Typography and individual experience in digital reading: Do readers' eye movements adapt to poor justification?

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Justification as a major typographical variable interacting with reading proficiency (Zachrisson 1965) is less well studied for digital reading – although its often poor implementation in digital media differs from print, thereby currently transforming everyday reading experience. We recorded readers' eye movements (N=40) while they read short narratives (5–10 lines), and manipulated interword spacing with varying degrees of deviation from standard. Participants were surveyed for reading experience (time spent reading, frequency of digital reading, ART), and performed a short reading-speed pre-test. Mixed-models analysis revealed that interword spacing mainly affected saccade planning, as fixation number increased with spacing. Readers also tended to land more on wider spaces, causing shorter mean fixations. Saccade amplitude increased with the distance between words, nevertheless covering fewer characters. As for reading time measures, only first pass time was slightly increased. The frequency of regressions remained unaffected – showing a stable net outcome of different reading processes. Importantly, individual experience in digital reading did not have a measurable impact on this pattern, whereas reading speed was a strong independent predictor. These findings suggest that oculomotor processes are unaffected by prior exposure to digital typography, and that reading proficiency determines reading strategies that are robust against typographical deviations.