The influence of subtle orthographic errors on reading behavior and lexical pro

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INTRODUCTION

- While reading, people get information about the upcoming word which lies in their parafoveal vision.
- There have been studies that demonstrated that if there is an incongruence between the foveal word and the word that lies in the parafovea, this increases the probability of regressions to the target word, thus producing an LPC.
- The Late Positive Complex is a posterior positivity that occurs around 600 ms after stimulus onset. It indexes a repair process after encountering semantic plausibility and plausible prediction violations.
- Metzner et al. (2016) found that the LPC is elicited when readers make a regression and absent when they continue reading past the anomaly.
- The current study looks at the effects of subtle orthographic errors on the relationship between skipping and regressions through the co-registration of eye-tracking and electroencephalogram.
- We will test whether parafoveal or foveal view generates an LPC while the non-DC change cases while we expect to replicate Metzner et al.'s results for the non-display change condition.

REFERENCES

BACKGROUND FIGURES

Figure 1; *Gaze-contingent boundary paradigm*

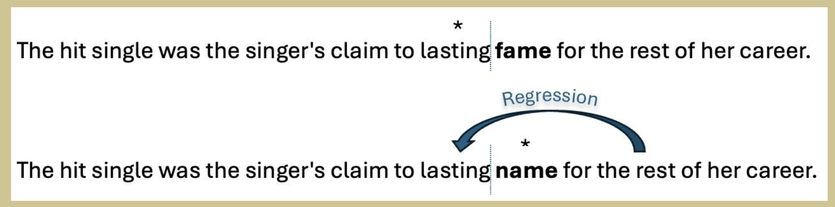


Figure from Metzner et al., 2016; *ERPs depicting natural reading when a regression is made in sentences with a sentence-medial violation*

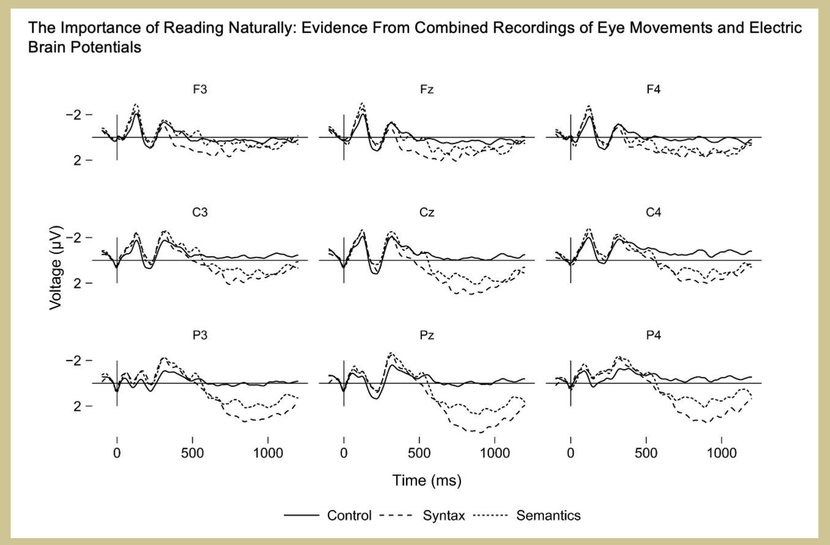
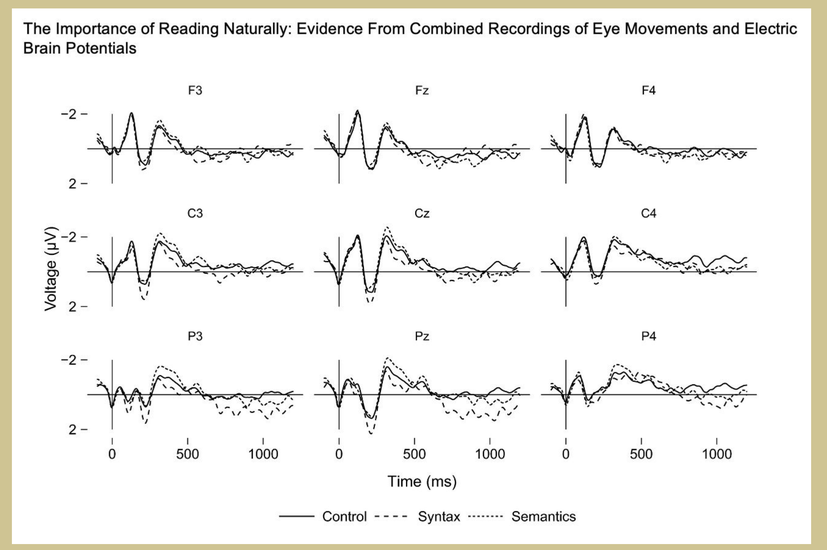


Figure from Metzner et al., 2016; *ERPs depicting natural reading when no egression is made in sentences with a sentence-medial violation*



METHODS AND MATERIALS

Participants

- 60 Participants
- 18-35 years old, right-handed native English speakers betwe normal or corrected-to-normal vision and no history of readir neurological disorders.

Study Design

- Gaze-contingent boundary paradigm
- Coregistration of EEG and eye movements.
- 2 (preview plausibility) x2 (target plausibility) x2 (senten factorial design.
- Target words will be letter transpositions or orthographic neigh two experiments.

ANTICIPATED RESULTS

- We expect to see a more robust LPC if readers perform a regres semantic anomaly compared to when no regression occurs.
- We expect to replicate Metzner et al.'s results for the condition display change does not occur.
- We expect to see a stronger LPC when readers make regressior expected target when the anomalous word is the parafoveal pr
- In turn, we expect readers to make less regressions back to the when the parafoveal preview is an expected word.

DISCUSSION

- If there is a higher LPC amplitude in trials where the parafoveal anomalous but orthographically related to the target word com where the preview is plausible , that would indicate a sensitivit orthographic and semantic features before fixation occurs.
- If this preview also results in a regression, this could indicate th motivate the need to engage in repair processes.
- If readers display a sensitivity to information present in the par better understand the complexities of perceptive systems and understanding of the visual domain in a naturalistic reading env