

Differential performance in a non-word repetition task in adult speakers of Danish and Norwegian

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INTRODUCTION

- Lexical entries are phonologically underspecified in the mental lexicon [1]
- Underspecification is a tool used to account for variability in speech [2]
- Non-word repetition can measure specification in phonological encoding [3]

Do speakers of different languages encode lexical items at different levels of specification?

METHOD

- Non-word Repetition Task, N = 81 Danes, N = 87 Norwegians
- 24 x PseudoDanish non-words, 24 x PseudoNorwegian non-words
- Same orthography, Danish vs. Norwegian phonology

3 syllables	4 syllables	5 syllables	6 syllables
bal.slaks.stok	brat.maj.stæl.æk	bob.bur.bæk.nu.hæs	bur.mis.pår.kår.kak.lis
dam.var.dri	dak.lil.jep.nor	di.ham.fast.dråm.sæt	dit.ras.blår.djon.hækt.li
gæn.flok.fi	gør.væk.sæn.ibs	gam.tæn.skå.post.fælt	gi.gårt.ram.dårms.gå.væl
lå.mar.sæl	løk.væs.stæm.gam	lad.tu.tal.hyt.mær	lårt.mas.øs.dæm.li.sæt
mårt.klårs.ni	mu.kla.rajk.pas	me.laj.rån.ka.fæst	mæn.smal.mit.hæ.dræ.dil
sis.nær.måns	skul.brågt.gå.nå	su.dit.bæn.krå.mu	så.hør.par.tis.kaj.tæl

- Control pseudolanguage: PseudoEnglish, 2-, 3-, 4-, 7-syllables, from [4]

