

Social and cultural factors in the [dɖ] > [dd] phonetic change in Sardinian

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Abstract

According to many native speakers, the geminate voiced plosive in intervocalic position has recently undergone a change in different varieties of the Sardinian language, turning from the retroflex [dɖ] to the dental [dd]. The shift towards the dental form contributes to make Sardinian phonetic system consistent with that of the Italian language.

In a situation of diglossia, this variability has often been related – together with areal and social factors such as gender, class, age, education – to different opinions and sensibility on issues regarding the Sardinian cultural identity, different attitudes towards traditional arts and different social practices and ways of life.

The present study, which gives partial confirmation to some of these convictions, is a first attempt to address these issues within a quantitative approach.

1. Introduction

In recent years, a change in the articulation of the geminate plosive alveolar or post-alveolar [dɖ] ("la plus caractéristique des cacuminals du sarde", as pointed out in [1], p. 159, derived from the latin /ll/ and typically found in intervocalic position, e.g., CABALLUS > ['kaɖɖu], historically attested in [2], p. 73 and [3], pp. 15-17) has been observed in the Sardinian language, the retroflex sound being replaced by the [dd] sound, analogous to the sound of the relevant Italian voiced dental occlusive (see, for instance, [4], p. 106). Many native speakers believe that the [dɖ] > [dd] change is related not only to geography and social factors such as age, social class, gender, education, but also to different attitudes towards Sardinian traditions and different ways of life. In the context of substantial diglossia present in large areas of Sardinia [5], [6], [7], where (i) local languages are being progressively overtaken by Italian in ordinary use [8], (ii) the fear of language decay is often manifested [9], (iii) a regional law which encourages the use of minority languages has been adopted [10], (iv) a strong debate on what the "official" orthography of Sardinian should be is present [9], [11], the pronunciation of the /dd/ sound nowadays carries different and almost opposite social values. The retroflex pronunciation is felt by some native speakers as a form of lower prestige, while, conversely, it is appreciated by other native speakers as an important linguistic indicator, almost a symbol of language loyalty and a sign of a common Sardinian identity which overcomes internal boundaries.

In this pilot study, a first attempt is made to verify within a quantitative approach whether and what social, areal and cultural factors are involved in the phonetic change under examination.

2. Method

2.1. Fieldwork: subjects, data elicitation and collection

The subjects involved in the research were given two tasks: to read a text in Sardinian language twice, and to complete a questionnaire.

The ethnographic survey was conducted during summer /autumn 2010 in three different places in Sardinia (the capital of the region, Cagliari, and two villages – Belvì and Irgoli – placed respectively in the centre and on the north-eastern coast of the island). In total, 74 subjects (41 male, 33 female) aged between 16 and 84 and with an average age of 35.2 years took part in the research. The recordings were made in different public and private locations, in relatively quiet rooms, with a portable digital recorder (Tascam DR100) and a headset microphone (Shure WH30).

For the first task, the administered text was a simple tale for children of about one hundred words where a target word containing the observed sound ([pittʃɔk'kedɖu] / [pittʃɔk'keddu] or [pittsin'nedɖu] / [pittsin'neddu] 'little boy' according to the campidanese and logudorese varieties) was present in three sentences (here in the Sardinian-campidanese version and in English translation): (i) "Una di, unu *piccioccheddu*, girendi a cuaddu in padenti, agattada una sirboni" ('One day, a *little boy*, while riding through the wood on his horse, meets a boar'); (ii) "Ita bolis de mei, *piccioccheddu*?" ('What do you want from me, *little boy*?'); (iii) "Su *piccioccheddu*, intendendi custus fueddus de sirboni, si spantada e si fuidi" ('The *little boy*, on hearing these words coming from the boar, is frightened and runs away'). The subjects were not made aware of the specific purpose of the analysis; they were told that the recordings would be used for analyses concerning Sardinian phonetics and the use of this language.

The second task requested was to fill in a questionnaire in which they were asked to give essential information about their personal and social condition (i.e. age, profession, residence, education etc.) and to express, by means of a five-point Likert scale, their opinion and attitude and/or to report information about their personal experience and habits on issues related to the topics synthetically indicated in Table 1.

2.1. Corpus and preliminary treatment of the data

The corpus of recordings obtained through the fieldwork consists of 74 (number of subjects) x 2 (recordings) x 3 (occurrences of the target word) = 444-1 (one incomplete pronunciation of the target word has been cancelled from the list) = 443 items. The target words, isolated from the context of the sentence, were randomly proposed to experts in the

Sardinian language in a listening test in order to establish if the pronunciation of the /dd/ sound in each word was considered as the ‘traditional’ retroflexed [d̠] one (R from now on) or as the ‘modern’ dental [dd] one (D from now on).

