

Pertinacious influence of native metrical parameters on affixed Romance loans in German & English: diachronic and synchronic experimental evidence



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Metrical Systems

English and German have always been resolutely *trochaic*. However, the modern metrical systems are not identical: Native cognates are invariably stressed on the *initial syllable*, but Romance loans were accommodated differently, borrowed from different sources and at different times.

Old English disallowed long vowels in final syllables, unlike Old High German, where they could attract secondary stress:

OE *monap*, *cild-læs* | OHG *mānōd*, *kinde-lōs* ('month', 'childless')

German: Loans could fit into the native system with final -VVC syllables.
English: *Constrained loan adaptation*, preventing final -VVCs.

Middle/Early Modern English	Modern English	Middle/Early Modern German	Modern German
faisant	phéasant	fasān	Fasán
pirat(e)	pírate	pirāte	Pirát
routen	róut	rottieren	rottíer[ə]n
credit	crédit	Credit	Kredít
pilot	pílot	Pilot	Pilót
construction	constrúction	Construction	Konstruktión

Stress Assignment

GERMAN

- Romance loans threaten L→R parsing — gradual shift to right edge begins.
- ($\acute{\sigma}$)($\acute{\sigma}$) may easily become ($\grave{\sigma}$)($\acute{\sigma}$) in loans with final overlong syllables.
- Once established, non-initial stress pattern could be extended.
- C17th**: stress-attracting suffixes firmly established and loans with final -VVC regularly bear stress.

ENGLISH

- Final syllables didn't attract stress.
- Ultimately causes reanalysis with syllable extrametricality (impossible in German).
- Mediaeval period: little change and loans adapted to the native system.
- C16th**→: gradual shift to the right edge with growing number of words with stress-attracting suffixes, e.g. *-ation*.

Complex words are borrowed as simplex

Derived words are often borrowed first, with morphological relationships only established later (Lahiri & Fikkert, 1999).

Stress & Vowel Alternations

Such borrowing introduced stressed vowel alternations into derivational paradigms:

- sane* ~ *sanity*: [eɪ] ~ [æ]

This contrasts with native items (with transparent phonological relationships):

- happy* ~ *happiness*: [æ] ~ [æ]

These alternations ultimately affect stress assignment and derived words in English may thus vary in respect to:

- Vowel quantity
- Stress placement

To what extent do first-language (L1) metrical patterns impact the processing of loans in an L2?



L1 = German L2 = English

Experimental Study

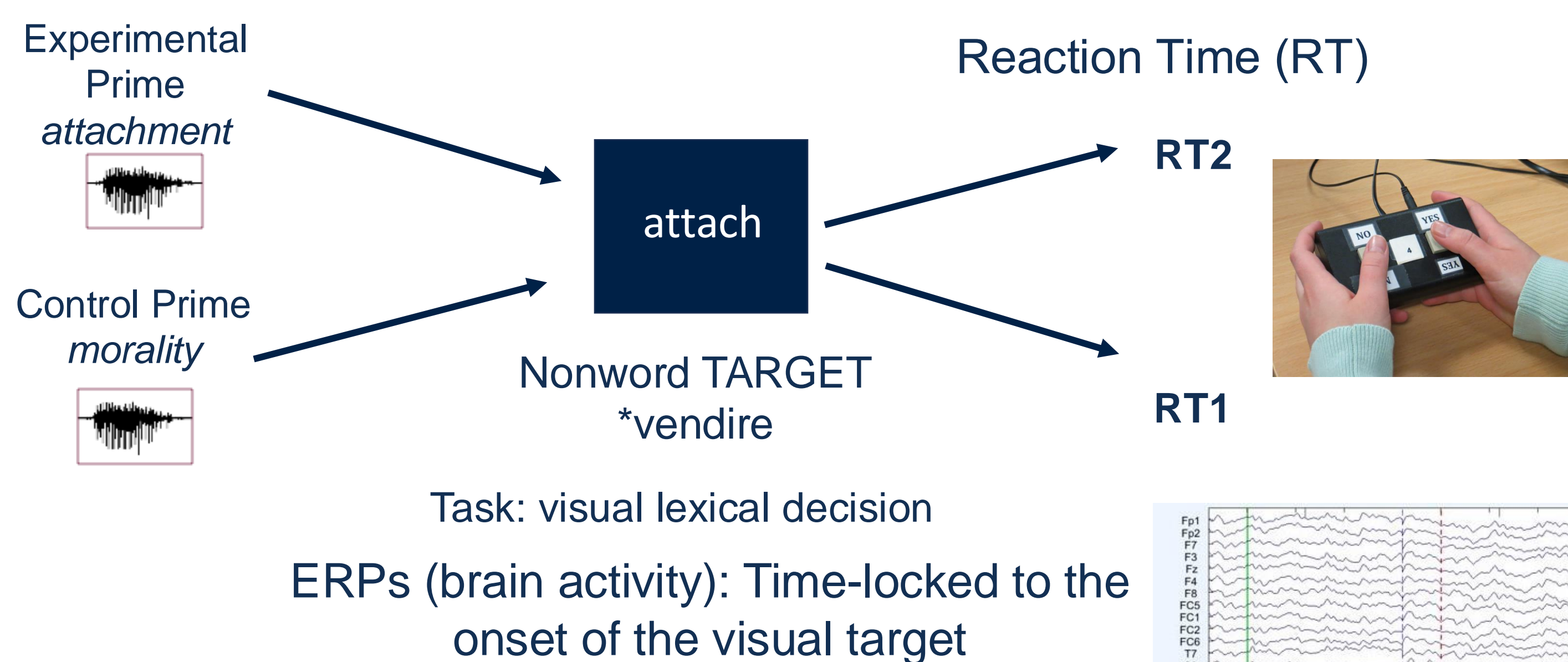
- Priming study conducted with German native speakers who were highly proficient in English (tested in Munich).
- We measured participants' brain activity as well as reaction times.

