

On the feature-based variation of <qu> words in German: evidence from a lexical decision experiment

Orzechowska, Paula* and Richard Wiese** (*Adam Mickiewicz University in Poznań, **Philipps-Universität in Marburg)

German word onsets allow for a consonant cluster spelt <qu>, as in *Qualm* 'fume', *quer* 'across', *Quote* 'quote'. While it is traditionally assumed that this orthographic form is represented by a CC sequence of a plosive followed by a voiced labio-dental fricative /kv/, closer examination of the consonant cluster demonstrates that German allows for free variation between the following sequences: [kv], [kf] and [kʋ] (Kurka 1965, Wiese 1996, Fuhrhop & Peters 2013), where the second member of the cluster varies in terms of voicing (voiceless [f] vs. voiced [v]) or manner of articulation (fricative [f v] vs. approximant [ʋ]). Given that these clusters are available in this context as allophones, we are interested in testing whether any of these sequences facilitates word recognition, and if so, which one.

The background for this work comes from Orzechowska and Wiese (2015) and Orzechowska (2016), who propose a feature-based analysis of phonotactics as an alternative to the traditional principle of sonority (e.g. Jespersen 1913, Vennemann 1988, Steriade 1990). The authors' preliminary work on Polish, German, and English reveals the relevance of different distinctive features in cluster formation in different languages. As for German, initial clusters were shown to be constructed on the basis of a statistically-based ranking of preferences (where '>' means 'higher ranked than'): increase in articulatory opening > shorter clusters > voiceless C cluster-initially > voiced C cluster-finally. Following the statistical ranking of features, i.e. manner > size > voicing, we expect [kʋ] to facilitate word recognition best since the within-cluster manner difference between [k] and [v] is maximised.

We conducted a lexical decision task, with 21 <qu>-initial German words and 21 nonce words. All the words, recorded by a native speaker of German with 3 pronunciation variants (e.g. *Qual* [kfa:l, kva:l, kʋa:l]), were presented to 28 German subjects 3 times, resulting in the total of 378 test items. The experimental session was composed of 6 blocks (with randomised item order and counterbalanced for response buttons), each containing 63 items. We analysed reaction times and correctness rates in relation to (a) real and non-existing words, and (b) 3 cluster variants. The results of the study show that there are (not surprisingly) systematic differences in the perception of words and non-words as well as in the perception of the three cluster variants [kv], [kf] and [kʋ]. We will also report on the interactions between the studied factors.

References

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