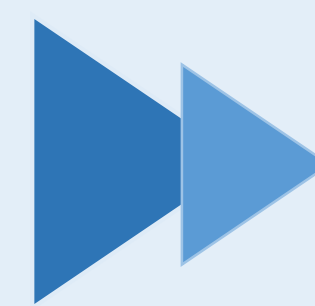


Online Study on Reading Behavior of Data-Rich Texts with Integrated Word-Scale Visualizations

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How do word-scale visualizations influence reading behavior of texts?



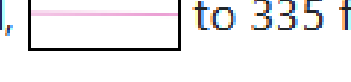
Controlled Online Experiment
49 between-subject participants

Conditions

WSV condition

Data-rich text with integrated word-scale visualizations

Drop in Gang Violence Drove New York City Shootings Below 1,000 in 2016

The internal police data, obtained by The New York Times, paints a detailed portrait of the motives, locations and circumstances behind murders and shootings for the last two years.  Shootings fell to 412 in 2016, from 560 the year before, according to the data, which tracked shootings and murders through Dec. 28 of each year. Killings  dropped to 79 in 2016, from 129 in 2015. Those helped push citywide shootings  to a new low of 998 by year's end, police officials said, down from 1,138 in 2015. Murders also fell,  to 335 from 352 the year before.

When you finish reading the text, click "Next". By leaving this page you won't be able to return to it.

Next

Baseline condition

Data-rich text without word-scale visualizations

Drop in Gang Violence Drove New York City Shootings Below 1,000 in 2016

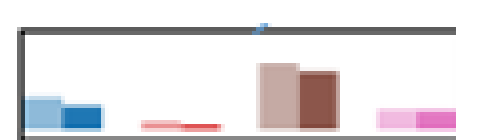
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When you finish reading the text, click "Next". By leaving this page you won't be able to return to it.

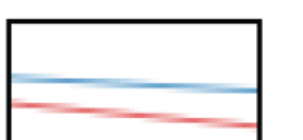
Next

Task Categories

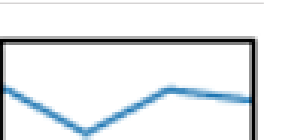
T1 calculated information that could be learned by simple calculations from parameters in the text



T2 relation of two tendencies of parameter trends in the text



T3 trend, minimum, and maximum value of a parameter that has a non-monotone development

