

## **Abstract**

The present work seeks to describe implicit patterns of natural language and culture in human-computer interaction (HCI). Although extensive research has been done in the fields of HCI semiotics, and HCI culture, we try to bring novel insights through the semiotics perspective, and to propose a set of design guidelines for the international HCI practitioners. The steps to achieve this are: First, to define the semiotic and linguistic system of the user interface (UI) and create a related methodology, and second, to apply the acquired methodology to cross-cultural UI comparison. In the first part we propose a design and analytic method for addressing UI language patterns. We defined the elements of the user-UI interaction grammar, which we then used to form our semiotic evaluation method. The semiotic evaluation method is then compared to heuristic analysis which is already widely used in HCI. While our results show the complementarity of both the methods, semiotic analysis is able to uncover otherwise hidden aspects of the UI. The second part focuses on the ideology of the interaction. Using rhetorics and persuasion techniques the UI lead users to interact in a predetermined way. An analogy between the political and UI ideologies is showed. The third part deals with cultural differences in HCI. In our study we focused on the following cultural markers: spatial organization, shapes, direction of reading, motion, color, color combinations, semantic organization, use of icons and metaphors, preferences for different media, navigation tools, and visual vs. language grammar. With the help of the above mentioned semiotic analysis method we carried a pilot study targeted at cross-cultural research. In our sample we compared the preferences of 20 respondents from the Czech Republic and China. After analyzing the results we gathered a set of conclusions that we turned into a set of UI guidelines to design for the Chinese cultural environment.

**Keywords:** Analysis and design methods, Cultural differences, Cross-cultural product and service design, Design guidelines, Evaluation methods and techniques, Ideology, Persuasion, Semiotics.