	Stress	Vowel	Target Base / Stem	Experimental Prime	Phonological processes
(i)	+	+	<i>attach</i> [ə'tatʃ]	<i>attachment</i> [ə'tatʃmənt]	stem unchanged in suffixed form
(ii)	-	+	<i>humid</i> ['hju:mɪd]	<i>humidity</i> [hju'mɪdɪti]	stress shifts to the right, underlying vowel unchanged
(iii)	+	-	<i>divine</i> [dɪ'vaɪn]	<i>divinity</i> [dɪ'vɪnɪti]	stressed vowel undergoes trisyllabic shortening
(iv)	-	-	<i>reside</i> [rɪ'zɪd]	<i>residence</i> ['rezɪdəns]	stress shifts to the left and original stressed vowel changes

Methodology

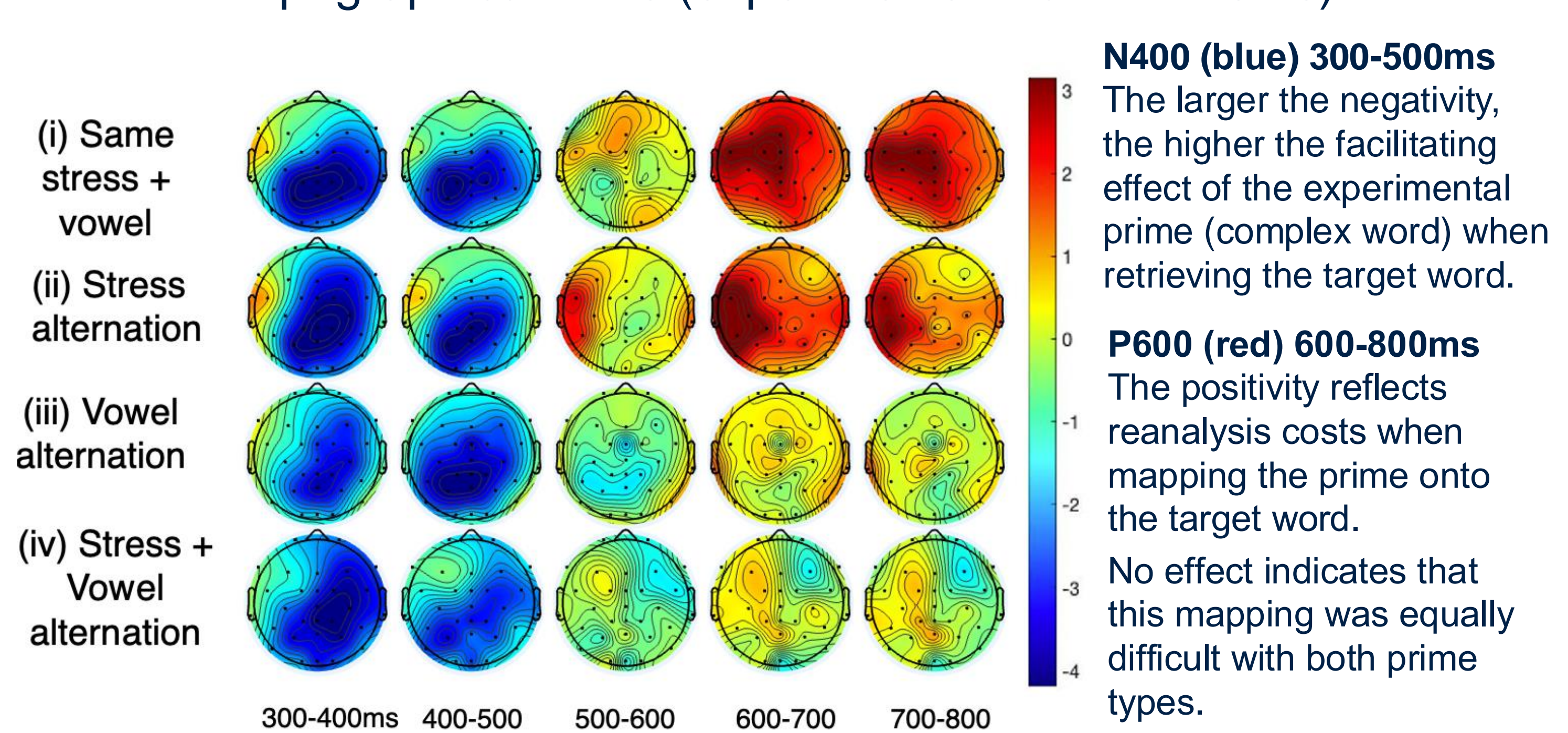
Priming Study

PRIME: Spoken complex word presented before the target
TARGET: Base related/unrelated to the PRIME

