



**Luciana Cardoso de Castro Salgado**

**Cultural Viewpoint Metaphors to explore and communicate  
cultural perspectives in cross-cultural HCI design**

**Tese de Doutorado**

Thesis presented to the Postgraduate Program in Informatics of the Departamento de Informática do Centro Técnico Científico, PUC-Rio as partial fulfillment of the requirements for the degree of Doutor em Informática.

Advisor: Prof<sup>a</sup>. Clarisse Sieckenius de Souza

Rio de Janeiro, April 2011

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#### Bibliographic Data

Salgado, Luciana Cardoso de Castro

Cultural viewpoint metaphors to explore and communicate cultural perspectives in cross-cultural HCI design / Luciana Cardoso de Castro Salgado; advisor: Clarisse Sieckenius de Souza. – 2011.

228 f.: il. (color.) ; 30 cm

Tese (doutorado)–Pontifícia Universidade Católica do Rio de Janeiro, Departamento de Informática, 2011.

Inclui bibliografia

1. Informática – Teses. 2. Engenharia semiótica. 3. Design multicultural. 4. IHC e cultura. 5. Metáforas conceituais para o design de IHC. I. Souza, Clarisse Sieckenius de. II. Pontifícia Universidade Católica do Rio de Janeiro. Departamento de Informática. III. Título.

CDD: 004

To Ricardo, Daniel e Rafael.

## **Acknowledgment**

I thank God for being by my side at all times. My courage to move on came from my faith in You.

I am very grateful to my husband Ricardo and to my sons Daniel and Rafael. They unconditionally supported me in easy and hard times. They understood when I was absent and they had a lot of patience with my bad mood. They celebrated my victories and success. I love you!

All my gratitude to my mom (Olga). She did everything to give me the best opportunities. Many thanks! I thank all my family: my father (Pedro), my mother-in-law (Norma), sister (Patricia), brothers and sisters-in-law (Marcelo, Marcus, Alice, Hugo, Alessandra). It's great to have you in my life!

Special thanks go to my advisor and friend Clarisse Sieckenious de Souza. I do not have words to express all my admiration and gratitude. From the beginning she was my guru and a great friend. Thank you for everything!

I also thank Carla Faria Leitão, my co-advisor. For much of this work, we had the pleasure of having Carla with us. Her knowledge was essential at every moment. We had great time during this adventure!

I am sincerely thankful to all members of my doctoral committee. Each one of their contributions was very important to improve this final document.

I extend my gratitude to my colleagues at SERG (in alphabetical order, Ana Carolina, Andréia, Ariane, Bruno, Chantal, Ingrid, Juliana, José Antonio, Marcelle, Marcus, Silvia Amélia, Simone, Tomás and Ugo) and to the volunteers that participated in my studies.

I also thank the National Council for Scientific and Technological Development (CNPq) and the Carlos Chagas Filho Research Foundation of the State of Rio de Janeiro (FAPERJ) for financial support at different stages of this thesis.

## Resumo

Salgado, Luciana Cardoso de Castro; de Souza, Clarisse Sieckenius. **Metáforas de Perspectivas Culturais para exploração e comunicação da diversidade cultural no design de IHC.** Rio de Janeiro, 2011. 228p. Tese de Doutorado - Departamento de Informática, Pontifícia Universidade Católica do Rio de Janeiro.

Mais do que nunca, um dos desafios para o design de interação hoje é o desenvolvimento de sistemas que atendam às necessidades e expectativas de pessoas de diferentes origens culturais e sociais. A perspectiva mais amplamente adotada é a internacionalização-localização. Internacionalização é o processo de separação do código do núcleo funcional das especificidades da interface do sistema (por exemplo, o idioma, as medidas, etc.). Com a localização, a interface é customizada para um determinado público (através da tradução do idioma, dos marcadores culturais e até mesmo de características técnicas, por exemplo). Internacionalização e localização têm como resultado esconder ou neutralizar diferenças culturais entre as comunidades de usuários e contextos de uso distintos. Estamos, no entanto, interessados nas situações onde a intenção de design é praticamente oposta: explorar a diversidade cultural.

Esta tese oferece conhecimento novo para ajudar designers de IHC a comunicarem sua intenção de design quando querem promover o contato dos usuários com a diversidade cultural. São apresentadas cinco metáforas de perspectivas culturais (CVM) para apoiar o raciocínio e a tomada de decisão sobre dimensões da experiência intercultural. As metáforas derivam de estudos empíricos aplicando Engenharia Semiótica para analisar e re-projetar interfaces de sistemas multiculturais.

A fim de investigar se e como estas metáforas apoiam os profissionais de IHC em tempo de design e de avaliação, realizamos um estudo de caso para avaliar como as CVM podem ser usadas em atividades de re-projeto e avaliação. Descobrimos que as CVM desempenham um papel importante nos estágios iniciais do re-projeto e efetivamente ajudam os designers a raciocinar sobre possíveis experiências interculturais que poderão acontecer em tempo de interação. Além disso, as CVM fornecem uma rica “grade” epistêmica, onde a consistência das escolhas de projeto se destaca mais claramente.

## **Palavras-chave**

Engenharia Semiótica; Design multicultural; IHC e Cultura; Metáforas conceituais para o design de IHC.

## Abstract

Salgado, Luciana Cardoso de Castro; de Souza, Clarisse Sieckenius (Advisor). **Cultural Viewpoint Metaphors to explore and communicate cultural perspectives in cross-cultural HCI design.** Rio de Janeiro, 2011. 228p. D.Sc. Thesis - Departamento de Informática, Pontifícia Universidade Católica do Rio de Janeiro.

More than ever before, today one of the challenges for interaction design is the development of systems aiming to attend to the needs and expectations of people with different cultural and social backgrounds. The most widely used perspective in cross-cultural design is internationalization-localization. Internationalization is the process of separating the core functionality code from system's interface specifics (e.g. text language, measures, etc.). With localization, the interface is customized for a particular audience (through language translation, cultural markers and even technical features, for instance). The result of internationalization and localization is *to conceal or neutralize* cultural differences among different user communities and contexts of use. We are, however, interested in another situation: one where the design intent is virtually the opposite: *to expose and explore* cultural diversity. This is the case, for instance, when the purpose of the designed system is to stimulate users to make contact with a foreign culture.

This thesis provides new knowledge to help HCI designers *communicate* their intent when they want to promote the users' contact with cultural diversity. We present five cultural viewpoint metaphors (CVM) to support reasoning and decision-making about intercultural experience dimensions. The metaphors derive from empirical studies applying Semiotic Engineering to analyze and re-design cross-cultural systems interfaces.

In order to investigate if and how CVM actually support HCI professionals/practitioners at design and evaluation time, we carried out an extensive case study to assess how CVM can be used in design and evaluation activities. We found that CVM played an important role in early design stages, helping designers to *reason* effectively about intercultural experiences while determining which cultural perspective they want to adopt. Furthermore, CVM features provided a rich epistemic grid where the consistency of design choices stands out more clearly.



## **Keywords**

Semiotic Engineering; Cross-cultural design; HCI and Culture; Conceptual metaphors for HCI design

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