L1 phonetic interference in the VOTs produced by Polish-English bilinguals

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Bilingual speakers often exhibit L1 interference in their L2, but L2-dominant bilinguals have been hypothesized to be most likely to suppress L1 interference (Flege et al. 2002). Recent findings by Antoniou et al. (2011) challenge this claim, reporting L1 interference on the voice onset times (VOTs) produced by L2-dominant Greek-English bilinguals in an "interlanguage condition" (i.e. during code-switching), but not in a "unilingual condition" (Antoniou et al. 2010). The present study provides evidence of L1 interference in the speech of L2-dominant bilinguals in a "unilingual condition". I show that Polish-English bilinguals (N=10; 6 men, 4 women) born and raised in New York City employ English-like voicing for underlying stops and Polish-like voicing for stops derived from interdental fricatives in an English reading task.

Obstruent voicing could trigger interference for Polish-English bilinguals because it is realized differently in the two languages. Polish contrasts short-lag VOT for /t/ with negative VOT (pre-voicing) for /d/ (Keating 1980), while English contrasts short-lag VOT for /d/ with long-lag VOT for /t/ (Lisker & Abramson 1964). I analyze VOTs for **underlying** coronal stops, as in ***t****in* or ***d****en*, and for stops **derived** from TH-stopping, a feature of the New York City dialect (Labov 1966), which renders *thin* as [**t**]in and *then* as [**d**]en.

Tokens with word-initial underlying /t, d/ (N=200) and derived [t, d] (N=150) were extracted from a reading passage. I controlled for prosodic position (utterance-initial, -medial, -final) and preceding context (pause, voiceless fricative, voiceless stop). Preceding voiced segments were excluded as they can trigger pre-voicing for monolingual American English speakers (Cox & Palenthorpe 2007, Jacewicz et al. 2009). Stop realizations of interdental fricatives were determined acoustically, and VOT was measured in Praat.

A mixed-effects regression model was fitted to VOT values, with Speaker and Token as fixed effects. The best fit revealed significant effects of Stop Type, Prosodic Position, and their interaction. Post-hoc Tukey tests with Bonferroni adjusted *p*-values revealed a four-way voicing contrast. Significant differences emerged between underlying /t/ (*M*=69 ms) and /d/ (*M*= 1 ms, *p*=.01), derived [t] (*M*= 33 ms) and [d] (*M*= -33 ms, *p*=.001), and underlying /d/ and derived [d] (*p*=.02). VOTs for underlying /t/ and derived [t] were not significantly different (*p*=.5), but means indicated that derived [t] was unaspirated. The interaction between Stop Type and Prosodic Position was observed because VOTs of underlying stops varied with prosodic position, while those of derived stops did not. VOTs for underlying /t/ were larger utterance-initially (*M* = 80 ms) than utterance-medially (*M* = 67 ms) or -finally (*M* = 57 ms). Underlying /d/ showed slight pre-voicing utterance-initially (*M* = -7 ms), a context that could be treated as [+voice]. VOT was positive utterance-medially (*M* = 1 ms) and –finally (*M* = 20 ms). Data from controls (2 male and 2 female monolingual white New Yorkers) confirm lack of aspiration on

derived [t] (*M*= 20 ms) when compared to underlying /t/ (*M*= 80 ms), but show no significant difference between derived [d] (*M*= 15 ms) and underlying /d/ (*M*= 0 ms).

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