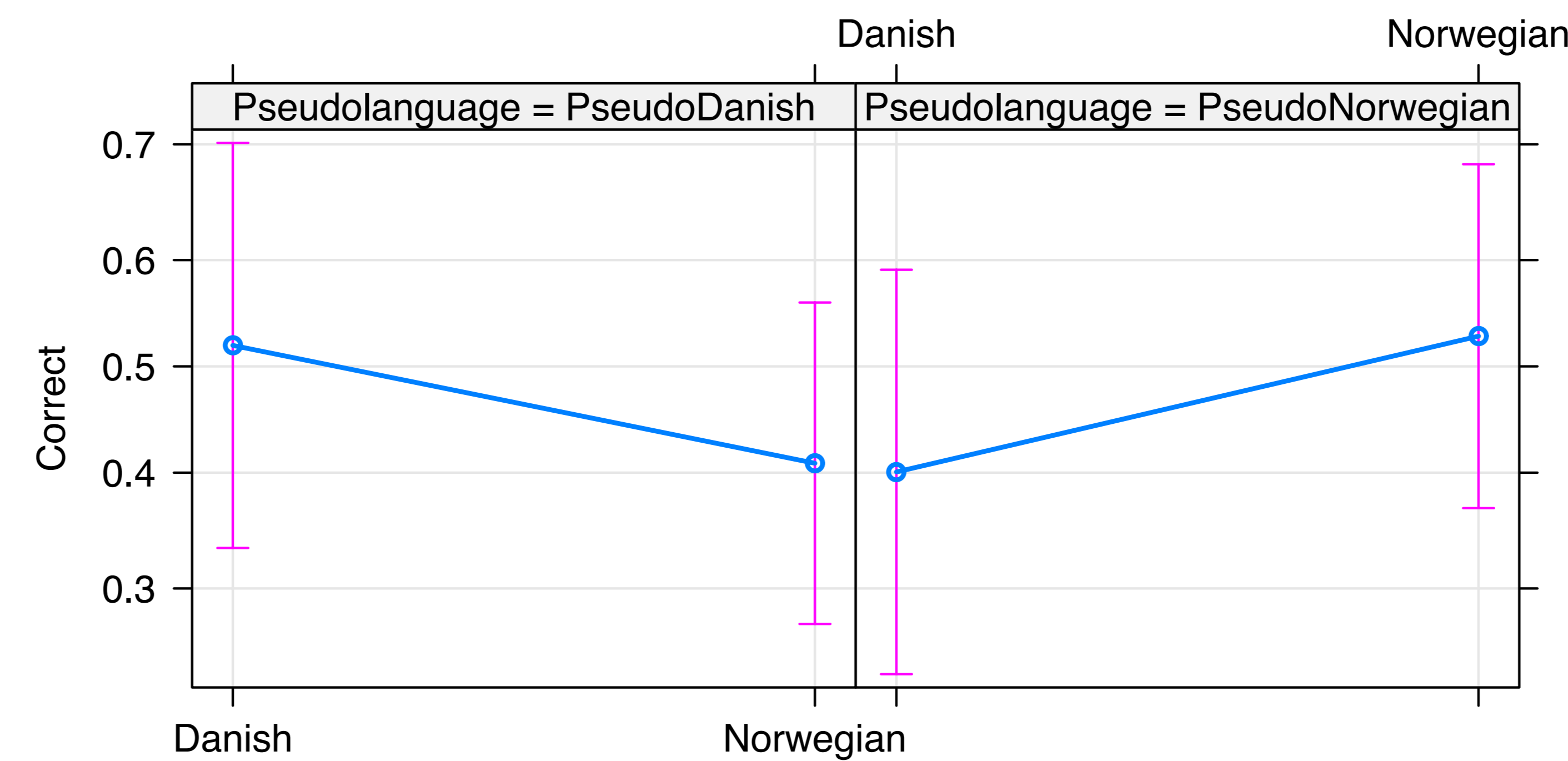
RESULTS

- Double dissociation in Native language × Pseudolanguage
- Similar within-group variation (Danish $\tau_{00} = 0.73$, Norwegian $\tau_{00} = 0.85$)
- High inter-rater reliability (Transcriber $\tau_{00} = 0.08$)
- Danish more robust with few syllables, Norwegian with many ($\beta = 1.52$)
- Edit distance is consistently higher in Danish for long words ($\beta = -.06$)
- No effect on insertions and deletions, effect on substitutions ($\beta = -.08$)
- Same effect on PseudoEnglish ($\beta = 1.68$)