A	USE OF SARDINIAN LANGUAGE
A1	<i>In family during infancy</i>
A2	<i>With parents during infancy</i>
A3	<i>By parents (between each other)</i>
A4	<i>In family nowadays</i>
A5	<i>With friends</i>
A6	<i>Knowledge of Sardinian language (self-evaluation)</i>
B.FL	KNOWLEDGE OF FOREIGN LANGUAGES
C	ADVANCEMENT AND INSTITUTIONALIZATION OF SARDINIAN LANGUAGE
C1	<i>Agreement with proposals concerning the use of Sardinian in schools</i>
C2	<i>Agreement with proposals concerning the use of Sardinian in public administration</i>
D	ART TRADITIONS
D1	<i>Practice of Sardinian traditional dance</i>
D2	<i>Appraisal of poetical duels</i>
D3	<i>Appraisal of Canto in Re (singing with guitar accompaniment)</i>
D4	<i>Appraisal of male choirs a sa nuoresa (in the Nuoro style)</i>
D5	<i>Appraisal of a tenore singing</i>
D6	<i>General attitudes towards Sardinian artistic traditions</i>
D7	<i>Participation in folk dance groups</i>
E	POLITICS
E1	<i>Interest in parties whose program is specifically inspired by Sardinian identity</i>
E2	<i>Interest in the defence of the Sardinian culture and traditions</i>
F	MEDIA AND SARDINIAN CULTURE
F1	<i>Listening to broadcasts in Sardinian language</i>
F2	<i>Listening to broadcasts dedicated to Sardinian traditional music and dance</i>
G	TRADITIONAL CRAFT AND CLOTHING
G1	<i>Possession of Sardinian handicrafts</i>
G2	<i>Use of Sardinian costumes</i>
H	FOOD
H1	<i>Use of traditional bread</i>
H2	<i>Use of traditional and typical food</i>
H3	<i>Use of local wine</i>
I	SOCIAL LIFE
I1	<i>Parish</i>
I2	<i>Bar</i>
I3	<i>Sport activities</i>
I4	<i>Cultural associations</i>
I5	<i>Voluntary groups</i>
I6	<i>Universitary groups</i>

Table 1: List of the topics in the questionnaire (on the left, the symbol which identifies each entry).

Four natives and expert in Sardinian language (all of them studied Linguistic and Sardinian at Cagliari University and were working in public offices for the promotion of the Sardinian language) were asked to listen and to give a score to each item from 1 (D) to 5 (R), according to the pronunciation of the sound (from [dd] to [d̠]) they perceived.

The consensus estimates between the evaluators, measured by means of Cohen’s κ statistics, resulted to be rather weak, especially with respect to the judgments expressed by one of the evaluators (here identified as R4) in comparison with those given by the other three, as Figure 1 shows. This means that, in several cases, the judgments given by one of the evaluators were very different from those given by the others. For this reason, the ratings assigned by this expert were excluded in the process of evaluation of the pronunciation (see Table 2 for statistics with weights = squared).

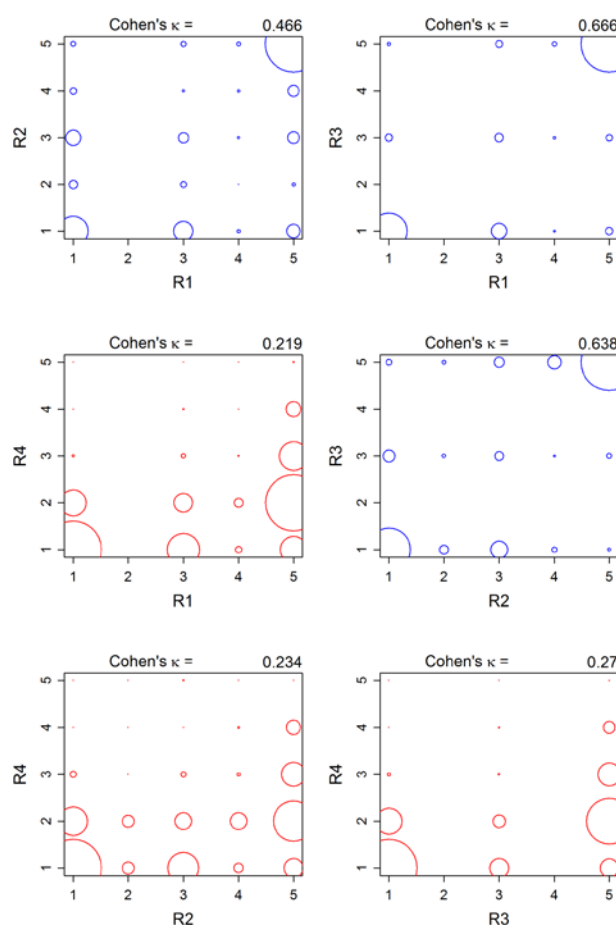


Figure 1: Consensus between pairs of evaluators. The radii of the circles in the bubble plots are proportional to the number of occurrences. In red, the plots corresponding to the evaluator identified as R4, featuring a weak agreement with the other evaluators.

