

The Perception of Manipulated German Vowels by Turkish GFL Learners

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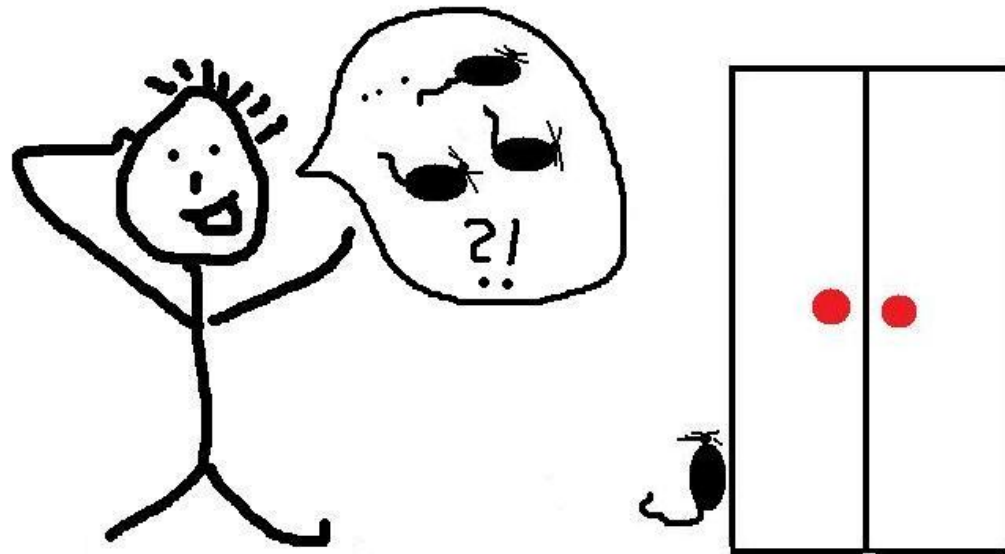
CUNY Phonology Forum Conference on the Segment,
New York

11th-13th of January, 2012

How does the *L2* segment fit in?

- “Investigation of L2 phonology is underrepresented” and trails behind research in other linguistic areas (Gut 2009)
- Of all aspects of second language phonology, it is **the segment** that has attracted most attention (Archibald, Young-Scholten 2003)
- Trubetzkoy (1939) and the idea of a “phonological sieve”
- Lado (1957) and Contrastive Analysis: Aspects of the L2 that are similar to the L1 are easy to acquire
- Flege (1995) and Speech Learning Model: Similar sounds are harder to learn the older learners are (→ equivalence classification)

Could I pay for this closet in **rats***?
Kann ich den Schrank in **Ratten*** zahlen?



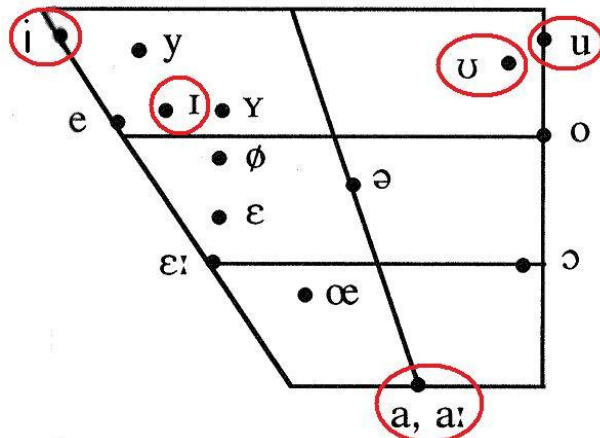
*Intended: **Raten** (German)/**installments** (English)

Motivation and hypothesis

- German vowels (both **vowel quality and vowel quantity**) as special problem for Turkish learners of L2 German (Rolffs 2005)
- **Feature Hypothesis** (McAllister et al. 2002): L2 features not used to signal phonological contrast in L1 will be *difficult* to perceive for the L2 learner
- **Desensitization Hypothesis** (Bohn 1995): Duration cues in vowel perception are *easy* to access whether or not listeners have had linguistic experience with them
 - **Hypothesis:** *Vowel quality and quantity are not equally problematic for Turkish learners of L2 German, in that quantity differences are easier to perceive*

