

## L2 production of formulaic sequences Bianca Mohr and Barış Kabak

One of the precursors of native-like selection and fluency is the proper use of formulaic chunks, which are presumably stored and retrieved as wholes (e.g., Wray & Perkins 2000). Previous research has shown that formulaic expressions reduce processing effort, suggesting that (i) they are faster to read than non-formulaic ones, and (ii) native speakers typically outperform non-native speakers due to familiarity with such sequences (e.g., Siyanonva-Chanturia et al. 2011). While these studies mostly focused on processing dimensions by employing the eye-tracking methodology, the articulatory characteristics of formulaic sequences in L1 vs. L2 speech have remained largely underexplored. Here we focus on the temporal dynamics of formulaic sequences in speech production, which have been suggested to differ from non-formulaic sequences with respect to the rate of articulation, pause characteristics, as well as intonation (Weinert 1995). We hypothesize that (i) native speakers (NS) are faster in the production of formulaic sequences than non-natives, and (ii) formulaic sequences are produced faster than their non-formulaic counterparts due to access to the “phrasicon”, where such sequences are linked to a routinized muscular movement. However, non-native speakers (NNS) are expected to show no difference between the two types of sequences in production since they do not readily recognize the idiomatic nature of sequences or fail to process them holistically. To that end, we additionally investigated (i) whether familiarity with the tested items has an effect on the production, and (ii) whether NNS exhibit phonological reduction in a native-like way in the realization of formulaic sequences.

Twelve highly proficient German speakers of English and 8 English native speaker controls participated in a read-aloud task. Equally divided into 4 formulaic categories (*Idioms*, *Proverbs*, *Conversational-Routines* and *Binomials*), we embedded most frequently used formulaic sequences in 24 utterances. Another set of 24 analogous utterances were created where the formulaic sequence was replaced by a non-formulaic sequence (e.g., Binomials: ...we just have to *wait and see* vs. ...we just have to *wait and pray*). We calculated speech rates (syllables/second) for each whole utterance and separately for the test sequence in it. Non-parametric tests by participants revealed that NS were generally faster in producing the formulaic sequences compared to NNS. No group difference however emerged in the production of non-formulaic sequences. Furthermore, analyses by items revealed that NS produced formulaic sequences significantly faster than their non-formulaic counterparts in 3 of the 4 conditions (*Idioms*, *Conversational-Routines* and *Irreversible-Binomials*). No difference emerged in *Proverbs*. Strikingly, formulaic sequences were not produced at a significantly faster speech rate by NNS in any of the conditions but the *Binomials*. A qualitative analysis of *Binomial* productions revealed that both the NS and NNS applied phonological reduction to the *Binomials* (but not to their non-formulaic counterparts) although this was more pronounced in the NS group. This suggests that the proper application of phonological reduction may reveal native-like patterns in the production of L2 formulaic sequences. In *Proverbs*, NNS produced the formulaic sequences significantly *longer* than their non-formulaic counterparts despite the fact that they reported familiarity with such sequences (albeit due to similar proverbs in their German). Notice that this was also the category where NS reported to be least familiar with.

Our production results are on a par with the psycholinguistic findings of Siyanonva-Chanturia et al. (2011) and Underwood et al. (2004), who found a processing advantage for formulaic sequences only in NS. Given that our NNS group consisted of highly proficient English speakers, we suggest that native-like articulation of most idiomatic chunks may be very difficult to attain by post-pubescent learners. Furthermore, prosodic reduction might be a precursor to the acquisition of formulaic language since this phonological process arguably accounted for the native-like behavior in the NNS group, albeit only in the case of *Binomials*, which not only were highly familiar to our NNS, but also are known to be very frequent, typically short, highly restricted, and very easy to acquire in SLA (cf. Howarth 1998).

### References:

- Howarth, P. 1998. Phraseology and second language proficiency. *Applied Linguistics* 19: 24-44.
- Siyanova-Chanturia, A, C. Conklin, and N. Schmitt. 2011. Adding more fuel to the fire: An eye-tracking study of idiom processing by native and non-native speakers. *Second Language Research* 27: 251-272.
- Underwood, G., N. Schmitt and A. Galpin. 2004. The eyes have it: An eye-movement study into the processing of formulaic sequences. In N. Schmitt (ed.), *Formulaic sequences: Acquisition, processing and use*, 153-172. Amsterdam: Benjamins.
- Wray, A. and M. R. Perkins. 2000. The functions of formulaic language: an integrated model. *Language & Communication* 20: 1-28.