



HAL
open science

Competition between form-related words in bilingual sentence reading: Effects of language proficiency

Maud Péliissier, Dag Haugland, Bjørn Handeland, Beatrice Zitong Urland, Allison Wetterlin, Linda Wheeldon, Steven Frisson

► To cite this version:

Maud Péliissier, Dag Haugland, Bjørn Handeland, Beatrice Zitong Urland, Allison Wetterlin, et al.. Competition between form-related words in bilingual sentence reading: Effects of language proficiency. Architectures and Mechanisms for Language Processing (AMLaP), Sep 2022, York, United Kingdom. , 2023. hal-04066339

HAL Id: hal-04066339

<https://u-paris.hal.science/hal-04066339v1>

Submitted on 12 Apr 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Bilinguals are affected by form-related priming when reading sentences in L2.

Competition between form-related words in bilingual sentence reading: Effects of language proficiency.

M. Pélissier¹, D. Haugland², B. Handeland², B. Zitong Urland², A. Wetterlin², L. Wheeldon², and S. Frisson³

¹Université Paris Cité, ²University of Agder, ³University of Birmingham

BACKGROUND

- Form-related priming leads to inhibitory effects in monolingual sentence reading (Paterson et al., 2009).
- These effects are affected by the distance between prime and target and by reading skills (Frisson et al., 2014).
- We extended this to bilinguals.

METHODS

48 Norwegian-English bilinguals (advanced)

128 sentence pairs with form-related or unrelated prime, manipulating target-prime distance and overlap

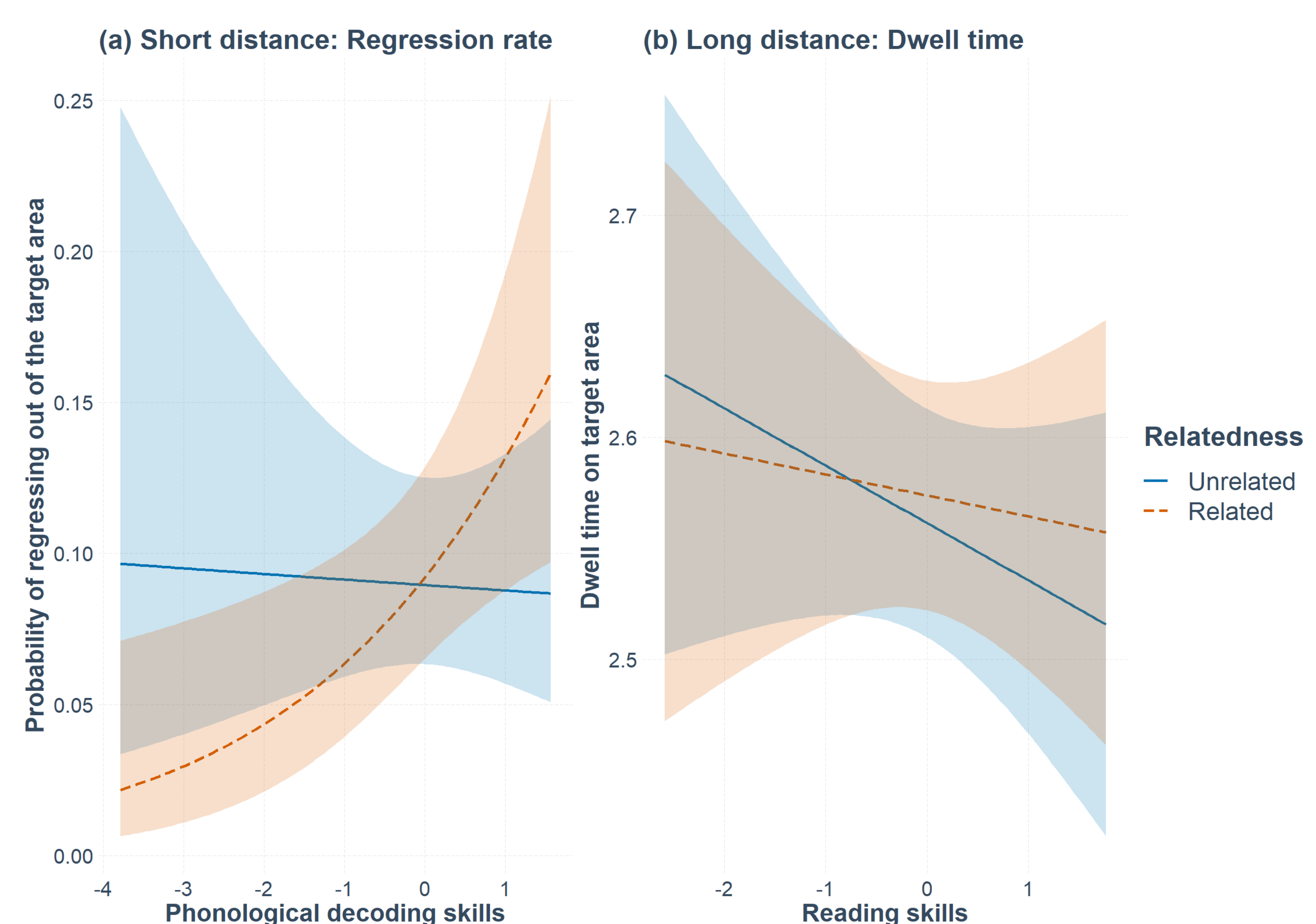
Short – End	The scary house was brown [blue] with a golden CROWN painted over the door.
Short – Begin	He counted up to seven [eight] knights that could SEVER the dragon's head.
Long – End	The alarm had a red patch [stamp] that I noticed far too late after opening the HATCH to the cellar of the house.
Long – Begin	Drinking the old paint [juice] caused Leif to experience lasting and severe stomach PAINS and he was rushed to the hospital.