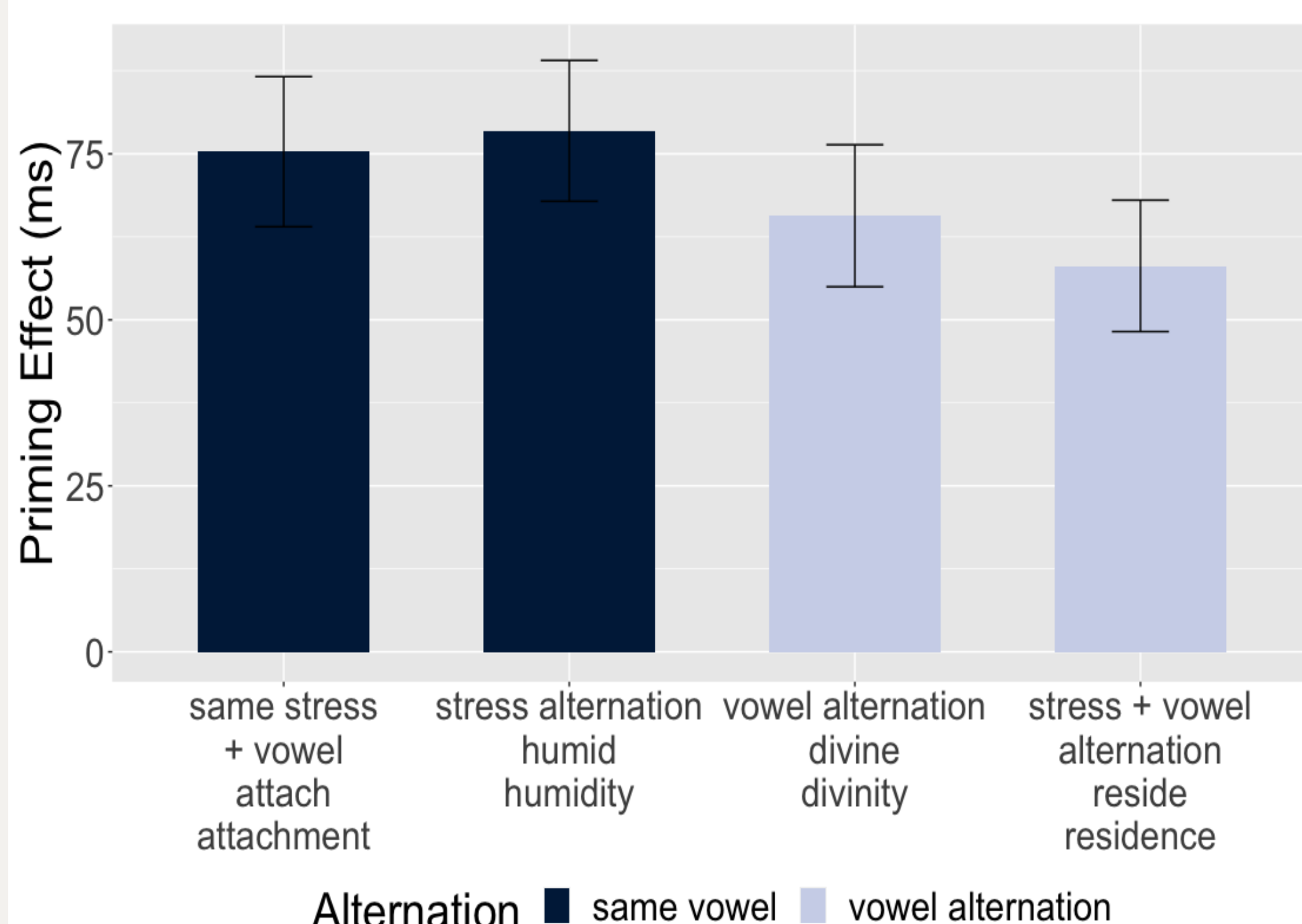


Results (ERPs)

Topographical Plots (experimental – control items)



Results (behavioural)



Discussion

- The N400 effect indicating lexical retrieval is remarkably similar across all conditions
- Brain responses in a later time-window (P600) and RT data show that German L1 speakers process words with *vowel alternations* differently from *stress alternations* which are also present in German in similar loans (e.g. *aktiv* [ak'ti:f] ~ *Aktivität* [aktivi'tɛ:t]).

TAKE HOME MESSAGE

- The native phonological grammar impacts word processing even in highly proficient L2 speakers.
- Learners do not have knowledge of a language's history; however, grammars are pertinacious and past developments leave their mark on the synchronic system in *systematic* ways, which must be processed by the synchronic speaker.