

What's Your Type? Psychophysics of Variable Fonts: Gaze Measures of Reading Efficiency



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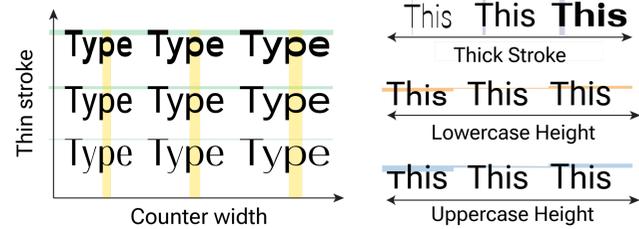
APPLY LAB

Introduction

Reading is a complex task that presents challenges across different platforms, and finding the optimal font and spacing for individuals remains an ongoing area of study.

Our goal was to investigate the effects of variable fonts on reading performance. Variable fonts allow designers to manipulate text appearance along many continuous "axes". This allows them to produce text that looks very different, all from a single font file. **Variable fonts uniquely allow customization of font appearance along a set of continuous parametric axes within a single font file lending themselves readily to psychophysical techniques.**

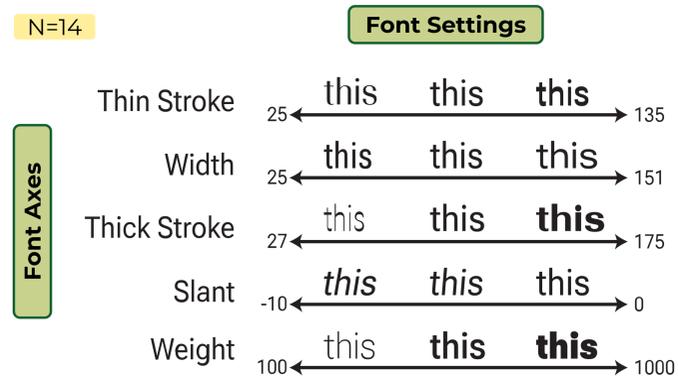
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Q: How does varying visual features in variable fonts impact gaze behavior?

Methods

These axes were selected from Roboto Flex



Eye Tracking

- Saccade Amplitude
- Number of Fixations
- Fixation Duration

Do other... (1802-1857) was an author, teacher, and reformer. Her efforts on behalf of the mentally ill and prisoners helped create dozens of new institutions across the United States and in Europe and changed people's perceptions of these populations. Charged during the American Civil War with the administration of military hospitals, Dix also established a reputation as an advocate for the work of female nurses. Her own

