Prosodic Variation in the Basque Language: Stress Areas

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1. Introduction

The main objective of this paper is to explain the first studies and the necessary steps to achieve the creation of a suitable ToBI system for the Basque language. But this is only the first objective of the MICINN project. After this, it will come the creation of didactic tools to teach the correct Basque intonation in schools and the maintenance and completion of the data gathered in the Dialectal Spoken Corpus of Basque-EDAK-CODEUS (Aurrekoetxea, Sánchez & Odriozola 2009).

This work is managed by the EUDIA research team of the Basque University in collaboration with the most important researchers of Basque prosody such as Jose Ignacio Hualde and Gorka Elordieta, along with other researchers including Pilar Prieto, the leader of the Grupo de Estudios de Prosodia, which has created the Cat-ToBI and the Spanish-ToBI.

The prosodic system of the Basque language has nothing to do with the prosodic system of neighbouring languages.

Historically, many researchers have highlighted that Basque accent systems are very complex: it has a wide variety of types of stress given the relatively small geographical extension of the language. These types range from tonal accent systems, reminiscent of the same type of Tokyo Japanese accent, to those fixed with no distinctive value, through to types similar to those of the Scandinavian languages. One of such observations is made by Van der Hulst (Hulst, Goedemans & Zanten 2010: 476):

The Basque dialects present a great diversity of word-prosodic systems. The Basque word-prosodic systems range from lexical pitch-accent and stress-accent systems in the Western dialects to weight-insensitive accent on the second syllable in some Central Basque dialects and weight-insensitive accent on the penultimate syllable in some Eastern dialects. Thus, there is not only a distinction between pitch-accent and accent systems, and between weight-sensitive and weight-insensitive systems, but also, within the weight-insensitive accent systems, accent can be assigned from either the right or the left edge. (...) This enormous variety in such a small territory is reminiscent of the situation in the Caucasus.

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2 http://prosodia.upf.edu/home/en/index.php
Apart from that, in some varieties the position of the accented syllable is determined by general rules and has no distinctive value. Although it is very complex and there are still many areas that remain poorly understood, in the last three decades a significant progress in this field has been made, mainly thanks to the work of Hualde among others.

2. The basic material

The basic material we have used to carry out this work is that collected by I. Gaminde (1998) and the EDAK corpus, which gathers data about accent and intonation in all areas of Basque, with a net of 100 localities. Other material includes new data records made in 2011 on some areas of the Basque language.

3. Different steps

The steps we have taken so far to achieve the creation of the ToBI system for the Basque language (Eusk_ToBI) are the following:

a) Decide the parameters we need to find out the rules of the stress accent in each locality.

b) Describe the stress accent of different varieties of the Basque language. To make sure that all varieties are represented, we have selected 100 localities covering all the dialectal areas we know.

c) Find out the intonational curve of each type of sentences (e.g. interrogative) in each variety.

d) Decide the intonational pattern of each type of sentences for the standard variety.

In this paper we discuss the first two points only, and, for greater understanding, we include the area of each rule in a map.

4. Criteria for defining stress accent

The purpose of this section is to discuss the criteria used for classification of the stress accent. These criteria are divided into two groups: those required to explain the different types of stress and those which relate to the level of distinctive accents.

These criteria are based on ideas developed by Bailey (2007), Heinz (2010), Hulst & Goedemans (2010), Hulst et al. (2010) and Hulst & Goedemans (2009). In order to apply them to the Basque language, the works of Gaminde (1998, 2010, 2011) and Hualde (1997, 2006) were consulted, among others.

The general criteria used to characterize the different types of accentuation can be grouped as follows:

a) The domain of accent insertion: word stem, prosodic word, phrase, all located in the focus position
b) The direction to count syllables: [> or <] and the position of the accented syllable with respect to the nearest boundary: [1, 2, [3, 2], 1]
c) Weight of syllables, number of syllables and extrametricality
d) Interaction between stress and tone

4.1. The domain of accent

4.1.1. Focus position

In varieties which distinguish between unaccented and accented words, the domain of the accent is entirely located before the verb in focus position, when there is no accented word. This type is found in the varieties of pitch accent of northern Biscay (1).

(1) gi/zonak sagarra\ saldu dau
    the man-ERG sg. the apple-ABS sg. sold has
    ‘The man has sold the apple’.

4.1.2. Phrases

In other varieties, accent units are phrases; this happens for example among some young speakers of pitch accent varieties (2):

(2) gi/zonak\ sa/garra\ saldu dau (young people)
    the man-ERG sg. the apple-ABS sg. sold has
    ‘The man has sold the apple’.

4.1.3. Clitic group

First of all, we should explain the definition of what we understand by clitic and how we have used it in this work.

