

Intonation of Sicilian among Southern Italo-romance dialects

Valentina De Iacovo, Antonio Romano

Laboratorio di Fonetica Sperimentale “A. Genre”, Univ. degli Studi di Torino, Italy

valentina.deiacovo@unito.it, antonio.romano@unito.it

ABSTRACT

Dialects of Italy are a good reference to show how prosody plays a specific role in terms of diatopic variation. Although previous experimental studies have contributed to classify a selection of some profiles on the basis of some Italian samples from this region and a detailed description is available for some dialects, a reference framework is still missing. In this paper a collection of Southern Italo-romance varieties is presented: based on a dialectometrical approach, we attempt to illustrate a more detailed classification which considers the prosodic proximity between Sicilian samples and other dialects belonging to the Upper Southern and Southern dialectal areas. The results, based on the analysis of various corpora, show the presence of different prosodic profiles regarding the Sicilian area and a distinction among the Upper Southern and Southern dialects.

Keywords: dialects of Italy, geoproisodic variation, dialectometry, cluster analysis.

1. INTRODUCTION

Dialects of Italy are autonomous linguistic systems characterised by specific prosodic patterns. In fact, as documented in various studies ([2] and [5] among others), the analysis of the suprasegmental features suggests a differentiation of dialectal varieties according to a geoproisodic representation. If we focus on the Southern area, except for some studies on regional Italian ([12], [14]) and specific dialects ([3], [4], [17]), we still do not have a reference framework providing a deep prosodic description. Moreover, in the wake of previous studies based on a dialectometrical approach ([8], [19]), we are now able to classify and represent data in terms of prosodic distances ([16], [15], [12]). Since the intonation system(s) of Sicily has/have not been exhaustively explored except for some regional varieties of Italian (see [7], [9], [10]), the present study aims at giving a first overview of the potential prosodic patterns found in this area (including Gallo-Italic alloglots such as Piana degli Albanesi - Palermo and San Fratello - Messina). We subsequently classify the data in terms of geolectal and sociolectal types. We apply a cluster analysis to observe how prosodic patterns are grouped together.

At a second stage, we select the most frequent pattern found in the data for each modality (also closest to the description provided by [10]) and compare it with other Southern Italo-romance varieties with the aim of verifying a potential similarity with other Southern and Upper Southern varieties.

2. METHODOLOGY

2.1. Materials and speakers

For the first experiment, data was part of a more extensive corpus available online (http://www.lfsag.unito.it/ark/trm_index.html, see also [4]). We select 31 out of 40 recordings representing 21 Sicilian dialects (9 of them were discarded because their intonation was considered either too close to Standard Italian or underspecified in terms of prosodic strength). In this corpus, speakers read a short text according to their specific dialectal lexicon. In most of the cases, a limited amount of dialectal differences was present in each text. Speakers were aged between 18 and 32 (9 men and 22 women). For the dialectometrical analysis, we retained a selection of the sentences with the same syllabic structure and stress positions. A second corpus for the interdomain comparison consisted of a series of sentences with a SVO structure, uttered in both declarative and interrogative modality, based on previous works [3, 18]. A complete set of utterances of a speaker from Pollina-Palermo has been chosen as the most representative of the dominant type and compared to similar sets from four speakers of the Upper Southern varieties (Salerno, Foggia, Bari, Taranto) and two other Southern speakers (Lecce). Speakers were aged between 25 and 53 and spoke their dialect since they were children but they speak Italian as well. None of the speakers reported any speech or hearing problems. Before measurements were performed, the recorded utterances were informally evaluated with the help of native speakers.

2.2. Procedures

Speech materials were recorded in a soundproof room by means of a TASCAM DR-40 digital recorder at a sampling rate of 44100 Hz. Speech files were subsequently resampled at 16000 Hz using Goldwave. For the first experiment, the speakers read the text twice to have a minimum choice while, for

the second one, sentences were repeated at least three times.

2.3. Annotation and measurements

The utterances were segmented and labelled at several annotation levels. Files were subsequently processed through a series of different scripts and the main prosodic cues (f0, duration, intensity) were extracted and organised in specific data files. In a second moment, we applied a correlation measurement to the normalised values and evaluated the prosodic distance on the basis of a confusion matrix. The formula behind the calculation (see [16], [18], [13]) took into account a sample of f0 values weighted with duration and the signal energy associated to the point where the measurements were taken (a particular importance has been accorded to the most perceptively pertinent segments, as suggested by [11] and [15]). Data were finally normalised.

