

**Aspirated and unaspirated voiceless stops in a language contact situation.
A pilot study on Voice Onset Time (VOT) in the linguistic repertoire of two Italian Australian
speakers of Calabrian origin.**

1. In a migratory context, speakers negotiate between their mother tongue and the dominant language at all levels of their linguistic competence. At phonetic level, Voice Onset Time (VOT) the interval between stop consonants release and onset of vocal fold vibration, revealed to be a good index of linguistic interference and phonetic drift (e.g., Flege, 1987a; Major 1992; Sancier & Fowler, 1997 and Fowler’s subsequent works; Hrycyna, Lapinskaya, Kochetov, Nagy, 2011; Chang, 2012) as well as of foreign accent (De Leeuw, Schmid, Mennen, 2010). To explain the results of cross-language phonetic influence, several models of L2 speech acquisition have been tested in the literature. In the present study, we will refer to one of the most influential ones, Flege’s Speech Learning Model (SLM) as it explicitly addresses the link between L2 speech perception and production and postulates that “production of a sound eventually corresponds to the properties represented in its phonetic category representation” (Flege, 1995, p. 239). According to Flege, L1 and L2 phones coexist in one shared system and are related to one another on an allophonic basis. As cross-language phonetic interference is bidirectional in nature, the SLM predicts two different effects of L2 learning on the production of L1 sounds “depending upon whether or not a new category has been established for an L2 sounds in the same portion of phonological space as an L1 sound” (ibid. p. 241). If a L1 and L2 phones are perceptually linked to the same category, over time they will approximate each other in production.

2. To address the question of how native phones are maintained or changed over time under the pressure of the ambient language in a L2 migrant setting, we studied two Italian Australian speakers of Calabrian origin, one first-generation female who migrated to Australia (greater Sydney area) as a young adult from Roccella Jonica (Reggio Calabria) and one second-generation male (her son), born there. Their repertoires include Reggio Calabria (RC) Dialect (geolinguistically, a southern Calabrian dialect characterized by voiceless stops aspiration in certain contexts), RC Italian (RCI), and English. While the first-generation speaker acquired the three languages sequentially (RCD as L1, RCI as L2 learnt in Italy from age 6, English as L3 learnt in Australia from age 16), the second-generation speaker acquired RCD, RCI and English simultaneously from birth. We focus on the VOT of unvoiced stop consonants in their three languages with the aim to determine whether, and to what extent, the three languages interfere with each other. RC dialect and RC Italian on the one hand and English on the other present aspirated stops but in three different phonological contexts (see the following table).

Context of aspiration of target consonants (C)	RC Dialect /p, t, c, k/ (e.g. Falcone, 1976; Canalis, 2009; Romito et al., 2015)	RC Italian /p, t, k/, [c] (e.g. Sorianello, 1996; Stevens & Hajek, 2010; Nodari, 2015)	English /p, t, k/ (e.g. Lisker & Abramson, 1964; Ladefoged & Johnson, 2010; Abramson & Whalen, 2017)
N(asal) - C	Aspirated	Aspirated	Unaspirated
R(hotic) - C	Aspirated	Aspirated	Unaspirated
Onset-initial in stressed σ or word initial in unstressed σ	Unaspirated	Unaspirated	Aspirated

Moreover, in RC Dialect and RC Italian geminate consonants are always aspirated.

The pertinent contexts for aspiration that differ among the three languages allow to test: whether the speakers have fully or only partially learned the English phonological rule; whether longer/shorter durations of VOT in non-pertinent contexts index monodirectional or bidirectional linguistic transfer; whether the VOT values in the aspirated/unaspirated stops conform to the values of monolingual speakers or whether they have drifted. In this pilot study our original data on VOT of Italian-Australian speakers are preliminarily compared with data provided by the literature on VOT in Australian English (Antonioni et al., 2010), Calabrian Dialect (e.g. Sorianello, 1996; Romito et al., 2015) and Calabrian Regional Italian (e.g., Nodari, 2015). Our long term aim is to collect original data on Australian English as spoken in the Greater Sydney area, RC Dialect and RC Italian.

We orthographically transcribed 52,41 and 52,85 minutes of spontaneous speech uttered respectively by the first and by the second speaker, and we selected words in which the singleton stops [p, t, c, k] appear in the following contexts: i) stressed and unstressed syllables following N; ii) stressed and unstressed syllables following R; iii) absolute word initial position. Geminate stops [p:, t:, c:, k:] were preceded and followed by stressed or unstressed

vowels. The target words were segmented and phonetically transcribed in Praat and VOT durations of the target consonants calculated.

3. Our results show: 1) the first-generation speaker maintained the aspiration of stop consonants in the expected phonological contexts in RCD and in RCI (Fig.1), while in English she produced longer VOT values also when stops followed nasals (Fig. 3), i.e. in a context in which aspiration is expected in her RCD and RCI but not in English. The data suggest transfer of L1/L2 onto L3 and absence of L1 attrition. Compared to VOT values provided by the literature, it appears that our speaker maintained the L1 values at least for the geminated bilabial and velar stops. 2) The second-generation speaker too maintained in his RCD and RCI the aspiration of stop consonants in the right phonological contexts. However, values of VOT higher than in the first-generation speaker and closer to English suggest transfer of English onto RCD and RCI (Fig.2). RCD and RCI transfer onto English is confirmed by the presence of aspiration in the context N[p, t, k]V (Fig.3) which should not trigger it in English.

We will discuss the results in light of the SLM model.

Fig 1. RCD and RCI – first generation spkr

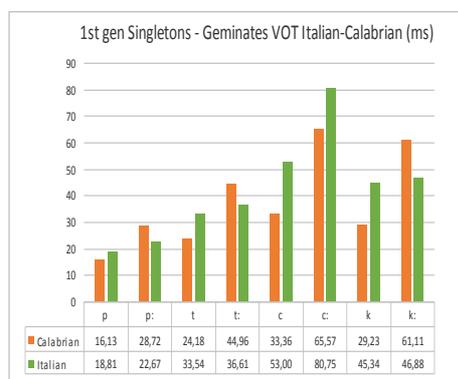


Fig 2. RCD and RCI – second generation spkr

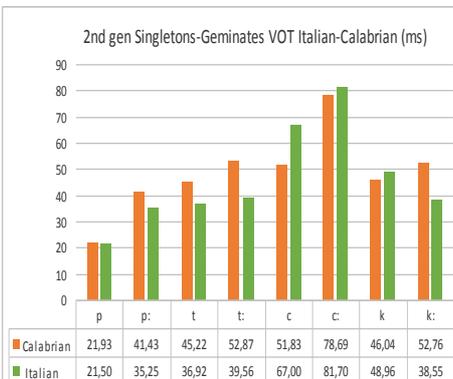
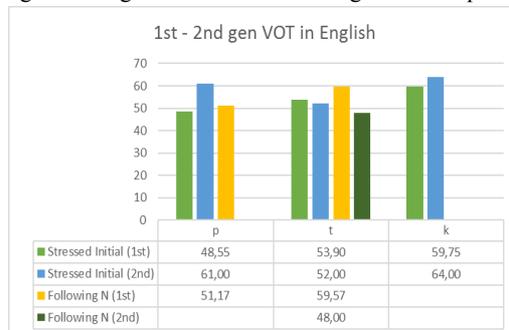


Figure 3. English – first and second generation spkrs



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