CONCLUSION

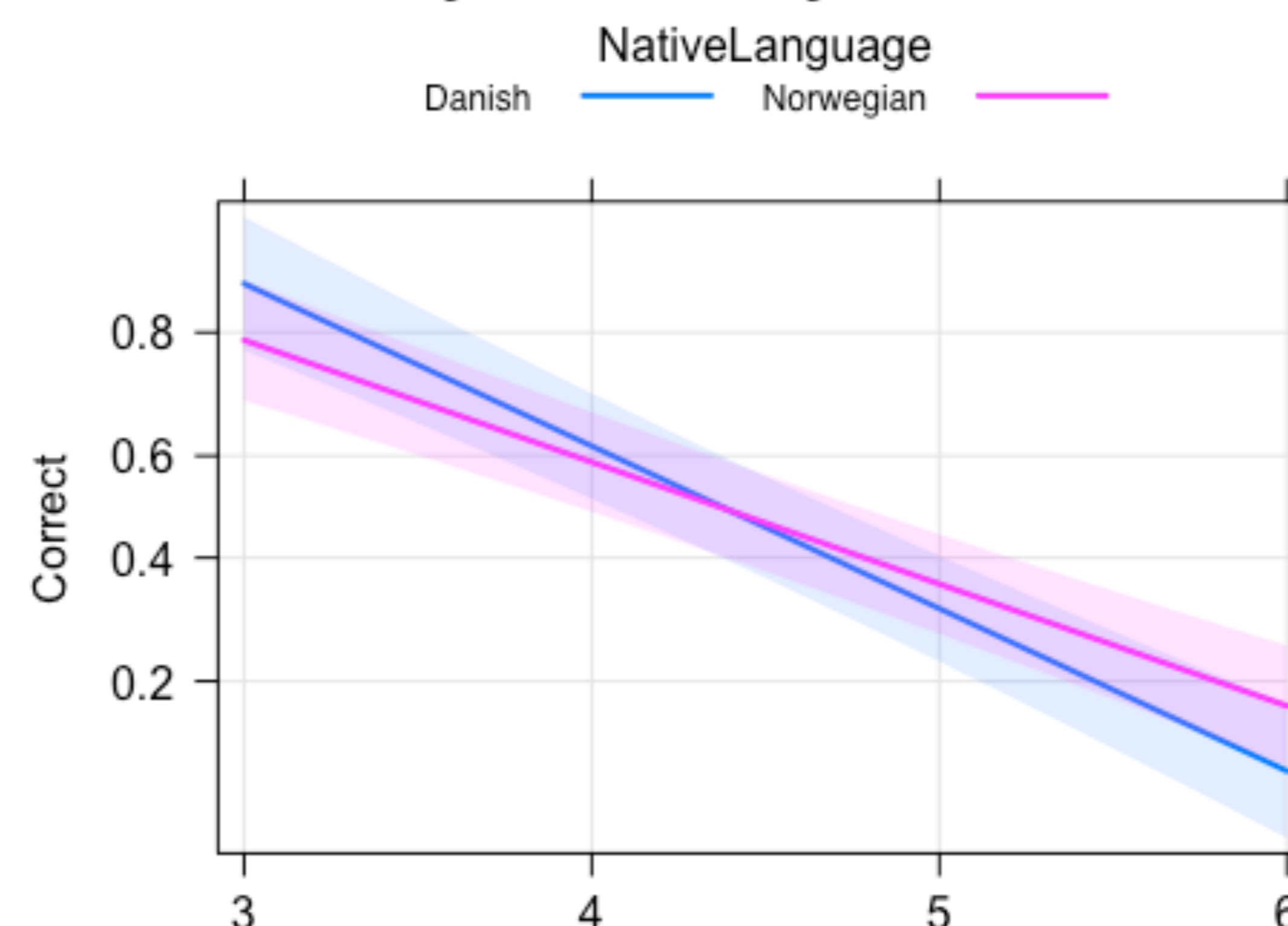
- Languages with different structural properties afford encoding at different levels of phonological specification? [5]