3. RESULTS

3.1. How many prosodic patterns?

For the first experiment we analysed the prosodic contours of each sample and grouped them according to their final prosodic scheme. Four main contours were found: rising-falling, aligned with the nuclear vowel or delayed (Fig. 1 and 2), total falling (Fig. 3) or falling-rising (Fig. 4). Fig. 1 shows the profiles for the total question *ti piaciù stu cuntu?* (6 syllables) “did you like the story?” for 5 productions (light) of the following dialects: Agrigento, Palma di Montechiaro, and Trapani. The average pattern, which has been auditiely assessed and judged as a possible pattern, is shown in blue.

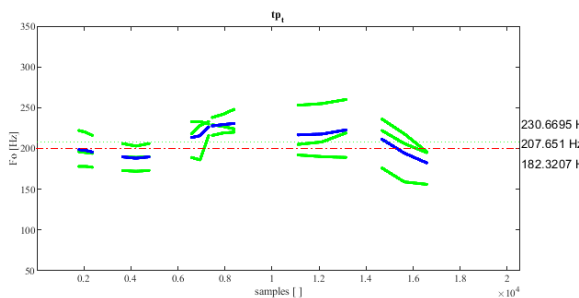


Figure 1: Pitch patterns for the same question in different dialects (Agrigento, Trapani, Palma di Montechiaro).

Fig. 2 presents an average profile similar to the previous one except for the alignment of the melodic pitch on the last and penultimate syllable of the question (This is not visible in the graph).

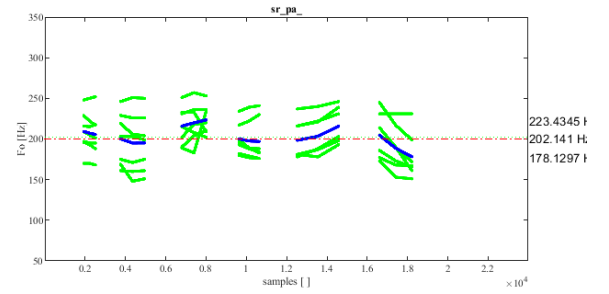


Figure 2: Pitch patterns for the same question in different dialects (Rosolini, Noto, Pachino, Alcamo, Agrigento, Trapani -2 speakers-).

The type in Fig. 3 is distinguished for a mainly falling trend beginning from the pre-nuclear vowel.

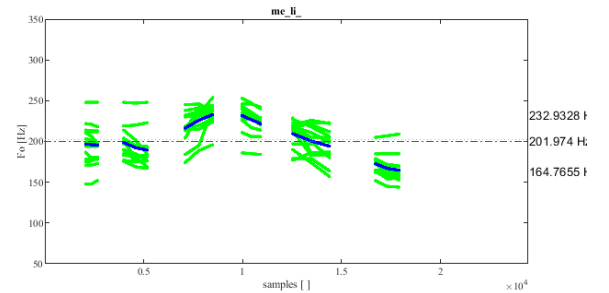


Figure 3: Pitch patterns for the same question in different dialects (Capo d'Orlando, Lipari, Ragusa, Modica, Vittoria, Erice, Castellamare, Pollina, Polizzi, Palermo -4 speakers-).

On the contrary, the pattern in Fig. 4 shows a falling-rising trend, coinciding with the other typical contour already described for the varieties of East-Sicilian regional Italian (see [2] and [9]).

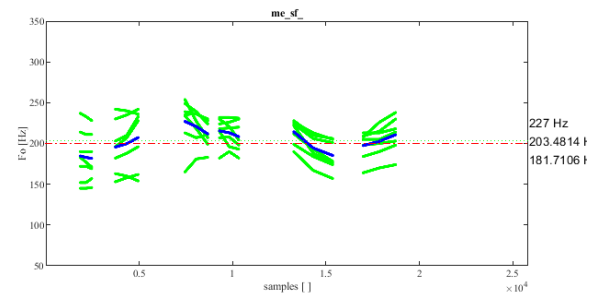


Figure 4: Pitch patterns for the same question in different dialects (Gela, Catania, Acireale, Acibonaccorsi, Grammichele, Zafferana Etnea, San Fratello, Agrigento).