The ratings given by the native experts appear to indicate that they adopted a rather strong binary perceptive/phonemic categorization, based on the dichotomy between (traditional / ‘true’ Sardinian) R and (‘modern’ / Italian) D, while being aware that this view simplifies the variability along a continuum of articulatory realizations of allophones [12].

The consistency estimates of the ratings showed results quite similar to those of the consensus, indicating again a lower degree of consistency between the pairs including the evaluator R4 (see Table 2).

Raters	Consensus Cohen's κ	Consistency Spearman's ρ
R1-R2	0.465	0.492
R1-R3	0.665	0.663
R1-R4	0.219	0.451
R2-R3	0.638	0.647
R2-R4	0.234	0.402
R3-R4	0.269	0.488

Table 2: Consensus and consistency estimates. Low values (<0.3) in italic.

In order to obtain a reliable assessment of the typical pronunciation of the /dd/ sound from each subject, the data were subjected to the following two-step process of filtering. The first filter aimed at excluding items where the pronunciation of the sound was evaluated by the majority of the experts as intermediate between R and D (i.e. received at least two ratings = 3). The second filter aimed at excluding from the statistic analysis those subjects whose pronunciation of the /dd/ sound in the target words appeared intermediate between R and D or not clearly defined according to the evaluators' judgments. This operation was carried out by associating the mean of the ratings for each item with the relevant speaker. When the mean value of the ratings fell in an intermediate area between D and R ($2.7 \leq \text{rating mean} \leq 3.3$), the relevant subject was excluded (i.e. his/her pronunciation of the sound was considered to be intermediate, uncertain or not sufficiently stable to be considered for the successive statistical treatment). As a result of the filtering process, 8 out of 74 subjects were excluded from the analysis.

The preliminary treatment of the data ended with the grouping of the answers according to age ([1] ≤ 20 , [2] 21-50 and [3] >50 years old), profession ([ST]udents, [L]ow [C]lass and [H]igh [C]lass), residence ([CA]gliari, [S]outhern [V]illages and [N]orthern [V]illages) and level of agreement expressed by the informants ([L]ow, [M]edium and [H]igh).

3. Analysis

The purpose of this pilot study was to ascertain if the information about the subjects obtained through the questionnaire is able to give a coherent picture of the social factors and the personal attitudes of the speakers which influence the sound change $R > D$, as claimed by some native Sardinian speakers.

To that end, the variables derived from the answers given by the informants in the questionnaire have been tested as possible predictors of the realization of the phoneme as D or R. A series of simple one-factor logistic regression models were fitted to the data in order to evaluate the main effects for each factor individually. The factors that reached the level of significance ($p < .05$) according to the chi-squared test statistics are reported in Table 3.

An analysis of the correlation between the relevant factors showed that some of them, belonging to the same category, were strongly correlated (see Figure 2). In particular, similar trends were observed among the following groups of

variables: (i) D2-D3-D4-D5, concerning attitudes towards some Sardinian traditional arts; (ii) F1-F2, concerning the use of the media; (iii) D1-D7, concerning attitudes towards Sardinian traditional dancing; (iv) A2-A4-A5, concerning the use of the Sardinian language.

Factor	χ^2	d.f.	p-value
Age	15.947	2	0.000345
Residence	22.322	2	0.000014
Profession	22.55	2	0.000013
A2	6.498	2	0.038808
A3	9.866	2	0.007203
A4	11.386	2	0.00337
A5	18.749	2	0.000085
B.FL	6.951	1	0.008377
D1	9.085	2	0.010647
D2	11.488	2	0.003202
D3	12.627	2	0.001811
D4	15.509	2	0.000429
D5	19.8	2	0.00005
D7	9.582	2	0.008302
F1	6.712	2	0.034876
F2	11.98	2	0.002504
I1	8.215	2	0.016451

Table 3: List of significant factors ($p < .05$).

The degree of correlation between some of the variables indicated a redundancy of information and pointed to the opportunity of reducing the analysis of the distributions of the D/R pronunciation to the most significant factors (see Figure 3).

