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Font matters: efficient adaptation to monospaced vs. proportional fonts is accompanied by effect-size differences for word frequency and predictability

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Monospaced fonts, though technologically obsolete, are present on all computers—and much reading research uses them (Hautala et al. 2011), since their constant letter width (achieved mostly through expansion) equates physical and orthographic length. Paterson and Tinker (1932) indicate that monospaced (opposed to normal, proportional) fonts decrease text reading speed, while Rayner et al. (2010) observe a constant single sentence reading rate.
To consolidate how these font types compare in eye tracking, 32 participants read 112 single sentences orthogonally manipulated for font style (serif typewriter vs. sans-serif Antiqua) and proportionality (monospaced vs. proportional). We analysed the entire sentence and a target word add itionally manipulated for lexical frequency and predictability (each low vs. high).
Linear mixed-model analysis reveals that at the sentence level, monospacing increases the number of fixations, while decreasing the mean fixation duration, resulting in an unchanged total reading time. Mean saccade length in pixels increases, conforming to monospacing's expansion, while saccade length in characters decreases: saccade planning does not wholly compensate the font expansion.
On the target word, monospacing decreases first fixation duration, go-past time, and skipping probability. As before, reading times decrease and fixation density increases, with constant total reading time. Additionally, proportionality interacted with frequency and predictability in reading time measures. The typical fequency effect (low > high) was larger in monospacing, whereas the predictability effect (low > high) was reduced.
Overall, this suggests that a lthough the oculomotor system adapts to monospaced fonts efficiently, generalizing from monospaced to proportional fonts may not be a simple quantitative scaling as regards effect size.

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