

Is Italian a true-voice language with aspiration and inactive voice?

Pázmány Péter Catholic University
Budapest–Piliscsaba

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Bálint Huszthy
huszthy.balint@gmail.com

1. OVERVIEW

- Laryngeal Realism** (Iverson–Salmons 1995; Honeybone 2002, 2005; Cyran 2014; etc.) classifies the languages with a two-way laryngeal system along two categories, according to the markedness of the [voice] or the [spread glottis] feature:
 - a) **Aspiration languages:** obstruent voicing only in intersonorant position; *Germanic, Chinese*, etc.
 - b) **Voice languages:** obstruents may have actual voice; *Slavic, Romance, Hungarian*, etc.
 - Obstruents undergo **Regressive Voice Assimilation (RVA)**:
Adjacent obstruents share their voice value from the left to the right (DD < T+D; TT < D+T).
- The case of Italian:**
 - Italian seems to be a voice language, like other Romance languages (cf. Krämer 2009), but, apparently, RVA is defective in Italian, and voiceless stops are mildly aspirated.
 - Diachronically the only obstruent cluster in Italian was /sC/; RVA seems to work in /sC/, e.g. *pa[s]ta*, *[z]degno* 'disdain', *[z]nob* 'snob', *a[z]ma* 'asthma', etc.
 - However, adjacent obstruents in loanwords tend to preserve their voice values.
 - Hypothesis:** s-voicing in /sC/-clusters is not RVA in synchrony.

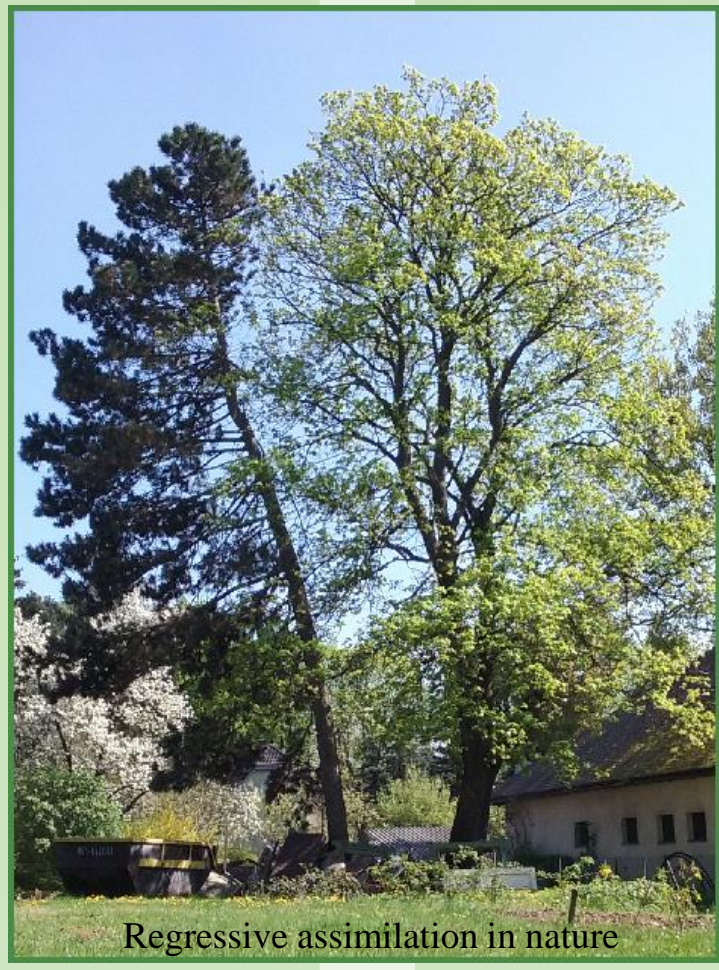
2. CORPORA

2.1 The analysis of Italian foreign accent

- Fieldwork in three cities of Italy (Gorizia, Florence, Naples), with 68 informants.
- Broadly 20 hours of direct and indirect voice recordings “on the street”.
- Speech in 4 foreign languages (English, French, German, Spanish), with sample sentences.
- Results: despite the dialectal differences, we can establish a “common Italian foreign accent”.

