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Supplemental information

Motion perception and eye movements predict reading readiness: Evidence from pre-readers in an action video game task

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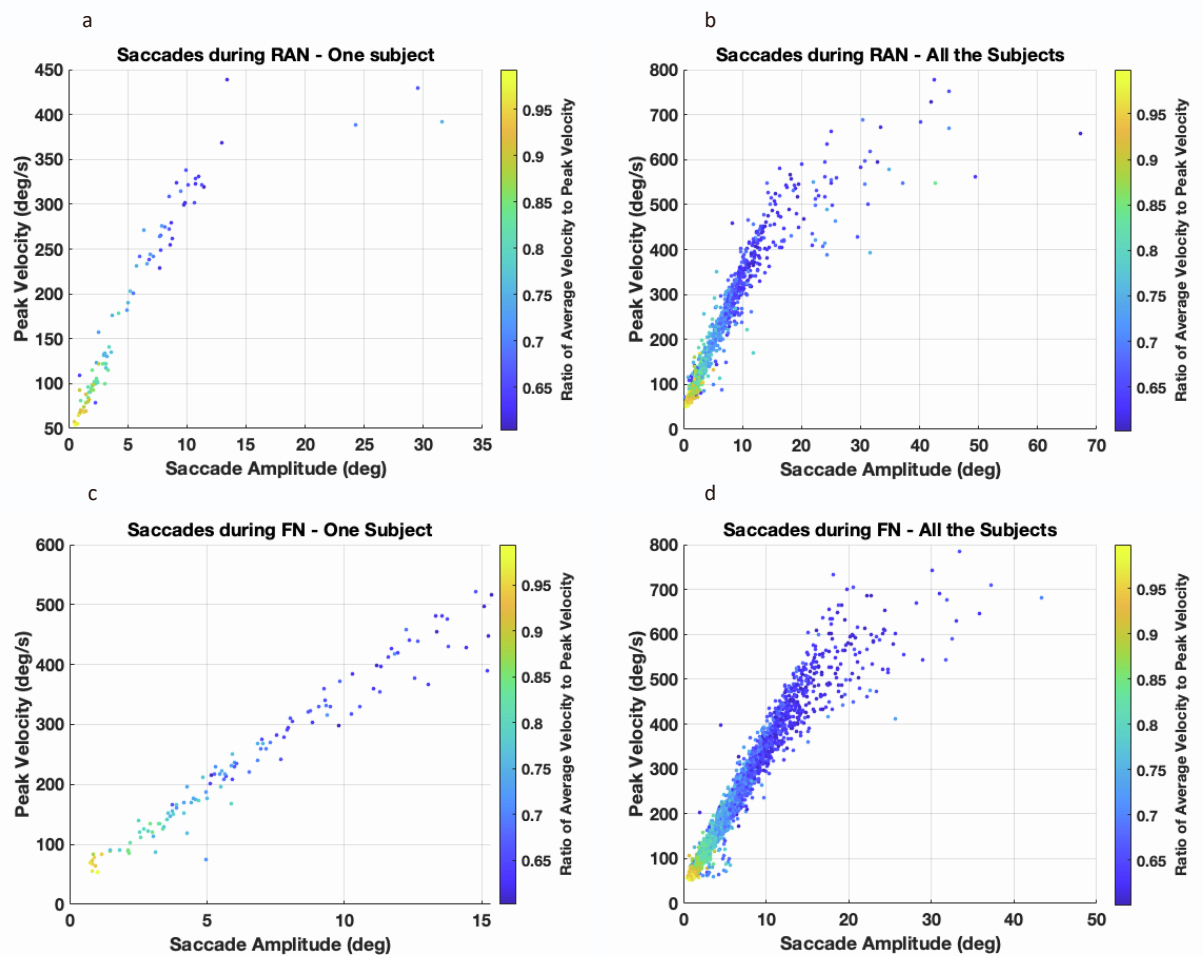

Figure S1. Main sequence plots illustrating the relationship between saccade amplitude (degrees) and peak velocity (degrees/second). (a) Main sequence for a single subject during the RAN test. **(b)** Aggregated main sequence for all participants during the RAN test. **(c)** Main sequence for one subject during FN gameplay. **(d)** Aggregated main sequence for all participants during the FN gameplay. Data points are color-coded based on the ratio of average velocity to peak velocity.

