

# ON STRESSED VOWEL DURATIONS, VOWEL-CONSONANT CONTACT TYPES AND SYLLABLE SHAPES IN THE ITALO-ROMANCE AREA

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## ABSTRACT

This study deals with three phenomena found in Italo-Romance area and discusses their interplay. Both phonological and phonetic data support the claim that in the Frignanese dialects investigated the vowel quantity contrast is the crucial fact and a good predictor for the other phenomena under analysis, namely the different ways of linking the stressed vowel with the following consonant and the different syllabification types in disyllables. It is unquestionable that in Frignano area stress conditions the occurrence of vowel quantity contrasts; moreover, in a tentative way, we propose that stress co-determines the differences found in vowel-consonant contact and in syllabification. It is worth noticing that in Frignanese dialects the main acoustic correlate of stress is vowel intensity and that in world languages displaying systematic close/loose contact distinction a strong dynamic stress is associated with the presence of close contact after short vowels.

## 1. INTRODUCTION

This study is an attempt to account for some controversial aspects of sound patterns of dialects spoken in Northern Italy. Several Italo-Romance varieties of Emilia-Romagna have been analyzed from both phonetic and phonological point of view. We have particularly focussed on three issues: (a) vowel quantity contrast, (b) kind of contact between the stressed vowel and the postvocalic consonant, (c) syllabification type in disyllabic words. Some characteristics of these phenomena and their interplay are briefly discussed in order to contribute to a better understanding of the problems under consideration. The interpretations proposed in the present paper are in disagreement with some commonly held views about the romance languages.

## 2. PROBLEMS AND PROPOSALS

**2.1.** Several dialects of Frignano area<sup>1</sup> make a contrastive use of the nine long vowels /i:, y:, u:, e:, ø:, o:, ε:, ɔ:, a:/ and the four short vowels /e, ø, ɔ, a/ when the syllables are stressed. Our data show that quantity contrasts:

- (1) are found only under stress;
- (2) are restricted to a subset of the thirteen-vowel system, namely the four pairs /e:, ø:, ɔ:, a:/ and /e, ø, ɔ, a/;
- (3) occur in three word structures, precisely in monosyllables with a final vowel (e.g. /CV:/ vs /CV/), in monosyllables with a final consonant (e.g. /CV:C/ vs /CVC/) and in disyllables stressed on the first syllable (e.g. /CV:CV/ vs /CVCV/);
- (4) have as their domain the vowel segment and not the "vowel + consonant" sequence.

**2.2.** The main results of previous experimental investigations about a Frignanese dialect<sup>2</sup> [1,2] are the following. The duration

differences between the long phonemes /e:, ø:, ɔ:, a:/ and the short phonemes /e, ø, ɔ, a/ are considerable and relatively stable in all subjects, in all vowels and in all word structures: the short-to-long ratio is on the average about .49.<sup>3</sup> The measurements of the formant frequencies indicate that the short vowels differ to some extent from their long counterparts: generally the F1 values increase in [e, ø, ɔ] and decrease in [a]; the F2 values decrease in [e, ø] and decrease in [ɔ, a].<sup>4</sup> The consonant following the stressed vowel displays a divergent behaviour according to the word structure. The consonant durations after V and after V: are nearly the same in disyllables (the ratio being around .99), whereas result somewhat different in monosyllables, i.e. higher after V than after V: (the ratio being around .81).

These data suggest that the vowel duration differences need to be taken as the strongest acoustic correlate for the Frignanese quantity contrasts, whereas the vowel spectral differences and the consonant duration differences are concomitant factors enhancing the long/short vowel distinctions.

**2.3.** A new experimental research, which is in progress, examines other acoustic properties of /CV:CV/ and /CVCV/ disyllabic words:<sup>5</sup> intensity, fundamental frequency and final formant transitions of the stressed vowel; duration and intensity of the postvocalic consonant; duration, intensity and fundamental frequency of the unstressed vowel. The stressed vowels are /e:, ø:, ɔ:, a:/ vs /e, ø, ɔ, a/, the postvocalic consonants are /p, t, k, b, d, g, f, s, m, n, l/, and the unstressed vowel is /a/.

The measurements, taken on a small number of minimal pairs, where the postvocalic consonants are both obstruents or sonorants, support, though in a tentative way, some interesting hypotheses. First, the production data indicate that in Frignanese dialects the difference between stressed and unstressed vowels consists mainly in higher intensity of the stressed ones. Second, the analysis of acoustic intensity of stressed vowels shows that the short and the corresponding long vowels differ in many aspects, such as the intensity movement, the distance from the peak to the end of the vowel, the extent and the steepness of intensity fall from the peak to the end of the vowel.

In our opinion these results, however incomplete they are, on one hand help better understand the characteristics of the vowel quantity contrasts found in Emilia-Romagna and, on the other, they throw light on the problems raised by the ways of linking the stressed vowel with the following consonant and by the kinds of syllabification.

