

# Chapter 11

## Modeling a User's Culture

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### ABSTRACT

*Localizing user interfaces has been proven beneficial for both user satisfaction and work efficiency; however, current localization methods disregard the many facets in the cultural background of today's typical user by simply adapting to a certain country. The chapter proposes a new approach to localization by modeling the user's culture according to its understanding in cultural anthropology. Contrasting this view with cultural influences on user interface perception and preferences, the authors obtain an intersection of aspects that need to be included in a cultural user model, and deduce which user interface aspects have to be adaptable. With this, the chapter turns towards the application of their approach with the help of adaptive user interfaces, which allow the flexible composition of different user interface elements. The authors describe one possibility for implementing such culturally adaptive systems, and exemplify the design of different gradations of user interface aspects with the help of their MOCCA system.*

### INTRODUCTION

User interface designs are a matter of taste as preferences vary from person to person. Commonalities in these preferences, however, can be found deeply-rooted in culture (Dormann & Chisalita, 2002). In support of this, research has shown that people considered to belong to the same cultural group also perceive and process

information in similar ways (Nisbett, 2003). This phenomenon can be observed, for instance, when comparing locally developed web sites in Asia with ones developed by European designers: While Asian web sites tend to offer colorful and often animated user interfaces, Europeans seem to prefer a more factual and structured information presentation. Thus, the design of user interfaces in different countries indicates that culture bundles a variety of these partialities, such as concerning the amount of colors, navigational support, or the

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information density, and that many preferences are collectively shared by certain cultural groups.

In response to these findings, many companies have started to adapt their user interfaces to foreign markets in order to gain customer loyalty and increase their market share (Sheppard & Scholtz, 1999). Most of these so-called localized user interfaces are able to adapt to different countries by modifying aspects such as language, colors, or more rarely the content arrangement. The conventional approach to localization, however, bears several problems: Firstly, many web sites require the user to select a certain country at first entry, thus reducing culture to national borders, and disregarding culturally ambiguous users. A Chinese user who has lived in the United States for half his life, for example, might select the USA from the list of countries, but could be better off with a website adapted to Chinese preferences, or a mixture of both. Secondly, other web sites retrieve the user's IP address, and thus her current whereabouts, but do not consider users currently residing in a foreign country. In this case, a German visiting the Google website in South Korea, for instance, would be redirected to the South Korean version of Google, although this is most likely not the intent.

Implying that culture is equal to a nation, and thus, linked to national territory, it seems as if we could generalize user interface preferences for people of the same nationality. Yet there are many counterarguments to reducing culture to country borders, ranging from the world's globalization that results in the exchange of cultural values, to the artificial definition of country borders in the first place. Likewise, it is questionable whether differences in user interface preferences can be merely ascribed to the level of national culture, seeing that the equation country equals nation equals culture is of limited validity.

In order to overcome this problem we propose to equip computers and their user interfaces with a human-like cultural intelligence (Earley & Ang, 2003). Moving beyond the concept of national

culture, we shift localization to another level: to that of the single user. If we are able to model each user's cultural background, we will be able to adapt user interfaces more precisely.

The precondition for this approach to cultural user modeling is, however, to know which cultural aspects influence which user interface preferences. In what we believe is one of the first collaborations between researchers in human-computer interaction and cultural anthropology we have developed a more profound interpretation of culture for the field of user interfaces. The chapter deals with the alignment of this interpretation with cultural differences in perception and preferences, and further lists those cultural variables that are relevant to our approach to cultural user modeling. With that, we will conclude on a set of cultural aspects that influence a user's interface preferences. We then turn towards the knowledge acquisition process for cultural user modeling, discussing possibilities to ask the user explicitly, infer information from his or her interaction with the computer, or combining both. The remainder of this chapter describes how this approach can be employed in practice: We list user interface aspects that need to be adaptable in order to cater for different cultural backgrounds, and demonstrate a possibility to develop flexible user interfaces that are able to incorporate such choices of different aspects.

## **BACKGROUND**

Culture influences perception, and thus, the way we see and think of the world. This also counts for our perception of user interfaces, our preferences, and how we generally receive and process information (Ito & Nakakoji, 1996). It raises the question on what we need to know about culture in order to understand its influence on user perception and preferences. Is it enough to use culture as a synonym for the user's country? Or do we need a more profound definition of the user's cultural background?

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