

Introduction

L1 attrition is a natural by-product of a dominant L2 (cf. Schmid & Köpke 2007) but has only recently been seen as such and thus systematic investigations are still comparatively rare.

- Permanent erosion of L1 system unlikely once fully acquired (cf. Montrul 2008)
- Evidence for processing differences between active native speakers and those in L1 attrition:
 - slower lexical access & lexical retrieval difficulties (e.g. Baus et al. 2013)
 - phonological and phonetic changes (e.g. Bergman et al. 2016)
 - changes in processing of number agreement violations (e.g. Kasparian et al. 2017)

Morphological processing:

- Mounting evidence for a structure-driven morphological processing mechanism in L1
- Native processing of morphologically complex items shows sensitivity to internal structure (cf. Meinzer et al. 2009; Schuster & Lahiri 2018 among others)
- L2 speakers show greater reliance on morpho-orthographic overlap & more shallow processing (cf. for example Heyer & Clahsen 2015).
- However, evidence for procedural mechanisms in L2 processing (e.g. Pliatsikas & Marinis 2013) has also been found
- Effects of L1 attrition on morphological processing have remained largely unexplored.

Research Questions

Methodological questions:

1. Do native speakers who are immersed in an L2-environment show comparable patterns of results in experimental tasks investigating morphological processing?

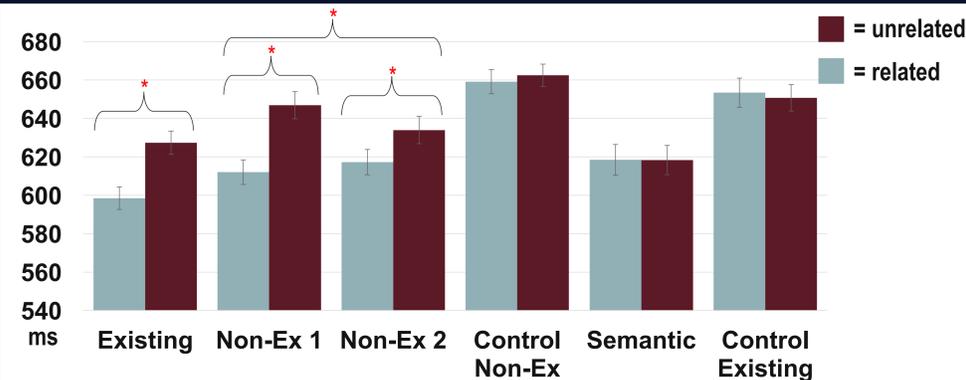
Theoretical questions

2. To what extent does a dominant L2 and the concomitant decrease in exposure to the L1 result in differences in morphological processing?
3. Is there a change in the degree of sensitivity to structure in L1 attrition speakers?

Predictions

1. Since L1 attriters are bilingual, slower RTs and higher error rates are expected.
2. The attrition group may show greater uncertainty in their lexical decision responses, especially to plausible non-existing items (e.g. *Spitzung) if they are legitimately suffixed.
3. If morphological processing is affected, L1 attriters may show no facilitation for non-existing conditions or, if their processing relies more strongly on declarative knowledge, they may show effects of form priming (as has been shown in L2 speakers).

Results Native Group



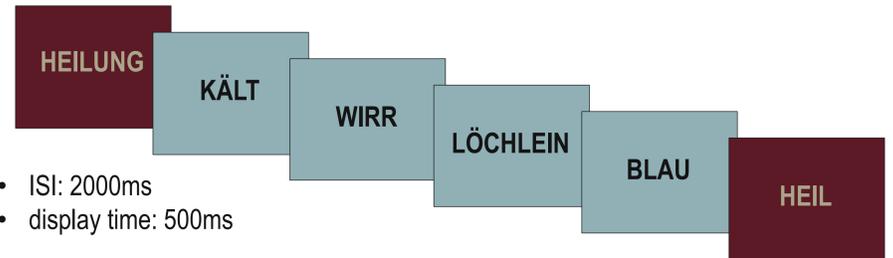
- Priming in all morphological conditions: 'Existing', 'NonEx1', 'NonEx2'
- Significantly more priming in condition 'NonEx1' with a lexicalised intermediate position than in condition 'NonEx2'

Key Findings

- (a) No evidence for slower processing (overall RTs similar: L1: 632ms vs. L1(L2): 620ms)
- (b) No evidence for difference in error rates to existing and non-existing complex words
- (c) L1 data shows graded sensitivity to internal structure and derivational chains while L1 attrition data shows no such differences in the degree of facilitation:
 - **L1 group:** NonEx1 > NonEx2
 - **Attrition group:** Ex = NonEx1 = NonEx2
- (d) L1 attrition group does not show form priming as such but shows significant priming in the control condition where legitimate suffixes are attached illegally to existing stems (e.g. *wirr*-**Wirrlein*).