Proportion of correct repetitions



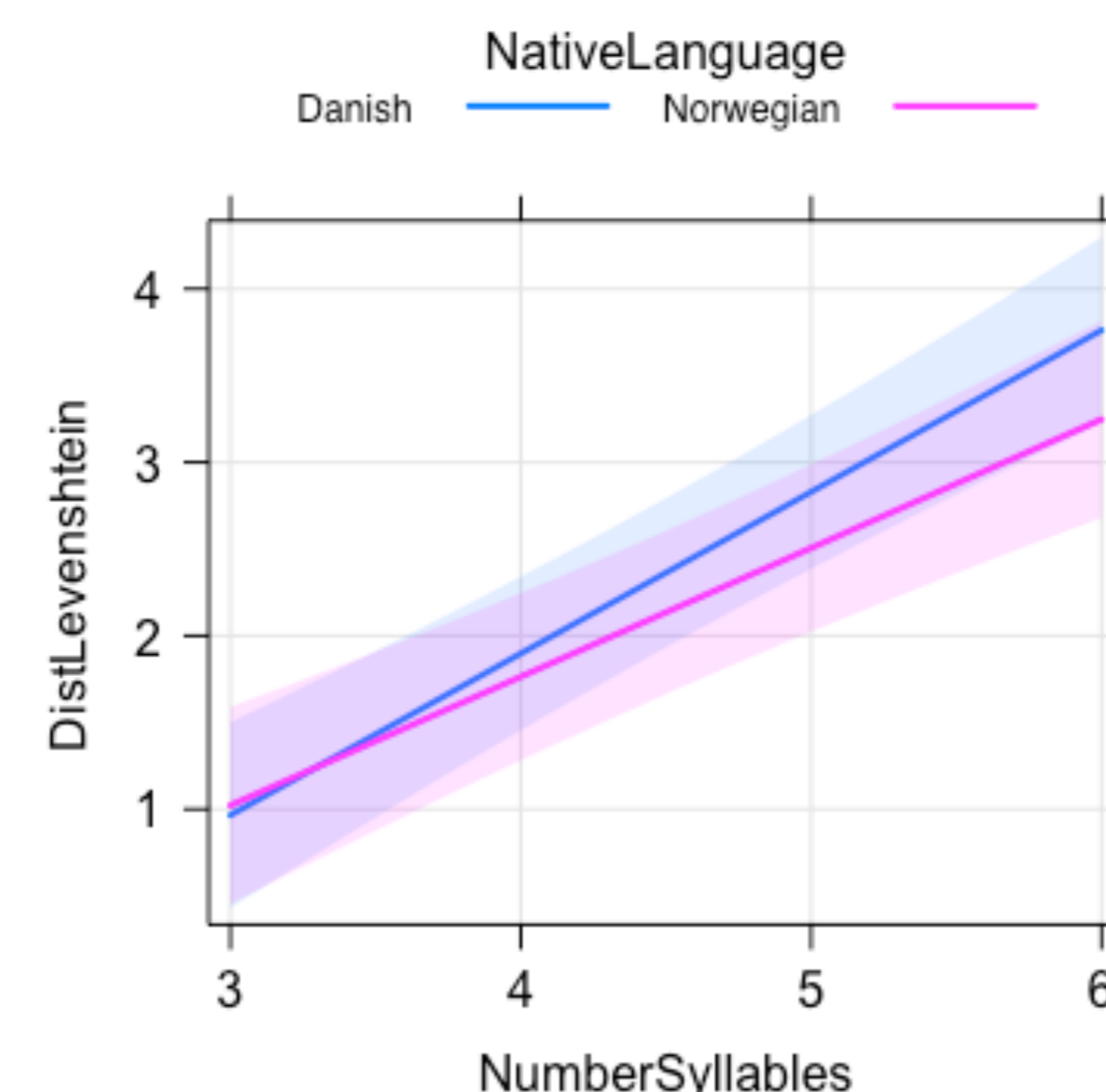
Predictors	OR	CI	p
(Intercept)	1.08	0.50 – 2.35	.839
Native Language [Norwegian]	0.64	0.35 – 1.16	.141
Pseudolanguage [PseudoNorwegian]	0.62	0.23 – 1.68	.344
Native Language [Norwegian] × Pseudolanguage [PseudoNorwegian]	2.63	1.58 – 4.39	< 0.001