2.2 Loanword experiments

- Recordings in soundproof studios (Hungarian Research Institute for Linguistics & the SNS of Pisa),
- Focussed on consonant clusters (19 sample passages with 93 target words, repeated 5 times),
- With the participation of 15 Italian informants (from Veneto, Trentino, Emilia-Romagna, Lombardy, Tuscany, Lazio, Campania, Apulia, Calabria and Sardinia).



3. ITALIAN AS A VOICE LANGUAGE WITHOUT RVA

3.1 Italian as a voice language

- The phonetic shape of voiced obstruents is the same as in other languages of the Romance family.
- Voiced obstruents have a long voice lead even in non-intersonorant and in word initial position.
- Voice is distinctive: obstruents are in phonological opposition according to [voice].
- The aspiration of the voiceless obstruents is possible and frequent (especially in certain dialectal regions, such as in Tuscany and in Calabria), but voiceless aspirated obstruents are in opposition with voiced unaspirated ones, so the marked laryngeal feature is still [voice].

3.2 The absence of RVA in Italian

- Adjacent obstruents tend to preserve their original voice value in recent loanwords (see Chart 1).
- Only the sibilants may get voiced before voiced consonants in Italian, but their voicing vacillates in recent loanwords (see Chart 2).

Chart 1:

	target words	prevalent pronunciation
1	<i>vodka</i>	[ˈvɔːdka], [ˈvɔːdəka]
2	<i>McDonald's</i>	[mekˈdɔːnaldə]
3	<i>outdoor</i>	[ˈawtdɔr], [ˈawtədɔr]
4	<i>upgrade</i>	[apˈgreːjdə], [apəˈgreːjdə]
5	<i>sovchoz</i>	[ˈsɔːvkɔfʃ]

Chart 2:

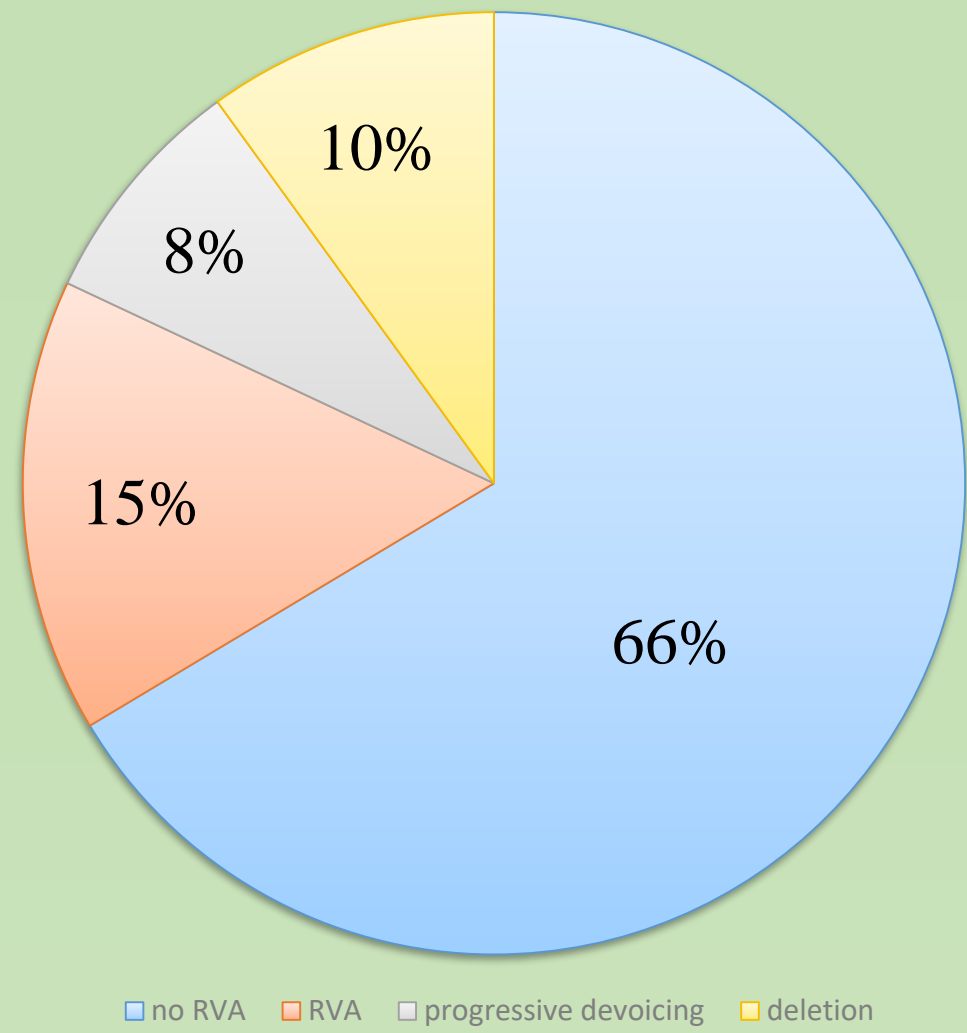
	target words	prevalent pronunciation
1	<i>iceberg</i>	[ˈajsbergə], [ˈajsberk]
2	<i>frisbee</i>	[ˈfri(:)sbi], [ˈfri(:)zbi]
3	<i>backslash</i>	[bekˈslɛ(:)ə], [bekˈzlɛ(:)ə]
4	<i>kalashnikov</i>	[kaˈlaʃnikov], [kaˈlaʒnikov]
5	<i>uzbeco</i>	[uʃsˈbɛːko], [uzˈbɛːko]