We take as a clitic any word which does not have prosodic autonomy and which has one or two syllables. One characteristic of clitics is that they have to be pronounced along with the following word. A clitic group is made up of a main word plus a proclitic or an enclitic; for example

(3) ez dakit ba > eztakipa
    not I know well
    ‘I don’t know well’

We consider the following words to be clitics: ez (‘not’), ba (‘well’), the copula da (‘it is’) and all synthetic verbs (dago [‘it/he/she is’], doa [‘it/he/she go’], e.g.).

As has been noted in some varieties, although the accent can occupy a given position in isolated words, within a clitic group this position may vary. This can be seen in (4) with the clitic verb "da" (is):

(4) úre BUT uré da
    water the water the is
    ‘It is water’
4.1.4. Prosodic word

The domain of stress may be the prosodic word; in these cases the position of the accent does not change the clitic group (5).

(5) ûre AND ûre da
    water the water the is
    'It is water'

4.1.5. Word stem

As suggested in some works, there are varieties in which the accent domain corresponds to the word stem. This is because certain phonological processes are conditioned by the position of the accent, suggesting that it must be assigned before the rules that govern these processes can be applied. This relationship has mainly been described in Zumaia (Gaminde & Hazas 1998), Lesaka (Gaminde 1998) and Azkaine (Gaminde 1998).

4.2. The direction to count syllables and the position of the accented syllable

Combining the direction to count syllables (left to right or right to left) and the position of the accented syllable, we get six possible combinations:

1: Accent on the first syllable, from left to right.
2: Accent on the second syllable, from left to right.
3: Accent on the third syllable, from left to right.
1: Accent on the first syllable, from right to left.
2: Accent on the second syllable, from right to left.
3: Accent on the third syllable, from right to left. This combination is not found in Basque, though it is possible in other languages such as Macedonian (Hulst et al. 2010).

4.3. Syllables

Three types of interactions between syllables and accent have been found so far: the number of syllables of the word stem, syllable weight and extrametricality.

In some varieties, when the word stem has one or two syllables, an accent rule is used and when the stem has a greater number of syllables, another rule is used (This is the case of the variety of Arratia, in the southwest part of the Basque Country, near to Bilbao).

In the same way, syllable weight can interact with accent. In Hondarribia (Hualde & Sagarzazu 1991) and Zugarramudi Basque (Gaminde 1998), for example, the syllables with a consonant in coda position are considered to be heavy and attract accent.

As for extrametricality, in many varieties accent cannot be inserted on the last syllable of the domain. Such a syllable may be ignored for the purposes of determining the accent structure and it thus becomes extrametrical.

4.4. Interaction between stress and tone

Two types of interactions between accent position and tone have been detected. On the one hand, the word accent type determines the type of tone associated with the accented
syllable, as in the case of Goizueta (Hualde, Lujanbio & Torreira 2008) and other varieties of Navarre. On the other hand, in the northern varieties of Biscay it is the tone which determines the position of the accent (Hualde 1997; Elordieta 2008; Gaminde 2010).

4.5. Level of distinctive accents

Finally, with regard to the distinctiveness of the accent of the varieties analyzed, four criteria have been proposed to explain the types found. As already mentioned, in some varieties the position of the accented syllable is determined by general rules and has no distinctive value. These varieties are at one end of a possible scale of distinction. The criteria for completing the levels on the scale are the following:

a) Distinction between accented and unaccented words
b) Existence of lexical contrasts
c) Existence of exceptions to general rules without lexical contrasts
d) Distinction between singular and plural by means of the position of the accented syllable

In this paper we have analyzed only the criteria (b) and (d) because we still do not have all the necessary data to analyze the other criteria.

5. Stress patterns and stress dialectal areas

Following these steps, we have used 17 rules to determine the stress pattern of each locality. For making the maps, we used the VDM program managed by professor Goebel.

5.1. Distinction between singular and plural by the position of the accented syllable

MAP 1. Distinction between singular and plural by the position of the accented syllable
There are more localities without the distinction (55 localities) than with this distinction (45 localities). The two far ends of the map are more propitious for distinguishing singular and plural with a differently accented syllable. But in some central localities, the singular and plural can also be distinguished by accent.

5.2. Existence of lexical contrast

The localities located in the West and in central areas have mainly lexical contrast, as shown by the second map. However, in this area there are also some localities, situated in the southern part, which do not have lexical contrast.

If we take all the localities, there are more localities with lexical contrast (68) than without it (32 localities).
5.3. Focus as stress unit

This third map clearly shows us that just a few localities situated in the northern part of Biscay have the stress in the focus (15 localities). The majority of the localities (85) do not have this rule.

5.4. Clitics as stress unit
This map shows that clitic unity of the stress is found more in the western part of the Basque Country, where all the localities have clitic stress. Nevertheless, in some central and eastern areas the domain accent is also situated in the clitic group.

