

James E. KATZ – Daniel HALPERN

***Is a Tour Worth a Thousand Clicks?
Visual Information Processing as Affected by Spatial Abilities
and Individual Differences in a Museum Environment***

Since the introduction of interactive multimedia, 3D representations and rich hypermedia annotations, the use of immersive Virtual Reality (VR) technologies has entered the educational and cultural domains. Museums in particular have tried to adopt these technologies to advance their educational mission via visitor learning, including those who visit their websites and, where offered, visual tours. Through computer generated environments that combine various forms of augmented reality, museums (and many other educational institutions) have started to develop immersive environments for presenting their collections. This type of immersive learning has a valuable role in motivating and empowering students to learn about art, history and even objects that never have existed or no longer do. However, its navigational demands could cause some individuals to become disoriented and become frustrated due to navigational difficulties and problems manipulating software objects. Research indicates that to navigate successfully, users should rely on spatial navigation skills and must plan their movements using a spatial frame of reference, making them places where spatial ability has an impact on performance. This talk presents the results of a study that investigates the interaction of spatial abilities with two-dimensional and virtual tour applications. It does this by comparing the extent to which spatial abilities facilitate users' navigation and engagement with the museums. The aim of this research is to empirically investigate whether spatial abilities have an effect on learning across different instances of 2D and virtual reality displays. The results of the research have implications for the design of digital collections and for the role of visualization as a mode of representation in museums. By extension these implications spill over to areas including formal and voluntary learning as well as the role of visual material in online environments.

James E. KATZ, Ph.D., is Board of Governors Professor of Communication at Rutgers University. Currently he is on leave to direct the division of Emerging Media Studies at Boston University where he is also establishing a new doctoral program. Currently Prof. Katz is investigating how personal communication technologies, such as mobile phones and the internet, affect social relationships and how cultural values influence usage patterns of these technologies. His several books include *Perpetual Contact* and *Social Consequences of Internet Use* (with Ron Rice) and he is the author or co-author of more than 60 peer-reviewed journal articles. Among his recent awards are the 2011 Ogburn award for career achievement from the American Sociological Association and the 2009



Fulbright Distinguished Chair in Twentieth Century Communications History. E-mail: j.k@rutgers.edu.



Daniel HALPERN is an assistant professor at the Catholic University of Chile. He is the author of *El Pecado de el Rucio* (2008, Catalonia) and *Gestion de Crisis: Teoria y Practica de un modelo comunicacional* (2010, Ril). His research has been published in different journals. In 2008 he received a Fulbright Scholarship to do his PhD at Rutgers, where he is finishing his dissertation. E-mail: halperndaniel@gmail.com.