By number of syllables

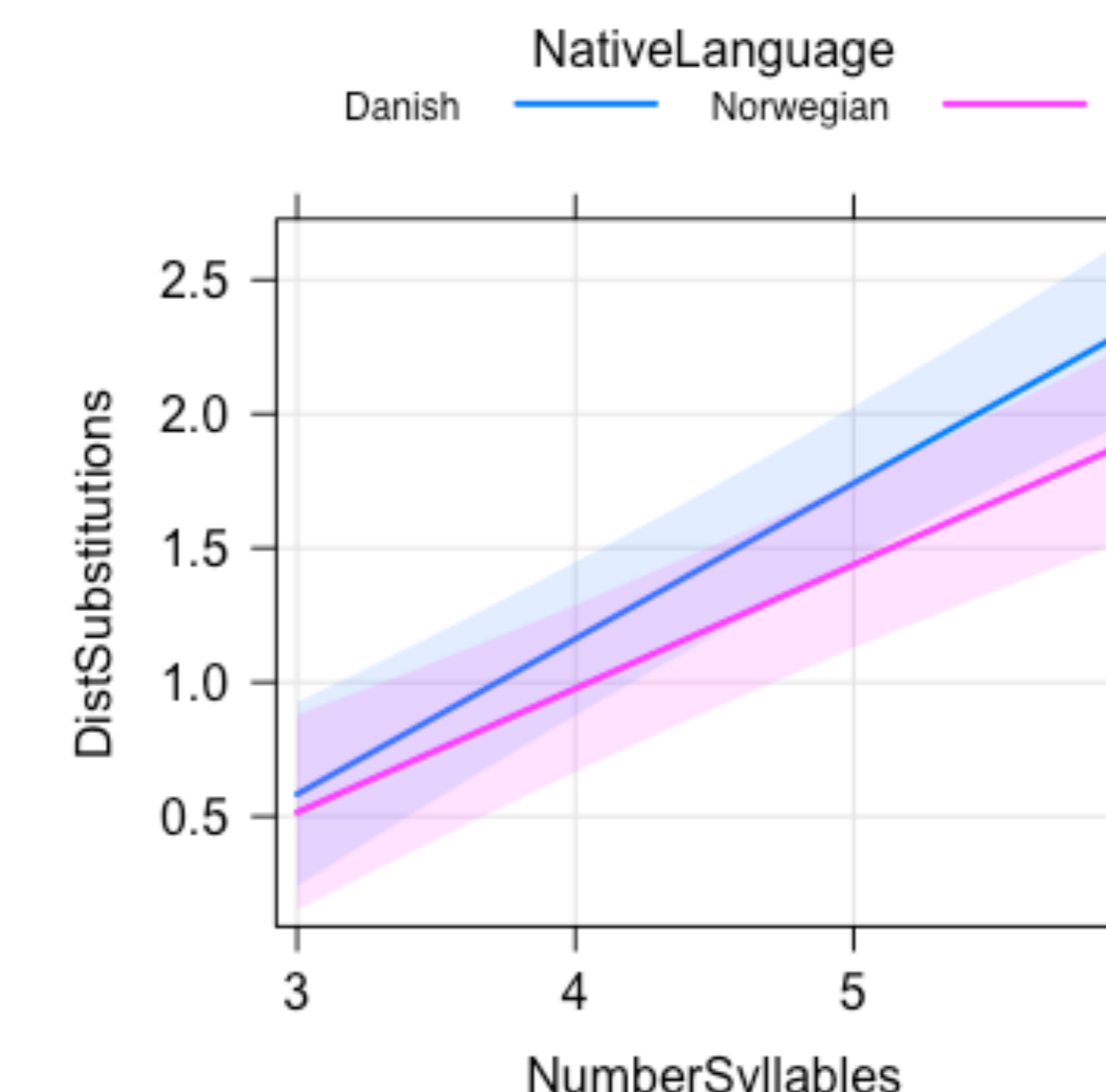


Predictors	OR	CI	p
(Intercept)	363.88	82.50 – 1604.97	< 0.001
Native Language [Norwegian]	0.12	0.03 – 0.42	.001
Pseudolanguage [PseudoNorwegian]	0.61	0.07 – 5.07	.645
Number Syllables	0.27	0.20 – 0.38	< 0.001
Native Language [Norwegian] × Pseudolanguage [PseudoNorwegian]	4.25	0.69 – 25.94	.117
Native Language [Norwegian] × Number Syllables	1.45	1.13 – 1.88	.004
Pseudolanguage [PseudoNorwegian] × Number Syllables	1.00	0.63 – 1.58	.995
(Native Language [Norwegian] × Pseudolanguage [PseudoNorwegian]) × Number Syllables	0.90	0.61 – 1.33	.599

