

## Editorial

### Cognition and the Web: Information Processing, Comprehension and Learning

The workshop "Cognition and the Web: Information Processing, Comprehension and Learning" held in Granada at the end of April 2008 brought together an international group of experts working on the fields of Cognitive Ergonomics and Human-Computer Interaction (HCI). This scientific meeting responded to the current social situation in which the Web has become a universal tool for communication of knowledge between humans. However, there are problems that users encounter during their interaction with these systems, affecting the Web's usability (cognitive overload, disorientation, and difficulties in understanding the information). Moreover, its use is limited for many people with disabilities. They often face difficulties interacting with the Web, which excludes them from universal exchange of information and this new form of social interaction. For this reason, cognitive scientists from around the world are making efforts to address the interaction of individual users with the Web, applying their expert knowledge of how humans process, acquire and memorize information. Their aim is to establish guidelines that can be used by web designers to improve ease of use (usability) and access of the Web regardless of the personal characteristics of users and the properties of software and hardware used (accessibility). More than 50 international experts attended to this scientific meeting in order to discuss their research on the topic. They provided significant theoretical and applied information that can establish useful baselines that are relevant to this interaction and discussed means of improving the interaction.

Eleven papers were selected, reviewed and included in this Special Issue. We grouped them into the following five themes:

#### 1. COMPREHENSION AND LEARNING

##### **Exploratory Study of Relations Between Prior Knowledge, Comprehension, Disorientation and On-Line Processes in Hypertext**

F. Amadiou, A. Tricot and C. Mariné

##### **Processing Text on the Web: The Construction of Mental Representations**

A.B. Nauman

#### 2. DESIGN CHARACTERISTICS

##### **The Effect of Menu Type and Task Complexity on Information Retrieval Performance**

H. van Oostendorp, R.I. Madrid and M.C. Puerta Melguizo

##### **Comparison of Alternative Representational Formats for Hyperlinks: Pictogram, Labeled-Pictogram, and Text**

M. Namatame and M. Kitajima

#### 3. INDIVIDUAL DIFFERENCES

##### **Impact of Spatial Visualization Ability on WWW Navigation**

J. Blustein, I. Ahmed, H. Parvaiz, C.-L. Fu, C. Wang, S. Chapman and Y. Hu

##### **Content Maps Help Low Spatial Ability Users Memorize Link Structures in Hypertext**

Z. Vörös, J.F. Rouet and C. Pléh

##### **The Role of Reading Order and Monitoring Skills during Hypertext Comprehension**

M.C. Puerta Melguizo, L. Salmerón, R.I. Madrid and H. van Oostendorp

##### **Gender Patterns in Hypertext Reading**

A. Protopsaltis

#### 4. COGNITIVE LOAD

##### **Assessing Cognitive Load on Web Search Tasks**

*J. Gwizdka*

##### **The Effect of Reading Strategies and Prior Knowledge on Cognitive Load During Hypertext Reading**

*R.I. Madrid and J.J. Cañas*

#### 5. RESEARCH METHODOLOGIES AND INSTRUMENTS

##### **Read & Answer, A Tool to Capture On-Line Processing of Electronic Texts**

*E. Vidal-Abarca, L. Cerdán R, Salmerón, T. Martínez, R. Gilabert, L. Gil and A. Mañá*

All papers were peer-reviewed. We thank the review committee for doing such an excellent job. The members of this committee were: T. Baccino, L. Salmerón, J-F. Rouet, E. Vidal-Abarca, P. Saariluoma, A. Antoli, A. Tricot, I. Fajardo and M. Gea..

#### **José Cañas**

*(Co-Guest Editor)*

University of Granada  
Campus de Cartuja S/N 18071  
Granada  
Spain  
E-mail: delagado@ugr.es

#### **Herre van Oostendorp**

*(Co-Guest Editor)*

Centre for Content and Knowledge Engineering  
Institute of Information and Computing Sciences  
Utrecht University  
The Netherlands  
E-mail: herre@cs.uu.nl