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Title: If it's hard to read, it changes how long you do it: Reading time as an explanation for perceptual fluency effects on judgment.

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Strand of work: Basic Studies

Abstract:

Perceptual manipulations, such as changes in font type or figure-ground contrast, have been shown to increase judgments of difficulty or effort related to the presented material. Previous theory has suggested that this is the result of changes in online processing or perhaps the post-hoc influence of perceived difficulty recalled at the time of judgment. These two experiments seek to examine by which mechanism (or both) the fluency effect is produced. Results indicate that disfluency does in fact change in situ reading behavior, and this change significantly mediates judgments. Eye movement analyses corroborate this suggestion and observe a difference in how people read a disfluent presentation. These findings support the notion that readers are using perceptual cues in their reading experiences to change how they interact with the material, which in turn produces the observed biases.

Purpose and Questions Investigated, Assessments or Tools developed

The purpose of this set of studies was to investigate the processes underlying students' judgments of difficulty about text materials. In particular, we were interested in the role of online processing and how fonts that are more difficult to process may impact qualitative judgments of difficulty. Previous work has suggested that it is students' affective responses to the disfluent font that impact their judgments, but we tested the hypothesis that it was in fact changes in online reading patterns that impacted these judgments.

Research Context or Methodology

Setting and Participants: UIC subject pool undergraduates

Research Design, Data Collection, and Analysis: Data was collected via computer using E-prime. Eye movement data was collected using an Eyelink II eyetracker. We analyzed data using SPSS. We looked at students judgments of difficulty and average fixation length as a function of font condition (fluent and disfluent). We used regression and mediational analyses.

General statement of findings

Results indicated that disfluency does in fact change in situ reading behavior, and this change significantly mediates judgments. Eye movement analyses corroborated this suggestion and we were able to observe a difference in how people read a disfluent presentation. Specifically, disfluent font took longer to process, as indicated by average

fixation length, and this processing difference mediated the relationship between font condition and judgment of difficulty.

Implications

These findings suggest that readers are using perceptual cues in their reading experiences to change how they interact with the material, which in turn produces observed biases. These results indicate that educators, researchers, textbook writers, etc should consider characteristics like font type when creating learning materials because these characteristics can impact the way students interact with the materials.

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