- Spectrograms and wave forms clearly show that between voiced and voiceless obstruents there must not necessarily be any epenthetic vowel (schwa), and the segments can follow each other even with different voice values (see Praat Picture 1 for D+T and Praat Picture 2 for T+D).
- However, the first stop is often released, which may cause a schwa-epenthesis.

4. STATISTICS

4.1. Obstruent clusters in the corpus apart from /sC/:

- Obstruent clusters: 1662 occurrences in total
 - No RVA: 1091 occurrences
 - RVA: 256 occurrences
 - Progressive devoicing: 132 occurrences
 - Consonant-deletion from cluster: 164 occurrences

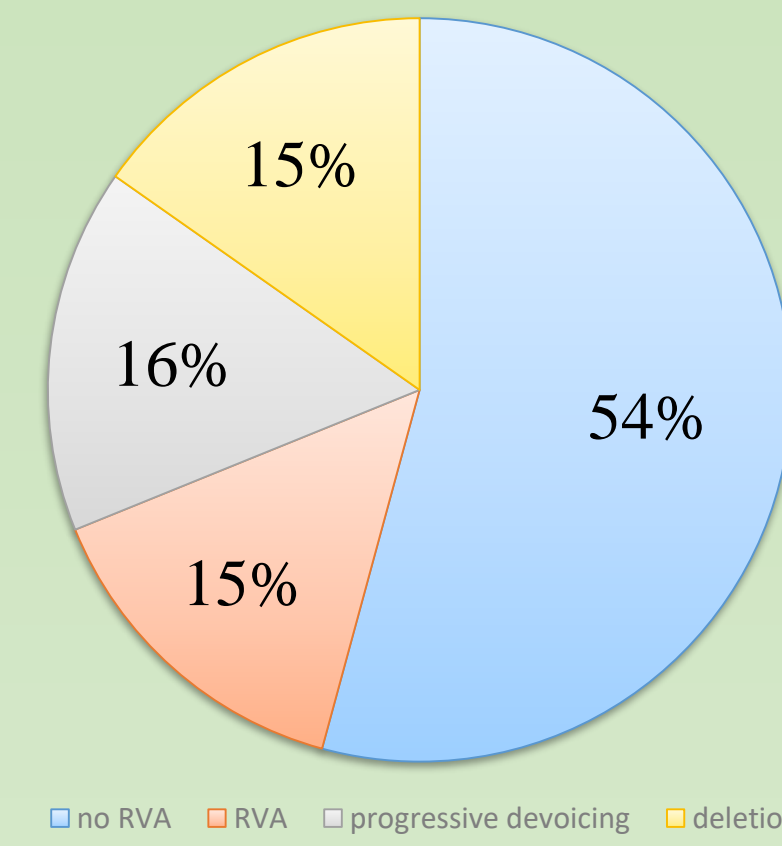


- Additional information:

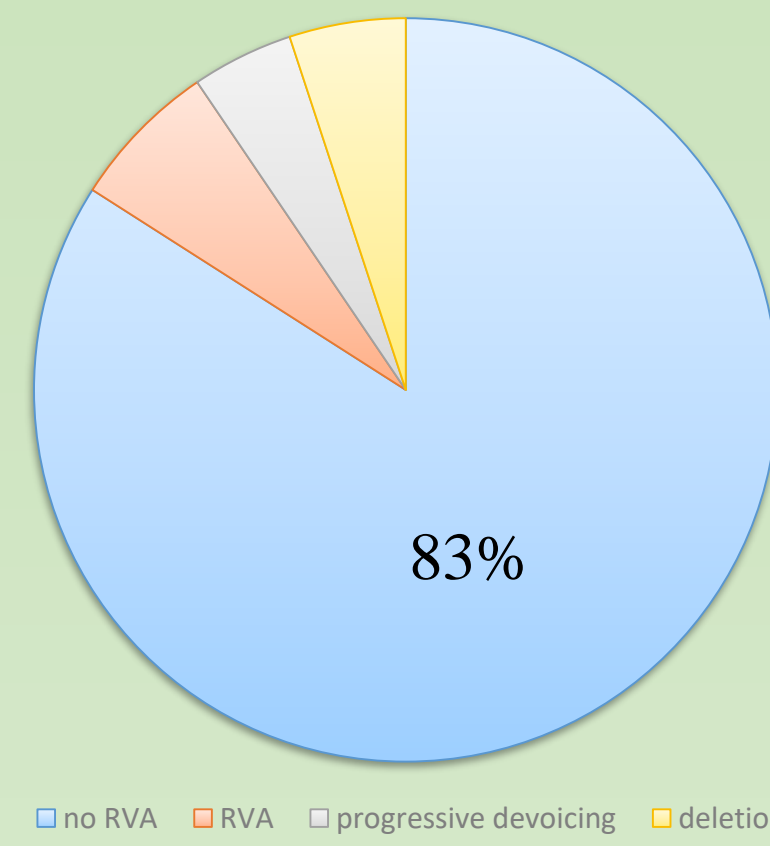
- Other solutions: 17 metatheses, 2 progressive voicings
- Schwa-epenthesis between the two obstruents: 257 occurrences only (15% of the data)

4.2. Differences between the attitude of northern and southern informants:

NORTH (487 obst. clusters)