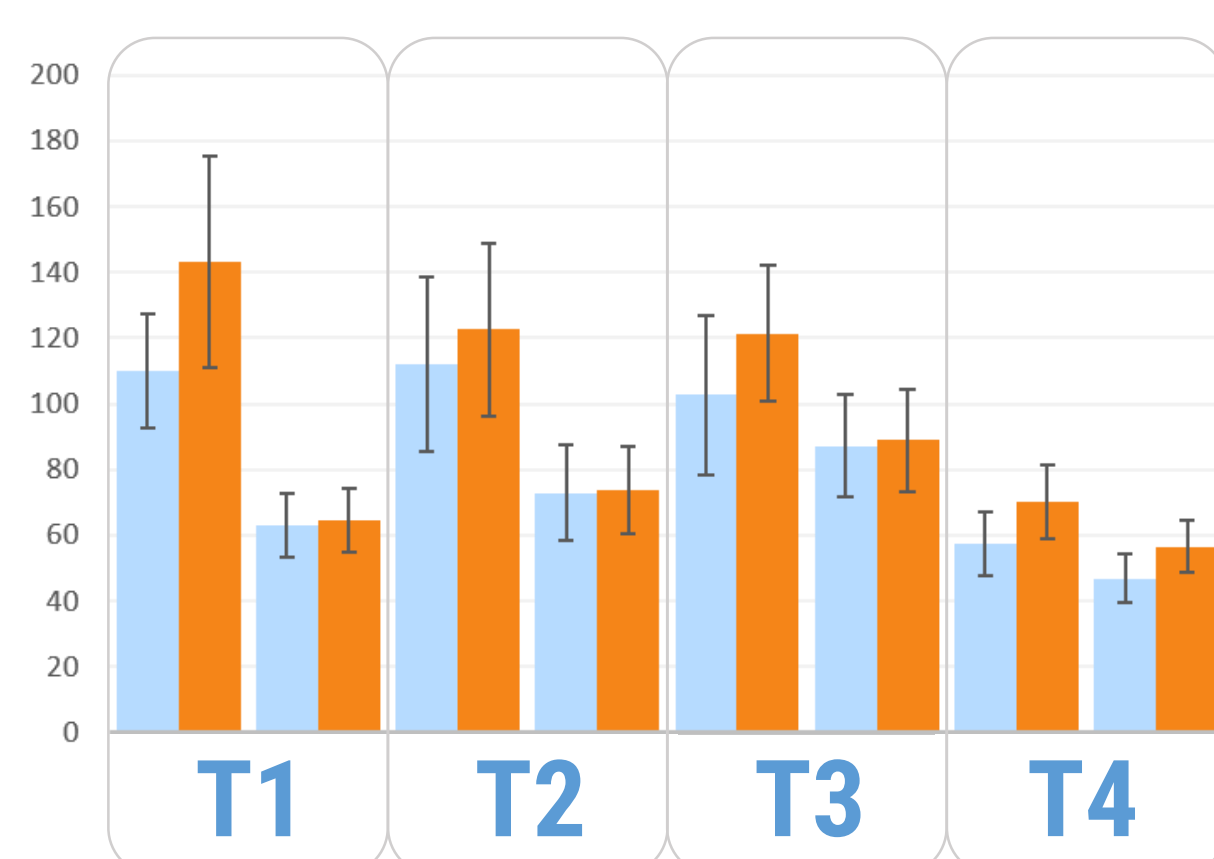


T4 information that is in the text, but not explicitly stated by numbers

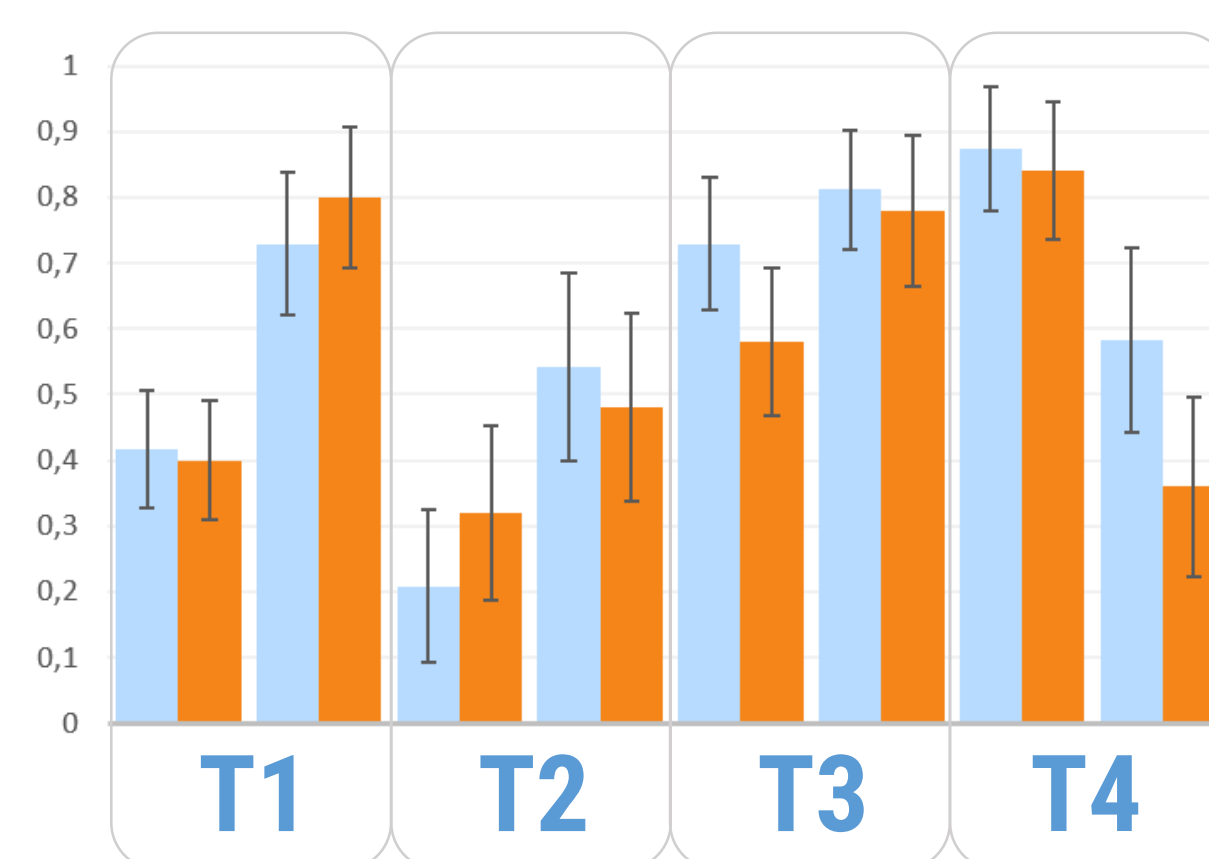


Results

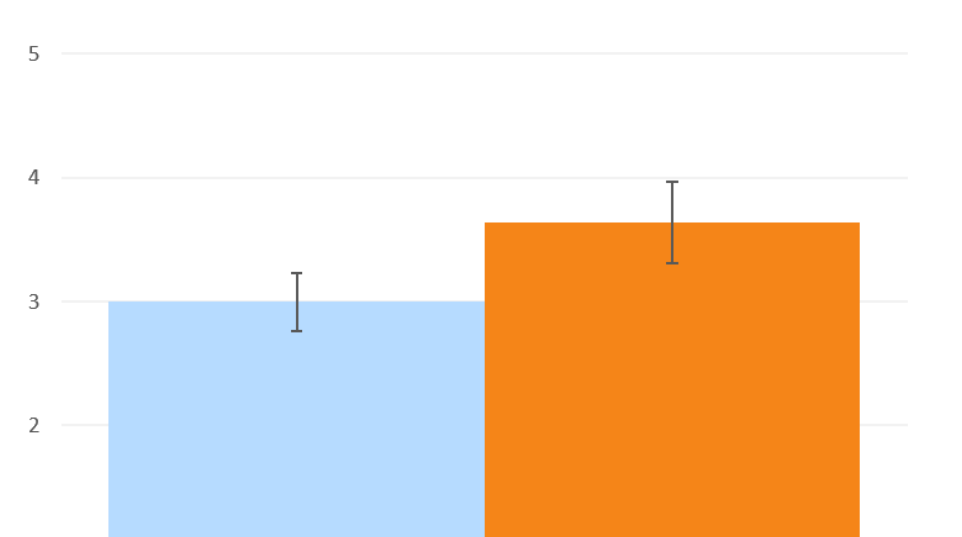
Answer Speed *



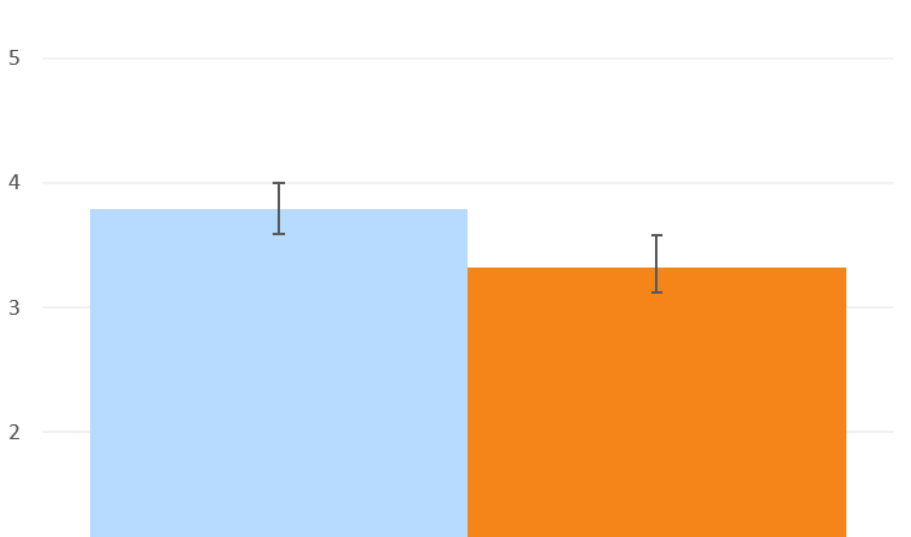
Error rate *



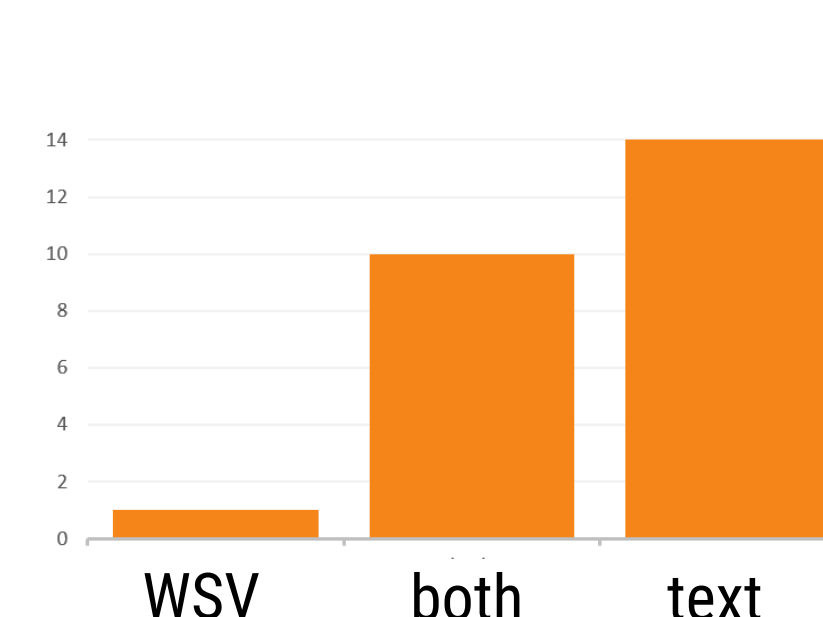
Confidence *



Task difficulty *



Focus on WSV or text



*Average and 95% confidence interval

Without WSV With WSV

Conclusions

- We could not find significant differences between the conditions or between the text categories, for both answering speed and answer accuracy.
- An interesting starting point for further investigation is that participants who stated that they focused mostly on the visualizations, or both text and visualizations, had a lower error rate compared to those who focused mostly on the text.