5.5. Word as stress unit

MAP 5. Word as stress unit

In contrast with the previous map, it is the localities situated in the eastern part which have words as stress units. All localities of the West and the majority of the central area do not know this feature.

5.6. Root as stress unit

MAP 6. Root as stress unit
There are very few localities which have the root as stress unit: only 11. All of these are situated in the central area, being part of different traditional dialects: Biscayan, Guipuzcoan, High Navarrais and Labourdin.

5.7. Position of the stress: first syllable from the left: [1]

MAP 7. Position of the stress: first syllable from the left: [1]

The stress on the first syllable from right to left is found in a coherent area. Although this rule only fits in 8 localities, all of these are situated in the central-southern part and all 8 belong to the High Navarrais dialect.

5.8. Position of the stress: second syllable from the left: [2]

MAP 8. Position of the stress: second syllable from the left: [2]
The rule that fixes the stress on the second syllable from the left is found in the central and western areas, except in the northern part of Biscay and some other small areas. In the eastern part the rule is not found. On the whole, there are more localities which do not have this feature (51) than localities which do have it (49).

5.9. Position of the stress: third syllable from the left: [3]

Only 4 localities have the stress on the third syllable from the left. All of these are located in the central area, belonging to the Guipuscan dialect.

There is no locality which takes into account the other direction, that is, on the third syllable from right to left.

5.10. Position of the stress: second syllable from the right: [2]
In the tenth map, we see that stress syllable on the second from the right is found in all the localities of the eastern part of the territory. It is also found in some small areas in the western part.

5.11. Position of the stress: first syllable from the right: 1]

The last rule regarding direction only fits in the western area, belonging to the Biscayan dialect. There are only 15 localities where this stress position is used.

5.12. Quantity of syllables

MAP 12. Quantity of syllables
Syllable quantity is important for the accent in two main areas, one in the west and the other in the central southern area, while there are also some isolated localities in the central northern area. Nevertheless, not many localities have this feature.

5.13. The weight of the syllable

MAP 13. The weight of the syllable

The weight of the syllable affects the stress in only two localities: Zugarramurdi and Hondarribia, both in the central northern area.

5.14. Last Syllable

MAP 14: Last Syllable
The distribution of the fourteenth rule is more complex, as it is located in different areas: in the Biscayan dialect in the west; in the central area divided into two smaller areas; and in the eastern area, where the Souletin dialect is spoken.

Although these varieties are extrametrical, there can be an accent on the last syllable because other rules have been applied after extrametricality.

5.15. Extrametrical rule

MAP 15. Extrametrical rule

There is a continuum between south-western and central western localities where this rule is found. There are more localities which permit accent on the last syllable (57) than localities which do not (43).

5.16. Interaction between stress and tone or vice versa

MAP 16. Interaction between stress and tone or vice versa
This last map shows the theory previously mentioned in this paper which is that there are two possibilities: either tone determines the position of accent or the other way round, it is the accent which determines the tone.

Here we can see two areas: in the first one, the area in the northern part of Biscay, there are 15 localities where tone determines the position of the accent, while in the other one, in the high Navarrais dialect, there are 8 localities where it is the word accent which determines the type of tone.

6. Classification of the dialectal areas according to the prosody

MAP 17. Classification of the dialectal areas according to the prosody

We have selected the average linkage method and divided the dendrogram into 6 groups or clusters. The result (Map 17) is the first synthetic map of prosody which has been made in Basque dialectology.

In this map, we have not taken into account the order of the rules. That is, all the rules are equal, without any hierarchy.

We can see that there is a wide and very coherent area in the eastern part of the territory (the darkest blue one). Another area (in red) is drawn in the north-western part, which is smaller but also very coherent. A third area (in yellow) is located in the south-west. This area is very small as it includes only 4 localities. In pale green, there is an area located in the western and central areas. It is very large, but it is not at all coherent. Finally, there are two more areas with few localities, each of which is found in the central area of the map: the darkest green and the pale blue.

7. Dialectal classification and prosodic classification

If we compare this synthetic map with maps used in Basque dialectology, we can see big differences between them.
Firstly, if we compare our map with the map made by L. L. Bonaparte (1868), we can see that Bonaparte’s delimitation of the dialects does not match with ours.

If we do the same comparison with a more current map, the one made by Zuazo in 1998, we can see more or less the same situation: his delimitation and ours do not match.

That is to say, neither Bonaparte nor Zuazo have taken prosodic features into account in their dialectal classifications.

8. Conclusions

This is only the first step that our research team has taken, the aim of which is to obtain a suitable ToBI system for the Basque language. We have to be are grateful to G. Elordieta, J. I. Hualde and P. Prieto for their help in this way project.
References