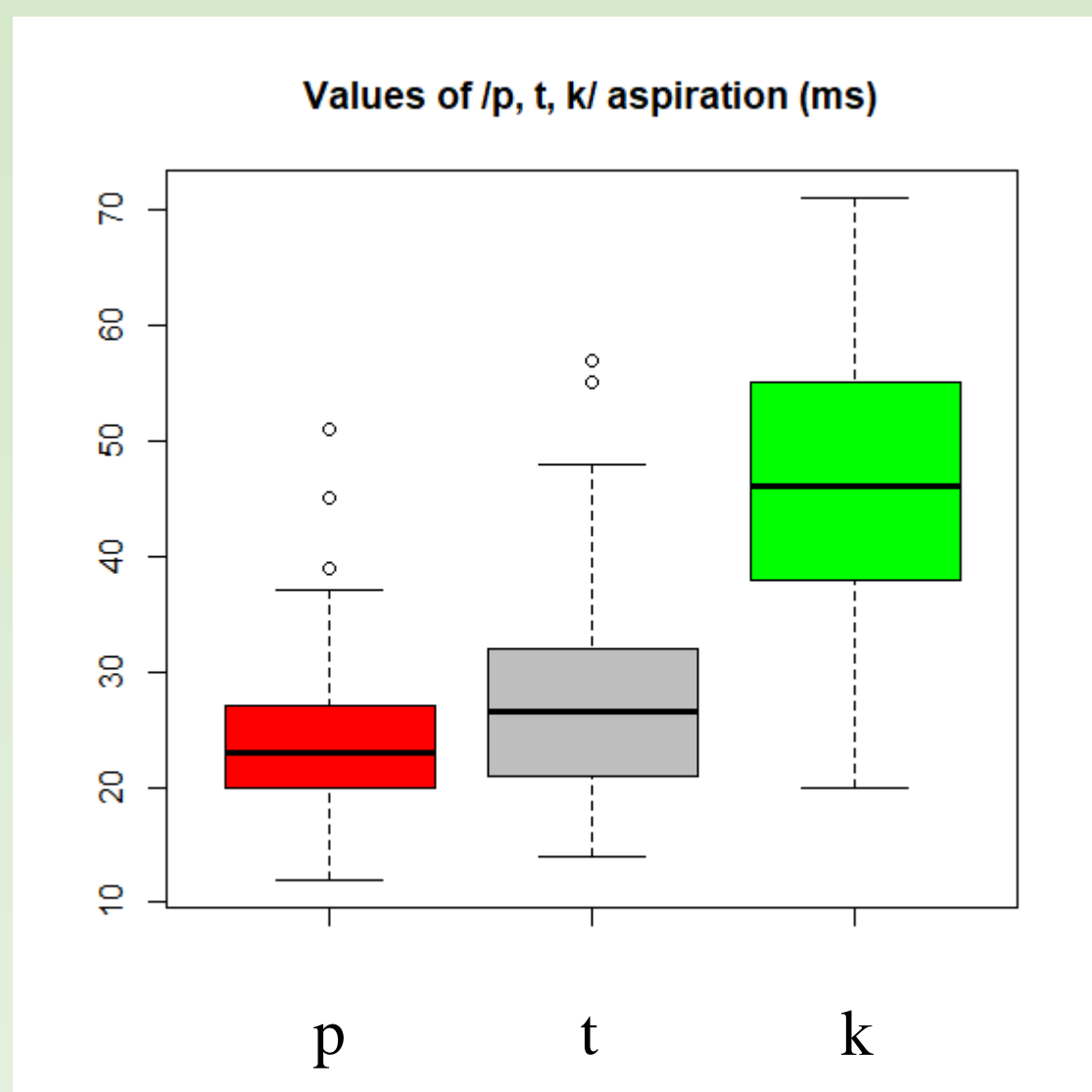


SOUTH (532 obst. clusters)



4.3. Aspiration found in the data:

- Stevens & Hajek (2010) and Nodari (2015) claim that /p, t, k/ is moderately aspirated in all varieties of spoken Italian, and heavily aspirated in Calabrese dialects.
- In the corpus mild aspiration has been detected in the case of /p, t, k/, which falls between the standard values of aspiration established for classical voice languages and classical aspiration languages:
- Aspiration mean of [p]: 24.046 ms
- Aspiration mean of [t]: 27.465 ms
- Aspiration mean of [k]: 46.123 ms