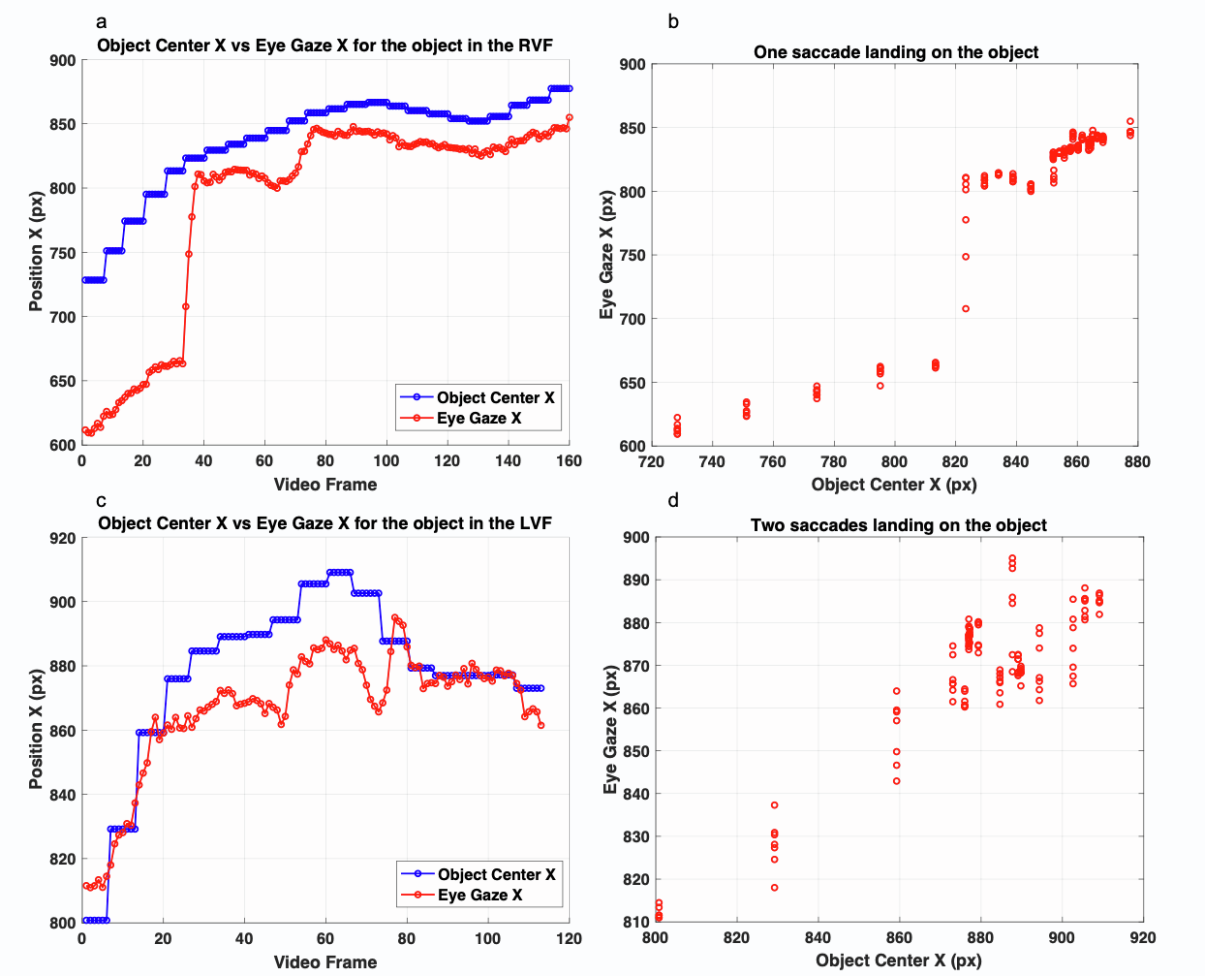

Figure S2. Examples illustrating the appearance and disappearance of objects on the screen, their relative positions to the eye's x-coordinate (left panels), and their corresponding eye-object x-coordinate correlations (right panels). (a) An object appeared in the right visual field (RVF), with the subject making one saccade landing on the object. **(b)** Eye-object x-coordinate correlation for the object in (a). **(c)** An object appeared in the left visual field (LVF), with the subject making two saccades landing on the object. **(d)** Eye-object x-coordinate correlation for the object in (c).

Table S1. Summary of participant demographic characteristics. *Related to STAR Methods.*

Demographic characteristics of the 34 kindergarten children included in this study. Ancestry, race, and ethnicity were not collected as they were not relevant to the research questions.

Characteristic	Value
Sample	
Total participants	N = 34
Age	
Range	4–6 years
Mean (SD)	5.29 years (0.71)
Sex	
Female	18 (53%)
Male	16 (47%)
Handedness	
Right-handed	28 (82%)
Left-handed	5 (15%)
Bilateral	1 (3%)
Language Background	
German (mother tongue)	23 (68%)
Bilingual French–German	11 (32%)
Kindergarten Grade	
Grade 1	12 (35%)
Grade 2	22 (65%)
Family History of Dyslexia (parent-reported)	
No family history	26 (76%)
Positive family history	4 (12%)
Unsure	4 (12%)
Ethics	
Ethics approval	BASEC, University of Fribourg (No. 2023-00226)
Informed consent	Written parental consent + verbal child assent

Note: *The influence of sex on the study results was not systematically assessed due to the small sample size, which represents a limitation to the generalizability of the findings.*