The cluster analysis of the 31 data files lead to the graphical representations shown in Fig. 5 and 6. Although the expected groups do not clearly emerge, we may observe some interesting clusterings: for instance, Catania (ct_ct), Acireale (ct_ac), Grammichele (ct_gm), Zafferana (ct_zs) and Gela (cl_ge) are grouped together as for some samples of

[illegible]

Height

0 20000 40000 60000 80000 100000 120000

ag_ag
tp_tp2
tp_tp
rg_mo
pa_po2
tp_al
me_sf
sr_no
ct_ab
rg_vi
ag_ca2
cl_ge
pa_pa2
ag_li
me_co
sr_sr
rg_mo2
rg_vi2
tp_cm
sr_pa
sr_ro
tp_er
pa_pa4
ag_ca
tp_ct
pa_pa5
rg_rg
ag_pa
me_li
pa_pa3
pa_pa
pa_po1
ct_gm
pa_pz
ct_za
ct_ac
ct_ct

3.2. A comparison with other Southern dialects

For our hypotheses, we considered previous dialectal studies and data discussed for Italian in [6]. We expected a higher correlation between the Sicilian dialects and the Southernmost places. In particular, we assumed that questions share the same pitch contour in these areas (see [16]).

As regards questions, a set of 21 similar utterances has been assessed. Results are shown in Fig. 8.

2702

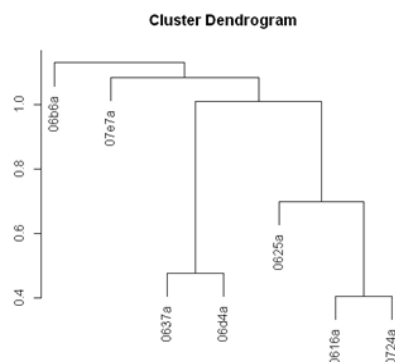


Figure 7: Dendrogram of the Southern and Upper Southern dialectal varieties (declarative modality).

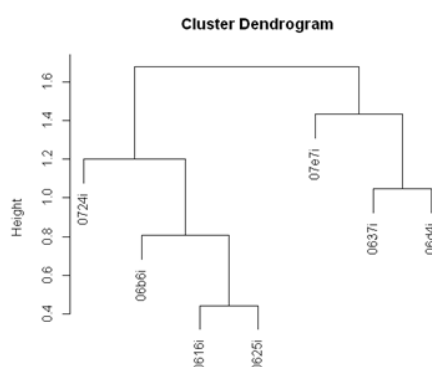


Figure 8: Dendrogram of the Southern and Upper Southern dialectal varieties (interrogative modality).

The final clustering for the interrogative modality reveals other classifications. According to the geographical position, Taranto appears halfway between Sicily and the two Sallentinian samples (which are well apart), whereas the two Apulian dialects cluster with Battipaglia-Salerno.

This dialectometrical study, conducted by calculating mean prosodic distances for 168 statements and questions (10 and 13 syllables) gave a map which confirms both our hypotheses and the dialectological taxonomy claimed by traditional surveys (see [14]). Nevertheless, as shown in Fig. 7 and 8, differences appear depending on modality.

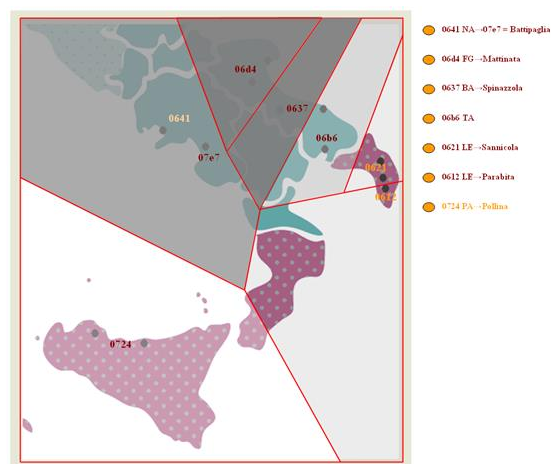


Figure 9: Prosodic map showing the prosodic distances of the Southern and Upper Southern samples for the interrogative modality.

4. CONCLUSIONS

In this paper we attempted to propose a prosodic classification of some dialects of Sicily through a dialectometrical comparison of some recordings. We also wanted to investigate the prosodic proximity between the prototypical Sicilian prosodic profile and other dialects belonging to the Upper Southern and Southern dialectal areas. Results lead to assume that more than two prosodic patterns can be associated to the Sicilian area. The analysis of various corpora shows the presence of different prosodic profiles existing in the Sicilian area and a distinction among the Upper Southern and Southern dialects. Sicilian dialects and other Southern Italian varieties have been grouped according to specific prosodic features which, through typological considerations and correlation matrices, partly confirmed the extension of areas of prosodic homogeneity within Sicily and Southern Italy.

