

The Effect of Text Topologies on Older Users' Performance in Hypertext Navigation

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Abstract

Although hypertext enables more control over document exploration of a larger amount of information, users in hyperspace often experience disorientation arising from the complexity of text topologies. The navigational problem may impose severe difficulty on older users as ageing has been shown detrimental to human spatial orientation. The present paper intends to examine the effect of different topologies on older users' performance in hypertext perusal. Two commonly used text topologies, hierarchical and referential, were constructed with HTML. Twelve subjects whose ages ranged from 57 to 67 participated in an experiment where the two topologies were manipulated. The results showed that for older adults, hierarchical hypertext was superior to its referential counterpart in terms of browsing and navigation efficiency. The implications for design of hypertext systems/interface specifically for the aged are discussed.

Introduction

As computer technology advances, hypertext has become a major platform for representing information. This is true in many applications such as the world wide web and computer-aided instruction systems. Hypertext is a class of information structure comprising nodes of data items where relations between these nodes are connected by explicit links (Conklin, 1987). The prominent feature that distinguishes hypertext from traditional information queries is that hypertext allows rapid access of information in a non-linear fashion, and extends the user's control to larger amounts of information by document exploration (Conklin, 1987).

Despite these advantages, users traversing hyperspace do not seem to benefit from the degree of freedom that hypertext provides in searching for information. The major limiting factor of hypertext has been that users often get lost, or disoriented due to the complexity of text topology (Gygi, 1991; Kim and Hirtle, 1995; McDonald and Stevenson, 1996; 1998). The disorientation problem in the use of hypertext can be categorised into two groups: The Art Museum Phenomena and the Embedded Digression Problems (Foss, 1989).

The Art Museum Phenomena refer to the problems associated with hypertext browsing; i.e. an open information seeking activity in a non-directive manner.