Quick overview: German and Turkish vowel systems

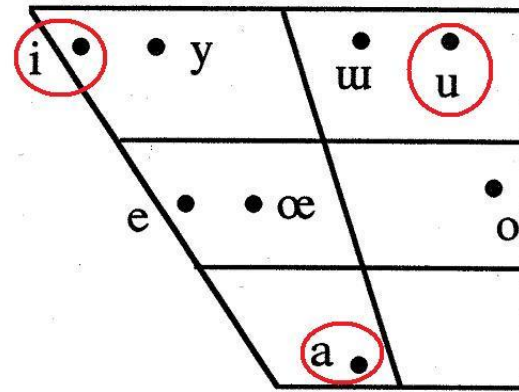
German



(Source: Handbook of the IPA)

- German differentiates lax and tense vowels
- Tense vowels are usually long, lax vowels are short

Turkish



(Source: Handbook of the IPA)

- Turkish described as language without vowel length
- Long vowels only through secondary lengthening and in borrowed foreign words

Data collection and participants

- **Data collection** in Istanbul, Turkey and Dortmund, Germany
- **Experimental group** from İstanbul Erkek Lisesi, İstanbul: 22 Turkish students (8 female/14 male; \bar{x} age: 17.5; SD=.5)
- **Control group** from Dortmund, West Germany: 21 native German speakers (12 female/9 male; \bar{x} age: 17.9; SD=.7)
- All subjects participated in a perception (focus of this talk) and an additional production experiment
- For analysis: 20 per group (**N=40**)

Perception experiment

- Discrimination task with manipulated nonsense word pairs ([bi:p]-[bɪp], [ba:p]-[bap], etc.)
- Manipulation of prototypical items (with PRAAT) in reminiscence of a design used by Sendlmeier (1981):
 - Long vowels were shortened** to the average length of their corresponding short counterpart
 - Short vowels were lengthened** to the average length of their corresponding long counterpart

Experimental conditions

Example items for category /u/:

- **Proto:** non-manipulated long vowel versus non-manipulated short vowel
- **Length:** non-manipulated long vowel versus lengthened short vowel (*same length, different quality*)
- **Quality:** non-manipulated long vowel versus shortened long vowel (*same quality, different length*)



Conclusion

- German vowel quality and quantity do not seem to be equally hard to perceive for Turkish GFL learners:
 - **no significant differences** for the perception of vowel pairs that differ in **length**
 - difficulties with the perception of vowel quality in the manipulated **/u/-pair**
- Apparent support for Bohn's desensitization hypothesis concerning perception of vowel length
- Explanation in terms of Flege's SLM: Quality of Turkish /u/ is too similar to both German /u:/ and /ʊ/

Open questions

- Influence of **secondary long vowels** in Turkish?
 - Implication: Contrastive analysis on a phonemic level not helpful
 - Further studies with for example Polish GFL learners, who neither have long vowels on a phonemic or phonetic level
- Influence of **experimental design**?
 - Extension of discrimination experiment with different consonantal contexts and carrier sentences (cf. Levy, Strange 2008)

References

- **Archibald, J., Young-Scholten, M.** 2003: The second language segment revisited. *Second L language Research* 19, 163-167.
- **Bohn, O.-S.** 1995: Cross-Language speech perception in adults. First language transfer doesn't tell it all. In: Strange, W. (ed.), *Speech perception and linguistic experience: Issues in cross-language research*. Timonium, MD: York Press, 279-304.
- **Flege, J.** 1995: Second language speech learning: Theory, findings, and problems. In Strange, W. (ed.), *Speech perception and linguistic experience: Issues in cross-language research*. Timonium, MD: York Press, 233-277.
- **Gut, U.** 2009: *Non-native Speech. A Corpus-based Analysis of Phonological and Phonetic Properties of L2 English and German*. Frankfurt am Main: Peter Lang.
- **Lado, R.** (1957): *Linguistics Across Cultures*. Ann Arbor: The University of Michigan Press.
- **Levy, E., Strange, W.** 2008: Perception of French vowels by American English adults with and without French language experience. *Journal of Phonetics* 36, 141-157.
- **McAllister, R., Flege, J., Piske, T.** 2002: The influence of L1 on the acquisition of Swedish quantity by native speakers of Spanish, English and Estonian. *Journal of Phonetics* 30, 229-258.
- **Rolff, S.** 2005: Türkisch. In: Hirschfeld, U. (ed.), *Phonetik International: von Afrikaans bis Zulu*, Waldsteinberg: Popp. CD-Rom.
- **Sendlmeier, W. F.** 1981: Der Einfluß von Qualität und Quantität auf die Perzeption betonter Vokale des Deutschen. *Phonetica* 38, 291-308.
- **Trubetzkoy, N.** 1939: *Grundzüge der Phonologie*. (*Travaux du Cercle Linguistique de Prague*. 7). Prag [postum].