L1 phonetic drift in Dutch L2 speakers of English?

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ICPhS2015 satellite workshop on Phonetic Learner Corpora
Wed 12 Aug 2015, Glasgow

accommodation

- participants in conversation converge (accommodate to each other)
- phonologically, phonetically, stylistically
- to decrease social distance (Pardo, 2011)
- even without social context in word repetition task (Goldinger, 1998)
- subconscious and automatic (Trudgill, 2008)
University College Utrecht

- bachelor college in Anglosaxon fashion
- 3 year undergrad program
- academic *Bildung*
- ca 3x220 students

- English used as lingua franca
- selective, competitive, intensive
- also intensive social life

UCU English accent

- multilingual, students’ L1s are 5% English, 60% Dutch, 35% others
- no pronunciation training, minimal environmental effects
- unique (distinct) variety of L1/L2 English
phonetic drift in L1?

- does long-term accommodation/convergence (to L2 English) correspond with phonetic drift in L1? (cf. Chang, 2011)
- informally suggested by L1 Dutch students at UCU

LUCEA: Longitudinal Corpus of UCU English Accents

- 4 cohorts:
  2010 (n=75), 2011 (n=78),
  2012 (n=68), 2013 (n=61)
- 5 interviews (rounds) over 3 year
- ca 850 recordings, each ~20 minutes of speech
- metadata from questionnaires and audiometry
corpus speech content

- EN read texts
  Rainbow Passage (Fairbanks, 1960), Wolf Story (Deterding, 2006), prosody sentences (White & Mattys, 2007), intelligibility test sentences (Van Wijngaarden ea, 2002), UN Decl Human Rights (UN, 1948; Bradlow, 2011)

- L1 read texts
  UN Decl Human Rights

- EN/L1 unscripted monologues

- EN unscripted dialogue

VOT (/t/, /d/) and COG (/s/)

- VOT may indicate foreign accent
  - VOT in Dutch /t/ similar to English /d/ (e.g. Collins & Mees, 2013)
  - VOT in Dutch /d/ shorter (more voice lead) than in Eng /d/, e.g. in /den/
  - VOT in Dutch /t/ shorter than in Eng /t/, no aspiration

- Centre of gravity of frequency (COG) lower in Dutch than in English (e.g. Lowie & Bultena, 2007; Wieling et al, this conf, P3.36)
  - /s/-/z/ voicing contrast weaker in Dutch than in Eng, e.g. in /væn/
methods & materials

- Dutch L1 speakers of L2 English (cohorts 2010 and 2011; high proficiency; N=50)
- recorded with close-talking microphone in quiet furnished office
- 2-minute monologues from first and last recordings
- word-initial /d/ and /t/, and all instances of /s/

parameters

- voice onset time (VOT)
  - using Praat; manual segmentation; from stop burst to onset of voicing
- centre of gravity of frequency (COG)
  - using Kaldi speech recognition system for segmentation; mean of spectral energy distribution over segment
LMM analysis

linear mixed effects model (lme4 R package)

• fixed: sex (F,M), recording (1,5), language (N, E)
• random effect: speaker
  • by-speaker random slopes for effects of recording and language

VOT results

• no longitudinal drift between rounds 1 and 5
• in /d/: no significant difference Eng-Dutch (ie: no increase of voice lead for Eng)
• in /t/: in English +29 ms as compared to Dutch
COG results

- significantly lower in Dutch /s/ than Eng /s/
- no longitudinal drift between rounds 1 and 5
discussion

- difference in VOT of /t/ between languages suggests separate categories of /t/ for L1 Dutch (unaspirated) and L2 English (aspirated), even before first recording

- lack of difference in VOT of /d/ suggests merged categories of /d/ across languages, throughout all recordings (no drift)

- difference in COG between languages suggests separate categories of /s/ for L1 Dutch and L2 English, even before first recording (no drift)

- speakers were already highly proficient in L2 English (with separate variants for L1 and L2 /t/ and /s/) at first recording

- no further drift in COG nor VOT observed across recordings

considerations

- unusual community: L1 speakers minority, L2 speakers dominant

- may contribute to stability of segments over time, despite English-speaking environment

- phonetic features of Dutch may be adopted by other speakers
  - this would be in line with accommodation theory
  - with English L1 speakers in the minority, their influence is expected to be relatively weak
  - speakers of other L2s may be phonetically influenced by Dutch
thank you!