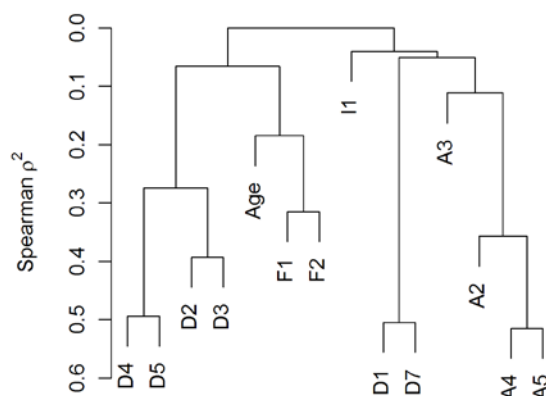


Figure 2: Hierarchical clustering of 14 factors (similarity measure: Spearman's ρ^2)

Social factors. As far as social factors like profession and age are concerned, the most significant results were that D was common among young people (83%) and students (88%), while R prevailed in older people (70%) and in the lower class (94%). The data relevant to the knowledge of foreign language(s) (variable B.FL) confirmed the fact that while R was the standard pronunciation among people who did not know a foreign language (i.e. with a lower level of education, $R=90\%$), D was more common in the opposite group ($D=63\%$).

Area. Residence appeared to be a very important factor. While in the southern area of Sardinia D prevailed (both in the capital Cagliari and in the villages), in the villages in the north of the island R was strongly predominant (R=88%).

Linguistic practice. There was a clear trend indicating that the use of Sardinian when speaking to friends (variable A5) and in the family (variable A4) was directly proportional to R (R=78% for those who usually speak Sardinian in those contexts; R=13% for those who do not). This relation was less evident in the case of the variable A3 (relevant to the use of the Sardinian language between the two parents): for medium and lower levels, the percentages of D definitely prevailed (around 90%), but for higher level the predominance of R was not significant (R=59%).

Attitudes. Attitudes towards Sardinian oral traditional arts (music, singing and dance) showed a directly proportional relation between the interest towards these arts and the prevalence of R. As for the variable D5 (appreciation of traditional *a tenore* singing), the R percentage is 81% for the 'admirers' (those who expressed a high level of appreciation) vs 13% for the 'denigrators' (those who expressed a low level of appreciation). With respect to the variable I1 (attendance at parish meetings), the data did not indicate a clear trend, and seemed somewhat associated with the data relevant to the age factor.

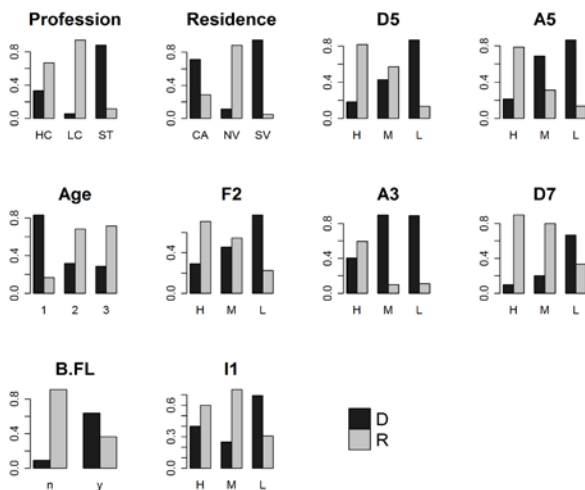


Figure 3: Proportions of D and R pronunciations according to different sociolinguistic factors.

4. Conclusions

The results of this pilot study, given the relatively limited number of informants (74 subjects), certainly requires further investigation in order to be conclusive. These results, while not confirming typical associations such as the one between gender and linguistic change [13] (in this case, women do not seem inclined towards the 'new' dental articulation of the consonant more than men do), support the idea that a phonetic change is currently taking place and that the different articulation of the sound is both related to social and areal factors and to different attitudes towards aspects of the traditional Sardinian culture. The dental articulation, analogous to the Italian pronunciation, has a wider diffusion in the category of young students and in the towns of the

southern area, while the retroflex articulation prevails in subjects of the lower class and in those who live in the villages in the northern part of the island.

While attitudes towards politics aimed at emphasizing Sardinian culture and specific socio-cultural habits (like food, clothing and furnishing habits, just as attendance at particular social environments) do not appear to be significant predictors of the [dd] / [d̥d̥] articulation, positive attitudes towards traditional arts like singing and dancing are strongly correlated with the conservative [d̥d̥] pronunciation. This evidence confirms the largely shared idea that language and oral traditional arts have a primary role in the definition of the so-called cultural heritage of Sardinia.

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