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Cross-Cultural User-Interface Design

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Abstract

Cross-cultural user-interface designers should account for dimensions of cultures, e.g., the cultural anthropologist Hofstede's five dimensions when they conside potential design strategies. Recent publications suggest other deep cultural influences on the way people think, act, and feel, which suggest there may be cultural biases in traditional industry usability precepts.

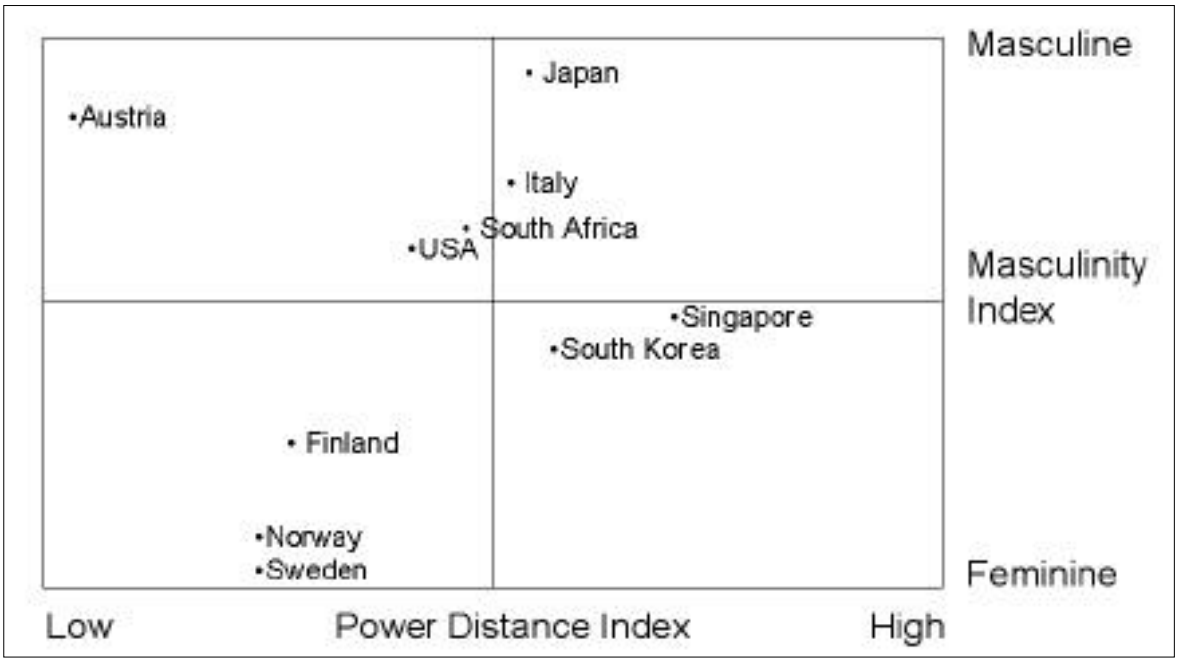
1. Introduction

The work of the cultural anthropologist Geert Hofstede [Hofstede], in which he studied hundreds of IBM employees world-wide in 53 countries during 1978-83, describe five fundamental culture dimensions:

Power distance: the extent that people accept large or small distances of power in social hierarchies
Individualism vs. collectivism: the orientation to individual or group achievements
Masculinity vs. femininity: the degree to which a culture separates/ doesn't separate traditional gender roles
Uncertainty avoidance: the degree to which a culture is uncomfortable with uncertainty and seeks the Truth
Long-term time orientation: the orientation to Confucian thought, which emphasizes patience.

These dimensions and their implications for Web design are discussed at length in [Marcus and Gould]. An example of their interrelations for several countries appears in Fig. 1.

Figure 1: Chart of Masculinity-Femininity vs. Power Distance for Selected Countries, redrawn, from [Hofstede].



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For example, for design of user interfaces in feminine cultures, in which the gender roles are more blurred than in masculine cultures, Websites might promote more mutual exchange and support than mastery. The Website might be more task-oriented and provide quick results for more limited tasks rather than being oriented to outstanding achievement or calling attention to achievements. Poetry and unifying values, natural images, and traditional arts used to generate emotional or aesthetic appeal, might play a more important role than practical, strictly goal-oriented organization, navigation, and use of graphics.

All cultures may be prone to biased presentations of design, not just the products and services originating in the USA. For example, a Web design on which the author's firm consulted, www.Arabia.com, showed a tendency to display screen contents in English for English visitors, but with a right-to-left reading orientation more typical of Arab script. Even the small arrows pointed right-to-left, contrary to most viewers' expectations for the displays.

Figure 1. Arabia.On.Line screen

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2. User-Interface Design and Culture Studies

User interfaces, whether for the Web or for other technologies, can be thought of as having these components:

Metaphors: Fundamental concepts communicated via words, images, sounds, and tactile experiences. Concepts of pages, shopping carts, chatrooms, and blogs (Weblogs) are examples. The pace of metaphor invention and neologism will increase because of rapid development, deployment, and distribution through the Web.