These experiments represent only a starting point and further investigations including more consistent data are necessary to consolidate our results. This will allow to describe peculiar intonation types we found in some Sicilian dialects and to explain the reasons of a sociolectal variation (even in small communities). Finally, it would be interesting to deepen the prosodic correlation between the dialectal *substratum* and regional Italian.

5. REFERENCES

- [1] Baayen, R. H. 2008. *Analyzing linguistic data: A practical introduction to statistics using R*. Cambridge: Cambridge University Press.
- [2] Canepari, L. 1985. *L'intonazione. Linguistica e paralinguistica*. Napoli: Liguori.
- [3] Contini M., Lai J.-P., Romano, A., Roullet, S., Moutinho L., Coimbra R. L., Pereira Bendiha, U., Secca Ruivo, S. 2002. Un projet d'atlas multimédia prosodique de l'espace roman. *Proc. Speech Prosody* Aix-en-Provence, 227–230.
- [4] De Iacovo, V. 2019. *Intonation analysis on some samples of Italian dialects: an instrumental approach*. Alessandria: Dell'Orso.
- [5] Endo, R., Bertinetto, P. M. 1997. Aspetti dell'intonazione in alcune varietà dell'italiano. In: Cutugno, F. (eds), *Atti delle VII Giornate di studio del Gruppo di fonetica Sperimentale*. Roma: Collana degli Atti dell'Associazione Italiana di Acustica vol. XXIV, 27-49.
- [6] Frota, S., Prieto, P. 2015 *Intonation in Romance*. Oxford: Oxford University Press.
- [7] Gili Fivela, B., Iraci, M. 2017. Variation in intonation across Italy: The case of Palermo Italian. In: Studi AISV, 3, Fattori sociali e biologici nella variazione fonetica (a cura di Chiara Bertini, Chiara Celata, Giovanna Lenoci, Chiara Meluzzi e Irene Ricci) 167–188.
- [8] Goebel, H. 1983. Eléments d'analyse dialectométrique (avec application à l'AIS). *Revue de Linguistique Romane* 45, 349–420.
- [9] Grice, M. 1991. The intonation of interrogation of two varieties of Sicilian Italian. *Proc. 7th ICPHS* Aix-en-Provence, 210–213.
- [10] Grice, M. 1995. *The intonation of interrogation in Palermo Italian: implications for intonation theory*. Tübingen: Niemeyer.
- [11] Hermes, D. J. 1998. Measuring the perceptual similarity of pitch contours. *Journal of Speech, Language and Hearing Research* 41, 73–82.
- [12] Moutinho, L., Coimbra, R. L., Rilliard, A., Romano, A. 2011. Mesure de la variation prosodique diatopique en portugais européen. *Estudios de Fonética Experimental* 20, 33–55.
- [13] Prieto, P., Borràs-Comes, J. Roseano, P. 2010-2014. Interactive Atlas of Romance Intonation. Web page: <<http://prosodia.upf.edu/iari/>>.
- [14] Pellegrini, G. B. 1977. *Carta dei dialetti d'Italia*. Pisa: Pacini.
- [15] Rilliard, A., Lai, J.-P. 2008. La base de données AMPER et ses interfaces: structure et formats de données, exemple d'utilisation pour une analyse comparative de la prosodie de différents parlers romans. *Actas I Jornadas Científicas AMPER-POR* Aveiro, 127–139.
- [16] Romano, A. 1999. *Analyse des structures prosodiques des dialectes et de l'italien régional parlés dans le Salento (Italie): approche linguistique et instrumentale*. Grenoble: Université Stendhal.
- [17] Romano, A., De Iacovo, V. (submitted). Cartografía de datos prosódicos: de los mapas interactivos locales a una visión interpretativa global. In: Dorta, J. (eds), *Investigación geoprosódica AMPER: análisis y retos*. Madrid: Iberoamericana / Frankfurt: Vervuert.
- [18] Romano, A., Moutinho, L., Coimbra, R. L. Rilliard, A. 2012. Medidas da variação prosódica diatópica no espaço românico. *Proc. 7th GSCP International Conference: Speech and Corpora* Belo Horizonte, 273–277.
- [19] Roseano, P. 2016. Dos décadas de dialectometría entonativa. In: Iglesias, A., Romero, A., Ensunza, A. (eds.), *Linguistic Variation in the Basque language and Education II*. Bilbao: Universidad del País Vasco, 56–80.