

Prevoicing in Standard German plosives: implications for phonological representations?

Background/Introduction

Languages with a two-way voicing contrast in plosives usually implement this contrast in word-initial position either as the presence/absence of vocal fold vibration or as the presence/absence of aspiration (Lisker & Abramson 1964, although Swedish and Turkish are notable exceptions).

Several phonological approaches collectively known as *Laryngeal Realism* (hereafter LR; e.g., Harris 1994, Honeybone 2005, Beckman, Jessen & Ringen 2013) propose that the phonological representation of plosives (and obstruents in general) can be directly read off their phonetic implementation: languages with a contrast in vocal fold vibration have the privative feature [voice] (or the element [L]), and languages with a contrast in aspiration employ the privative feature [spread glottis] or [tense] (or the element [H]). The different features account for differences in phonological behaviour: while [voice] triggers voicing assimilation in obstruent clusters, [spread glottis] triggers devoicing in the same clusters.

We present evidence from Standard German that casts doubt on the claims of Laryngeal Realism, and suggests that both features might play a role in the language.

Previous research on Standard German

Standard German has six plosives /p t k b d g/. Whereas fortis /p t k/ are aspirated in the onsets of stressed syllables, sources agree that lenis /b d g/ usually have a small positive VOT (e.g., Jessen & Ringen 2002, Kuzla & Ernestus 2011). These facts lead many LR authors to postulate that Standard German has a feature [spread glottis] or [tense], while [voice] is lacking (a.o. Iverson & Salmons 1999, Jessen & Ringen 2002, Honeybone 2005). In such an analysis, prevoicing in lenis stops is not to be expected, and this possibility is disregarded in the above-mentioned studies. Surprisingly, some prevoicing in initial position has been reported for Standard German by Kohler (1977: 158) and Jessen (1998, quoted in Beckman et al. 2013: 261, 270).

New data: Prevoicing in Standard German

In a production task with 10 native speakers of Standard German (5 from Southern Germany, 5 from Central Western Germany), we found considerable variation in the realization of /b d g/, both in and between subjects. In stressed onsets before /a/, 7 out of 10 speakers variably prevoiced these categories (52.5% of their tokens, average VOT of the prevoiced tokens -95.2 ms), and 1 out of those 7 speakers prevoiced all their tokens without exception. These findings, then, fly in the face of LR analyses of Standard German: prevoicing is anything but marginal in our data. Although some German dialects appear to show prevoicing in stressed onsets (Nina Ouddeken & Edoardo Cavirani, p.c.), our speakers did not speak any dialect, and our findings could not be attributed to region of origin.

The occurrence of prevoicing might imply that these speakers phonologically represent /b d g/ with the feature [voice], in addition to the feature [tense] for /p t k/. In order to test this hypothesis, we are currently gathering production data with clusters of voiceless-voiced plosives from the same speakers. If speakers have both features [voice] and [tense], then we expect pattern (1); if they only have [tense], we expect pattern (2) (which was attested by Jessen & Ringen (2002), although they did not measure VOT in the first plosive of the cluster (p. 198) and none of their speakers had prevoicing in word-initial lenis plosives).



Implications

If the speakers that produced prevoiced lenis stops do indeed reveal pattern (1), we need to conclude that, contrary to current analyses, these speakers have a feature [voice] in addition to [tense]. This would entail the possibility that members of the same language community have different phonological systems.

If these speakers reveal pattern (2), however, their prevoicing of lenis stops in onset position poses a problem for LR approaches, but could be accounted for with phonological theories that allow an arbitrary mapping between phonology and phonetics (cf. Boersma 2007, Cyran 2011).

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