Experiment Design

- Visual delayed priming task (cf. Drews & Zwitserlood 1995) with German morphologically complex items
- 5-7 items between prime and target
- participants respond to all items (pure LD task)



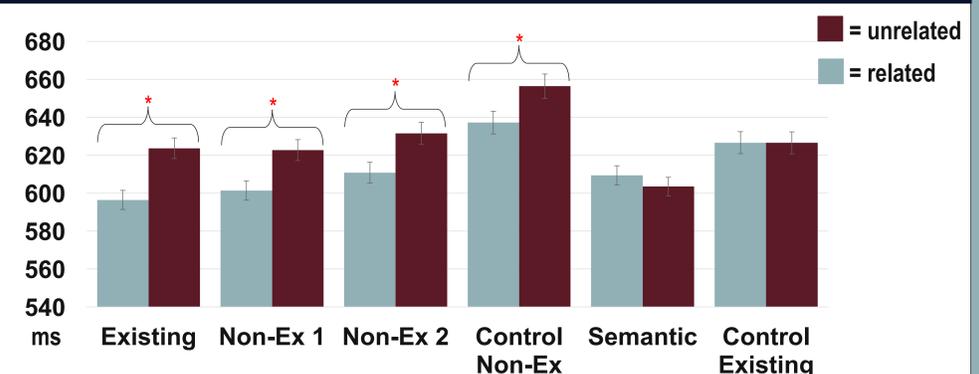
Stimuli and Participants

Condition	Prime (noun)	Target (adjective)
Existing (n = 24)	Heilung 'healing'	HEIL 'whole/unhurt'
	heil 'whole' - heilen 'to heal' - Heilung 'healing'	
Non-existing 1 (n = 24)	*Spitzung	SPITZ 'sharp'
	spitz 'sharp' - spitzen 'to sharpen' - *Spitzung	
Non-existing 2 (n = 24)	*Hübschung	HÜBSCH 'pretty'
	hübsch 'pretty' - *hübschen - *Hübschung	
Control Non-Ex (n = 24)	*Wirrlein	WIRR 'confused'
Semantic (n = 24)	Blödheit 'stupidity'	dumm 'stupid'
Control Existing (n = 24)	Täublein 'little dove'	TAUB 'deaf'

Participants

- 34 adult native speakers of German recorded in Frankfurt, Germany
- 32 adult native speakers of German with English as a dominant L2 recorded in Oxford
 - LoR: 7.9 years (range: 2 – 42 years)
 - Use of L1: 14% (range: 0.5 – 35%)
 - L2 proficiency: all participants are working in English-dominant jobs or studying for post-graduate degrees in the UK

Results Attrition Group



- Priming in all morphological conditions: 'Existing', 'NonEx1', 'NonEx2', as well as in Condition 'Control NonEx' where the stem + suffix combination is illegal
- No differences in priming between 'NonEx1' and 'NonEx2'
⇒ no evidence for sensitivity to the internal structure of the derivational chain

Discussion

Based on an analysis of overall RTs and error rates, L1 attriters do not perform differently from the L1 group. However, differences become apparent in the structural analysis applied to the processing of morphological complexity.

Shallow affix-stripping approach:

- It seems that L2 attriters employ a shallower affix stripping process where any legitimate affix is stripped and the stem is accessed thus resulting in facilitation.
- This does not seem to apply to existing items (e.g. *Täublein* – *taub*).

Methodological implications:

- Data obtained from L2 dominant speakers with low rates of L1 use cannot confidently be used to make claims about native processing.

Contact

<http://brainlab.clp.ox.ac.uk>
sandra.kotzor
@ling-phil.ox.ac.uk
swetlana.schuster
@ling-phil.ox.ac.uk

Selected References

Baus, C., Costa, A. & Carreiras, M. (2013). On the effects of second language immersion on first language production. *Acta Psychol* 142, 402–409. Bergmann, C., Nota, A., Sprenger, S. A. & Schmid, M. S. (2016). L2 immersion causes non-native-like L1 pronunciation in German attriters. *J Phonetics* 58, 71–89. Drews, E. & Zwitserlood, P. (1995). Morphological and orthographic similarity in visual word recognition. *J Exp Psychol Human* 21(5), 1098–1116. Kasparian, K., Vespignani, F. & Steinhauer, K. (2017). First language attrition induces changes in online morphosyntactic processing and re-analysis. *Cognitive Science* 41, 1760–1803. Meinzer, M., Lahiri, A., Flaisch, T., Hannemann, R., & Eulitz, C. (2009). Opaque for the reader but transparent for the brain: neural signatures of morphological complexity. *Neuropsychologia* 47(8–9), 1964–71. Montrul, S. A. (2008). *Incomplete Acquisition in Bilingualism. Re-examining the Age Factor*. Amsterdam: John Benjamins. Pliatsikas, C. & Marinis, T. (2013). Rule-based morphological processing in a second language: a behavioural investigation. *Language Study Working Papers* 5, 3–12. Schmid, M. S. & Jarvis, S. (2014). Lexical access and lexical diversity in first language attrition. *Biling-Lang Cogn* 17(4), 729–748. Schmid, M. S. & Köpke, B. (2007). Bilingualism and attrition. In: B. Köpke, M. S. Schmid, M. Keijzer & S. Dostert (eds), *Language attrition: Theoretical perspectives*, Amsterdam/Philadelphia: John Benjamins, 1–7. Schuster, S. & Lahiri, A. (2018). Lexical gaps and morphological decomposition: evidence from German. *J Exp Psychol Learn* (online), 1–17.

QR Code