**2.4.** To our hearing, short stressed vowels produced by the Frignanese speakers in three word structures above mentioned give the impression of being particularly short and abruptly interrupted. There are two different transitions from stressed

vowel to consonant in the words where the vowel is followed by a consonant, namely the so-called close contact and the so-called loose contact.<sup>6</sup> In the former case the vowel sounds as if it is cut off by the consonant, whereas in the latter case the vowel sounds as if it is allowed to fulfil its natural course [3, 4, 5]. Systematically, short vowels have close contact and long vowels have loose contact.

The close/loose contact distinction and the short/long vowel distinction are clearly associated, and the latter seems to be the dominating factor, whereas the former seems to be an additional one. We believe that further investigations are required in order to determine the physical basis for the auditory impression of the differences in vocal-consonant contact, but preliminary data lead to suppose that acoustic intensity both of stressed vowel and of postvocalic consonant is involved in such phenomenon.

**2.5.** The disyllabic words raise the question of how to syllabify /CV:CV/ and /CVCV/ Frignanese forms. The consonant, when preceded by a long stressed vowel, is syllabified with the following unstressed vowel: in this case the stressed syllable is evidently open. When the consonant is preceded by a short stressed vowel, there are two alternative syllabification possibilities:

- (1) the consonant is syllabified with the stressed vowel;
- (2) the consonant is analyzed as ambisyllabic, i.e. is assigned to both syllables, functioning as coda to the first and as onset to the second. In these cases the stressed syllable is always closed. So, the first syllable of the Frignanese disyllabic words is open or closed according to whether the vowel is long or short, and according to whether the vowel-consonant contact is loose or close. Such distinction between syllable shapes is based of course on auditory impressions rather than on physical facts.

**2.6.** There are still many questions unanswered like the following ones: how the phenomena examined in this paper are related to one another? what is actual hierarchy among them? which are the possible directions of cause and effect? The contrastive use of vowel duration differences in monosyllables with a final vowel allows us to propose the following interpretation: in Emilia-Romagna the vowel quantity contrast is the crucial fact and a good predictor for different vowel-consonant contact types and different syllable shapes, depending on short/long distinction which is found when vowels are under stress.

It is worthy of note that in world languages with a close/loose contact distinction the presence of close contact after short vowels is related to a number of other properties which are language-specific [5]. We mean specifically the strong dynamic stress, the high occurrence of closed syllables and the spectral differences between the short and the corresponding long vowels.<sup>7</sup> In the framework of an investigation about such bundle of characteristics, the experimental results, indicating that in Frignano area the main acoustic correlate of stress is vowel intensity, provide an important suggestion and require further discussion.

### 3. CONCLUSION

The present study, in line with previous ones, support the conclusion that vowel quantity contrasts do occur in Italo-Romance area; moreover, the analyzed dialects display

systematic differences in vowel-consonant contact. It is worth noticing that these two findings are in disagreement with some claims made in the literature about Romance sound patterns. As regard to the quantity contrasts, it is a widespread opinion that they are absent in Romance languages; as for close/loose contact distinctions, according to traditional descriptions they are peculiar to some Germanic languages, opposed in this respect to Romance and Slavonic languages. At a more general level of discussion, we emphasize the importance of a closer examination of phonetic and phonological data, from both the synchronic and the diachronic point of view, in order to revise several assumptions found in textbooks of Romance linguistics and Italian dialectology [6, 7].

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### NOTES

1. Frignano is located in Emilia-Romagna (province of Modena).
2. Subjects of these investigations speak Crocette's dialect, which is representative of the Middle Frignano area.
3. In this summary we report the averaged ratios of subjects SG and GB, excluding subject RI, for the duration of the stressed vowels and the postvocalic consonant.
4. We observe that the extent of quality differences associated with the long/short distinction vary according to vowel type, but there is a general tendency, which is found in many quantity languages: our formant charts show that long vowels are characterized by more peripheral positions.
5. We give some examples of minimal and quasi-minimal pairs found in Crocette's dialect: /re:da/ vs /reda/; /be:ga/ vs /dega/; /pe:la/ vs /pela/; /kø:ga/ vs /tøga/; /bø:ta/ vs /bøta/; /tø:ka/ vs /tøka/; /pø:sa/ vs /pøsa/; /sa:pa/ vs /sapa/; /fa:ta/ vs /fata/; /fa:sa/ vs /fasa/; /fa:ma/ vs /fama/; /pa:na/ vs /pana/.
6. Regarding the terms used for the phenomena under consideration, we refer to current terminology, where we may find descriptions such as the following ones: stark/schwach geschnittener Silbenakzent; fester/loser Anschluss; close/loose contact; close/open contact; succession ferme/lâche; coupe ferme/lâche; abrupt/smooth cut.
7. As for quality differences, they vary in extent, but show similar tendencies: the short vowels are generally lowered and centralized.

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