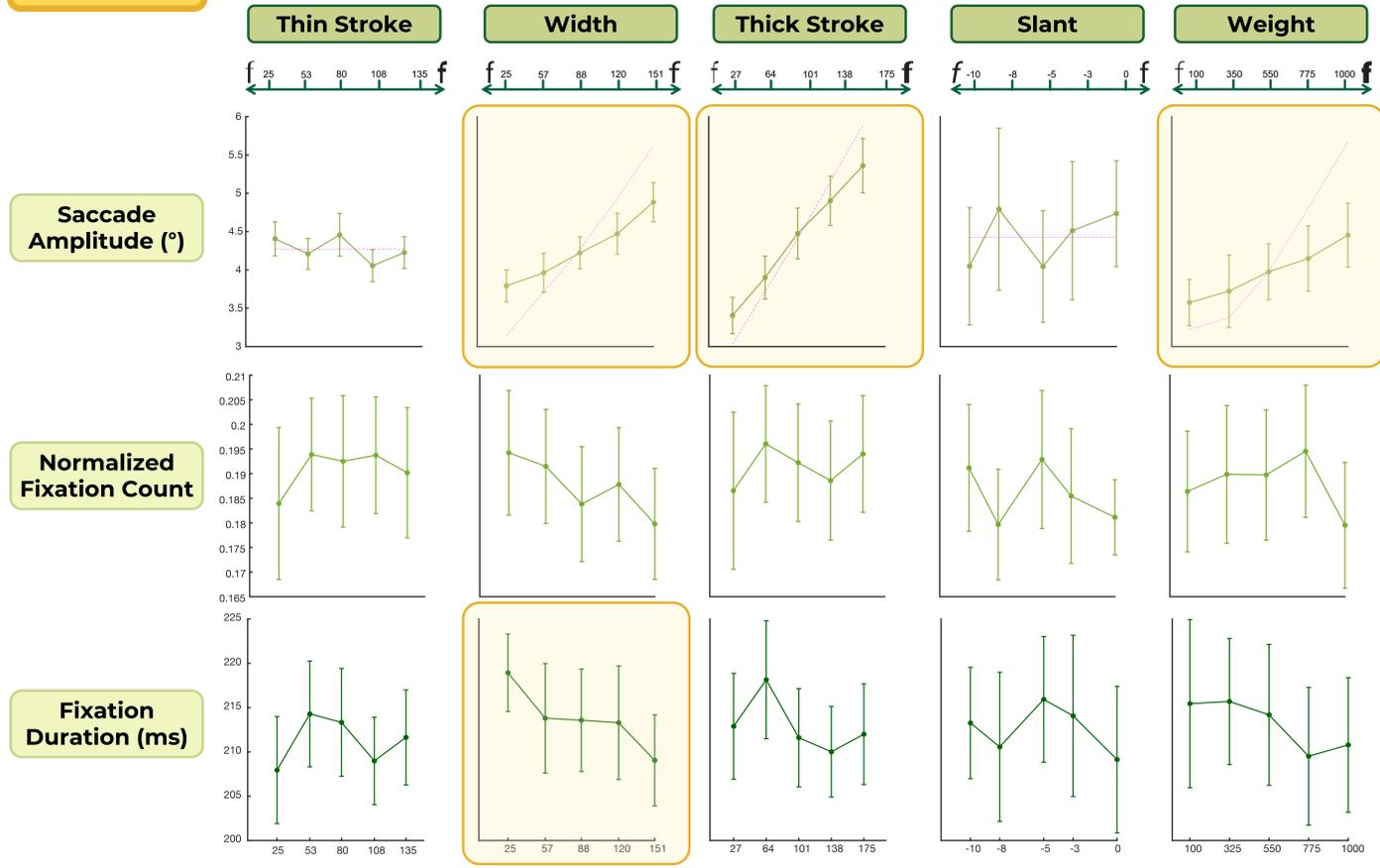
Passages (4 screens)

Questions (5 screens)

x5 Font Axes
x5 Font Settings

x 2 sessions

Results



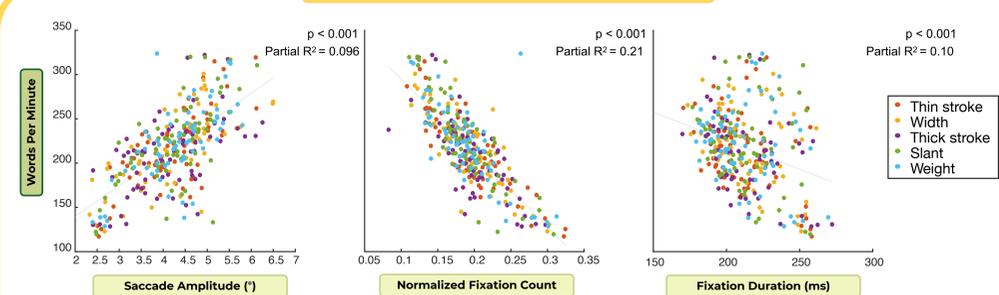
Individuals partially compensate for increased width by increasing saccade amplitude, compensating the most for increases produced by wider thick stroke

Whereas the recognition

The increase in saccade amplitude allows the number of fixations to stay relatively constant as width increases

As width increases, fixation duration decreases

Relationship to Reading Speed



Consistent with previous work^{1,2}, faster reading speeds were associated with increased saccade amplitude, fewer fixations, and shorter fixation durations

Conclusions

- Text manipulations that increase width have the largest impact on gaze metrics.
- Individuals partially compensate for these changes by increasing saccade amplitude and decreasing fixation duration
- Future work will examine how these changes intersect with individual differences, including changes produced by visual impairments and aging

References: [1] Rayner, K. (1978). Eye movements in reading and information processing. *Psychological Bulletin*, 85(3), 618-660. [2] Rayner, K. (1998). Eye movements in reading and information processing: 20 years of research. *Psychological Bulletin*, 124(3), 372-422.

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