Mental models: Structures or organizations of data, functions, tasks, roles, and people in groups at work or play. Content, funtion, media, tool, role, and task hierarchies are examples.

Navigation: Movement through the mental models, i.e., through content and tools. Examples include dialogue techniques such as menus, dialogue boxes, control panels, icons, tool palettes, and windows.

Interaction: Input/output techniques, including feedback. Examples include the choices of keyboards, mice, pens, or microphones for input and the use of drag-and-drop selection/action sequences.

Appearance: Visual, auditory, and tactile characteristics. Examples include choices of colors, fonts, verbal style (e.g., verbose/lterse or informal/formal), sound cues, and vibration modes.

Recent publications highlight many culture issues that should be considered in understanding further how cultural differences might impact user-interface design.

Christopher Clausen, in *Faded Mosaic: The Emergence of Post-Cultural America*, 2000, [Clausen] argues that classical culture in the USA no longer exists , at least as defined by cultural anthropologists in the past. Culture in earlier circumstances represented group environment that were difficult to escape. Now many uses of culture refer simply to matters of choice, not requirement. Many uses of the term culture now refer to lifestyles. The strict use of the term would not be applied to, for example, affinity groups. Consequently, designers may need to debate how strictly they will apply the concepts of traditional anthropology to current product design and preference and performance differences among target groups.

Dr. Richard Nisbett, a social psychologist from the University of Michigan, has studied how culture molds habits of thought. He uses examples of the differences of descriptions of what Japanese and North-American observe in describing simple scenes, for example what happens in a fish tank. The Japanese observers note relations among the fish, the aquatiic flora, and the simple environment. North American observers,on the other hand, tend to focus only on the actions and attributes of the primary fish. The constrast is stark: one culture is much more oriented to figure-field relationships; the other culture concentrates on the figure. Similar differences have been noted by Dr. Kaiping Peng, at the University of California at Berkeley. He notes that Chinese students seem less eager to resolve contradictions than USA students. Cultural factors seem to run deeply in mental processes. One possible conclusion is that Western scholars' may be in error to assume that there is, or should be, a universal focus on reasoning, categorization, and linear cause-and-effect explanations of situations and events. Such conclusions differ markedly from classical assumptions that would affect the design of user-interfaces.

Prof. David Landes, professor of history at Harvard University, argues in *Culture Matters: How Values Shape Human Progress* [Landes] that social attitudes are more important than politics and economics in determining why some societies are richer than others. This version of the thesis that culture matters greatly is at odds with assumptions of market economists and liberal and Marxist pholosophers, who believe that political and economic factors are of primary importance. Hofstede has a more mixed approach recognising that both cultural as well as political/conomic factors determine wether certain cultures are dominant at different points in history.

Prof. Robert Cialdini, University of New Mexico, has written about the dimensions of persuasion {Cialdini] by which people convince others to think or act in a particular way:

Reciprocation
Consistency
Social validation
Liking

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Authority
Scarcity

Although several of these dimensions combine in any situation to lead to someone's actions, Prof. Cialdini explains that different cultures typically emphasize one factor over others. For example, he comments that an American might decide to honor a request from another person in an office based on whether that person had recently done a favor, while a German would consider the rules regarding the request, a Spaniard would consider whether the person is a friend, and a Chinese office worker would consider the person's authority to issue the request. Although Prof. Cialdinia does not consider Website persuasion and does not elaborate extensively on cultural differences that might affect e-commerce and m-commerce, his analysis clearly opens the door to such considerations.

Hofstede comments that cultural orientations are extremely deeply embedded in cultures over hundreds and thousands of years; consequently, he feels that even modern communication media have not dislodged these cultural orientations. In fact, cultures tend sometimes to concentrate harder on preserving their approaches given the encroachment of alien cultures. On the other hand, recent news events seem to argue otherwise. For example, a recent article comments that Japan's 10-year economic decline has stimulated the rise of individualism [Ono and Spindle].

6. Conclusion

The Web especially fosters the need for good cross-cultural communication in user-interface design. English speaking countries constitute eight percent of the world's population, but by 2005, approximately 75% of Internet users will be non-English speaking. It seems likely that cultural factors will need to be considered more frequently. Already, 80% of corporate Websites in Europe offer more than English even though launching multi-language Website portals with 11 European languages is a significant burden to operations.

Consequently, cross-cultural analysis and design issues will need to be considered more integrally in planning stages, and developers will need check-lists and guidelines to assist them in their design phases. As more cultural analysis of user-interfaces occurs, the results may surprise many professionals who base their assumptions about usability, aesthetics, and emotional experience on previous paradigms that were culturally biased.

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