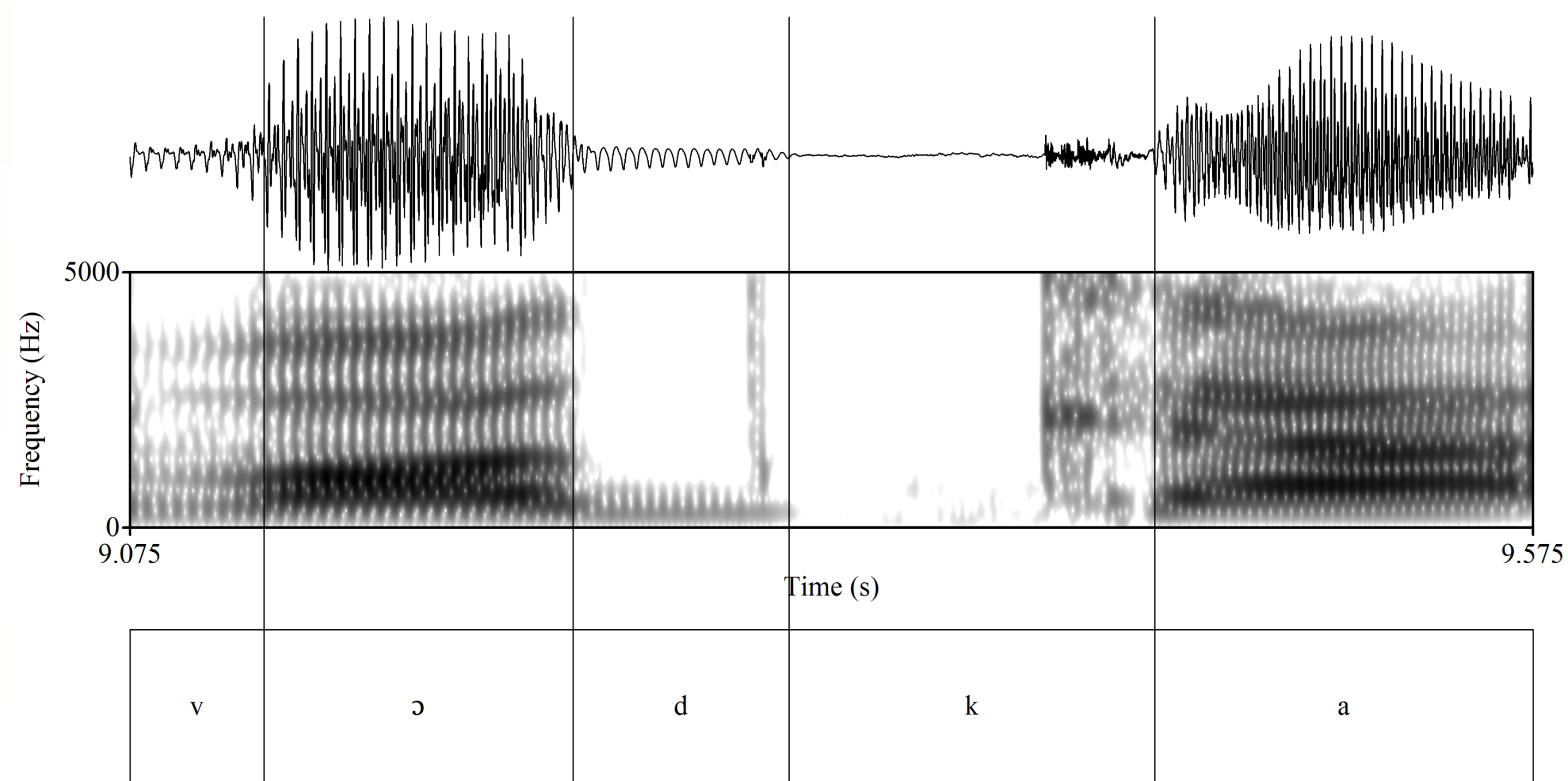
5. PHONOLOGICAL QUESTIONS

- Italians strikingly tend to avoid RVA in obstruent clusters which can be interpreted as a conservative phonological tendency in synchrony: the aim is the conservation of the input values, even if it require insertion processes (such as schwa-epenthesis).
- Dilemma: is Italian a true-voice language with inactive voice and aspiration? Are there other theoretical options to solve this situation?
- From a Laryngeal Relativism approach, if there is no true laryngeal activity in Italian phonology, it may be seen as an h-system, with virtually no aspiration in the fortis series (see Balogné Bérces & Huszthy 2017).

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Praat Picture 1: Wave form and spectrogram of the Italian pronunciation of *vodka* (25-year old female informant from Emilia-Romagna)



Praat Picture 2: Wave form and spectrogram of the Italian pronunciation of *backslash* (28-year old male informant from Calabria)

