Typeface size and weight and word location influence on relative size judgments in tag clouds

Khaldoon Dhou, Mirsad Hadzikadic, Mark Faust

PII: S1045-926X(16)30021-0
DOI: 10.1016/j.jvlc.2017.11.009
Reference: YJVLC 824

To appear in: *Journal of Visual Languages and Computing*

Received date: 9 February 2016
Revised date: 26 November 2017
Accepted date: 29 November 2017

Please cite this article as: Khaldoon Dhou, Mirsad Hadzikadic, Mark Faust, Typeface size and weight and word location influence on relative size judgments in tag clouds, *Journal of Visual Languages and Computing* (2017), doi: 10.1016/j.jvlc.2017.11.009

Typeface size and weight and word location influence on relative size judgments in tag clouds

Khaldoon Dhou[a,*], Mirsad Hadzikadic[b], Mark Faust[c]

[a] *Department of Mathematics and Computer Science, University of Missouri – St. Louis*
[b] *Department of Software & Information Systems, University of North Carolina at Charlotte*
[c] *Department of Psychology, University of North Carolina at Charlotte*

Abstract

This paper focuses on viewers' perception of the relative size of words presented in tag clouds. Tag clouds are a type of visualization that displays the contents of a document as a cluster (cloud) of key words (tags) with frequency (importance) indicated by tag word features such as size or color, with variation of size within a tag cloud being the most common indicator of tag importance. Prior studies have shown that word size is the most influential factor of tag importance and tag memory. Systematic biases in relative size perception in tag clouds are therefore likely to have important implications for viewer understanding of tag cloud visualizations. Significant under- and over-perception of the relative size of tag words were observed, depending on the relative size ratio of the target tag words compared. The qualitative change in the direction of the estimation bias was predicted by a simple power-law model for size perception. This bias in relative size perception was modulated somewhat by a change to a bold typeface, but the typeface effect varied in a complex manner with the size and location of the tags. The results provide a first report of systematic biases in relative size judgment in tag clouds, suggest that, to a first approximation, simple power-law scaling models developed for simple displays containing 1-2 objects on a blank background, may be applicable to relative size judgments

*Corresponding author
Email addresses: dhouk@umsl.edu (Khaldoon Dhou), mirsad@uncc.edu (Mirsad Hadzikadic), mefaust@uncc.edu (Mark Faust)