Eye-tracking while reading + proficiency measures

Reading skills ¹ (RS)	British Vocabulary Picture Scale 3 (Dunn et al., 1982)
	York Assessment of Reading for Comprehension (Snowling et al., 2009)
	Sentence acceptability judgment
Phonological decoding skills (PS)	Gray Silent Reading test (Wiederholt & Blalock, 2000)
	Non-word repetition test
	Elision test

¹ Classification in 2 components obtained by PCA. Cumulative variance explained with two components: 0.71.

Reading skills and phonological decoding skills affect priming effects in L2 reading.



RESULTS

- L2 readers are affected by **form-related priming**.
- In short-distance condition, better phonological decoders show **earlier effects** (regression rate out of target area, PS x relatedness: $\beta = 0.42$, 95% CI [0.14; 0.70], $p = .004$)
- Only **good readers** show effects in long-distance condition (dwell time in target area, RS x relatedness: $\beta = 0.02$, 95% CI [0.001; 0.031], $p = .03$; regression out of spillover area: relatedness x RS x overlap, $\beta = 0.56$, 95% CI [0.029; 1.10], $p = .04$).

DISCUSSION

- Replication of monolingual results: **form-related priming in sentence reading is a robust effect**.
- Explained by competition models as **competition** between word candidates.
- The effect is influenced by **reading skills**, but **phonological skills** are also crucial.

REFERENCES & ACKNOWLEDGMENTS

Dunn, L. M., Dunn, L. M. & Whetton, C. (1982). *The British Picture Vocabulary Scale*. NFER-Nelson
 Frisson, S., Koole, H., Hughes, L., Olson, A. & Wheeldon, L. (2014). Competition between orthographically and phonologically similar words during sentence reading: Evidence from eye movements. *Journal of Memory and Language* 73(1), 148–173. doi: 10.1016/j.jml.2014.03.004
 Paterson, K. B., Liversedge, S. P. & Davis, C. J. (2009). Inhibitory neighbor priming effects in eye movements during reading. *Psychonomic Bulletin and Review* 16(1), 43–50. doi: 10.3758/PBR.16.1.43
 Snowling, M. J., Stothard, S., Clarke, P., Bowyer-Crane, C., Harrington, A., Truelove, E., Nation, K. & Hulme, C. (2009). YARC York Assessment of Reading for Comprehension. GL Publishers. <https://www.worldcat.org/title/york-assessment-of-reading-for-comprehension-complete-set/oclc/873011477>
 Wiederholt, J. & Blalock, G. (2000). GSRT: Gray Silent Reading Tests. PROED Inc. <https://www.proedinc.com/Products/9190/gsr-gray-silent-reading-tests.aspx?bCategory=lralread>

This study was funded by the University of Agder.



Take a picture to download the full paper

