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Reading left-to-right and right-to-left orthographies: Ocular prevalence and hemispheric priority for orthographic conventions

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Abstract

We analyse binocular eye-tracking data from multiline Arabic and Hebrew reading. We describe distributions of small temporal asynchronies between the two eyes as each fixation starts and ends. We test the theory, derived from research on left-to-right orthographies, that these asynchronies reflect ocular prevalence for the left eye in the left hemifield and the right eye in the right hemifield. Ocular prevalence means one eye's input is prioritised in the fused binocular percept. The overall pattern of asynchronies in Arabic and Hebrew resembles that seen in the left-to-right orthographies, English and Chinese, but with some very specific differences. We discuss the implications of the hemispheric asymmetry in parafoveal lookahead between the two orthographic directions. We consider orthographic conventions associated with reading direction and we conclude that a language tends to get the orthographic conventions that the reading direction and the hemispheres deserve.