy to find a lot of information of the owner of that phone number on Icelandic Web sites, including the person's name, address, how many other people live in the same address and their names, social security number, and in what bank the person has a bank account in. In Finland and Sweden, most if not all of this information is considered very private, and is usually not very easy to find from the Web. This is especially the case with the social security number, which is considered to confidential information that should be kept private in Finland and Sweden at least. So we can easily see that the privacy and trusting attitudes are very different indeed between Icelanders on one hand and Swedes and Finns on the other.

However, in Web site design the Icelanders again expressed similar preferences as the other Nordic users. Simplicity and clarity were, again, preferred. According to the testimony of most Icelandic users, the Icelanders were very interested in design, and aesthetics played a great role in their house decorating, for example. This was considered to be so due to the severe climate of Iceland that forced people to stay inside for most of the winter time - it was

important to make the home as cosy and beautiful as possible. This was emphasized by the fact that the Icelanders preferred inviting people to their homes, rather than meeting in restaurants: the house was decorated to please the visitors as well. So, it might be expected that aesthetic design might be a big factor in evaluating Web sites as well. However, simplicity proved to be more important also among the Icelandic users.

6. Conclusions

As we have just seen, cultural variance is a reality in comprehending security-related issues both online and offline. In this study, the Finnish users were most suspicious and wary about Web retailers, and demanded a high level of trust in order to be willing to trust an online service provider enough to be willing to conduct transactions of money online. The Icelandic users, however, were the most trusting, transferring their traditional trusting behaviour from real world also to online environments, demanding very low level of trust (or, having a very high level of *initial* trust) in order to be willing to conduct transactions online. The Swedish users seem to fall somewhere inbetween, acting more carelessly than their Finnish counterparts but more rationally or suspiciously than the Icelandic users. On basis of the results of these user studies we can safely claim that cultural differences do indeed matter for online behaviour, and the trust decisions are based on different ingredients among users from different cultures.

However, even if a difference in cultural backgrounds can explain differences in expressed online behaviour, for example, in readiness and willingness to trust others, be they other people or services on the Web, culture is not always a defining factor for all similarities or dissimilarities in users' behaviour, be it online or not. A good example of this fact is the finding that all the users in our studies preferred simple design, when they were wondering whether or not to trust a service provider on the Web. It is thus clear that if we want to create design that is as culturally-inclusive as possible, i.e. in the case of trust, the kind of design that promotes the feeling of trustworthiness in all our users, be they from whichever culture, we need to understand what features of, say, the Web design are culturally-dependent and which are not. In this study, simplicity of design was a feature of the design that was universal at least across three national borders, perhaps expressing a cultural feature that can be applied to all Nordic countries - a true feature of a joint *Nordic* culture. Further research may show, whether this preference for simplicity has an even wider scope - whether it is a truly *universal* design preference.

Acknowledgements

This research is based on a previous work conducted jointly with Lucas Cardholm and Stefan Karlsson from Prevas AB, Sweden. The user interviews conducted in Iceland would not have been possible without the kind assistance of Ingimar Fridriksson and the kind personnel of the Reykjavik University, Iceland.

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