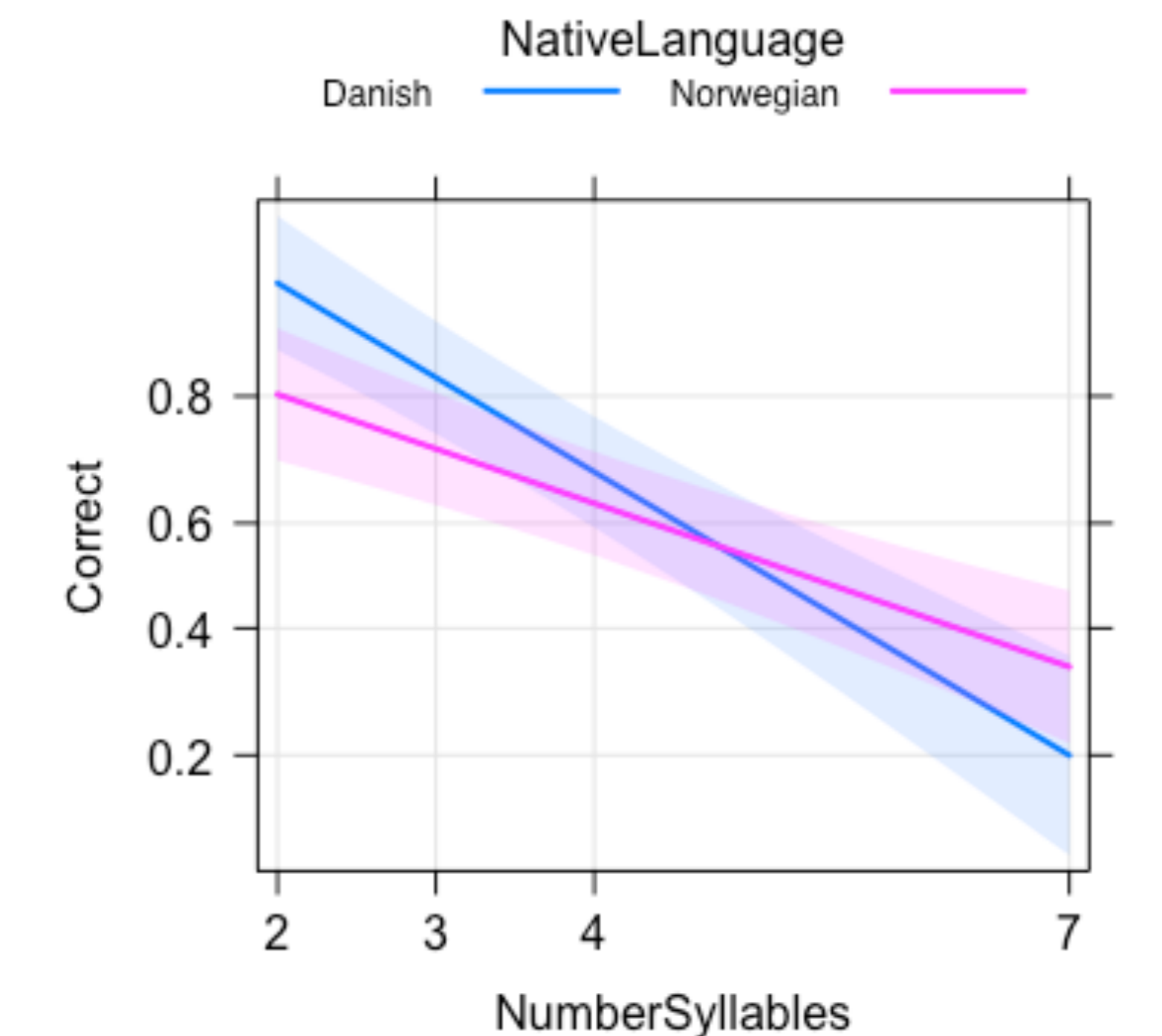
Edit distance



Substitutions



PseudoEnglish



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- [3] Bowey, J. A. (2006). Clarifying the phonological processing account of nonword repetition. *Applied Psycholinguistics*, 27(4), 548–552.
- [4] Byrd, C. T., Vally, M., Anderson, J. D., & Sussman, H. (2012). Nonword repetition and phoneme elision in adults who do and do not stutter. *Journal of Fluency Disorders*, 37(3), 188–201.
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