4 Conclusion and Implications

Overall, both our behavior data and eye tracking data demonstrated a robust effect of font size. Participants scanned and recalled more tags with larger fonts. They recalled more big tags than medium and small tags, while no more medium tags than small tags, except when the location is outer. However, we found a significant difference between medium tags and small tags in eye movement. Participants spent longer time and switched their eyes more frequently to medium tags than small tags, but they didn't encode or retrieve more medium tags. Therefore, eye movement is a more sensitive index to indicate what kind of tags can attract people's attention. People browse and search the tag clouds, click the tags that they are interested in, and needn't to memorize the tags.

The effect of location is not as robust as that of font size, and the behavioral data and the eye movement data are not so consistent. Only when the tags are big, participants recalled more tags inner than middle and outer. Interestingly, participants seemed developed their own visual scanning strategy to the tags in middle of a tag cloud. They spent similar amount of time, on tags in the middle as in the inner location, but significantly more time than in the outer location. The eye fixation frequency showed similar findings. These findings suggested while participants tried to move their eyes to tags in the middle location to reduce the interferences from tags from outer and inner locations, the recall of tags in the middle location was not compensated.

The effect of quadrant showed that participants recalled more tags in upper-left and upper-right than lower-left and lower-right and scanned more in upper-left than lower-right. Designers may consider upper quadrant especially upper-left as a focal point within a tag cloud. This area can either locate smaller font tags to compensate for font size, while locating bigger font tags to other quadrants, or locate tags that need to be emphasized.

In the future, other features of tag clouds such as tag colors, tag orientation, tag cloud size/density, number of characters/tag, semantic relationship of tags, need to be investigated so that we will have a better understanding of both cognitive and social process of tags in a tag cloud in order to design a better retrieval system to support tag creation, presentation and sharing.

Acknowledgements. This material is based upon work supported by the National Science Foundation under Grant No. IIS-0803225. We thank Dr. Kan Zhang and Dr. Xianghong Sun for their assistance in this project.

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