MELISMS AND SUBJECTIVITY IN BASAA ORAL SPONTANEOUS DISCOURSE

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This article examines the role of prosody in conveying information on the speaker's subjectivity in spontaneous oral discourse. This information may refer to her or his communicative intention and displaying the speaker's general affect. This study lies on the assumption that prosody organization is twofold: on one hand, it is related to the overall organisation of phrasing at the group and sentence levels, and on the other hand, it conveys information about the affective status and expressiveness of the speaker. The phenomenon called *melism* is related to the latest level, because it displays among others, the speaker's subjectivity.

Cet article examine le rôle de la prosodie dans la transmission des informations relatives à la subjectivité du sujet parlant dans le cadre du discours oral spontané. Ces informations doivent refléter son intention communicative, et afficher des éléments qui montrent son affect. Cette étude se fonde sur l'hypothèse que l'organisation de la prosodie est double : d'une part, elle se base sur l'organisation globale et la structuration de la phrase et d'autre part, elle délivre des informations sur l'état affectif et voire, l'expressivité du locuteur. Le phénomène appelé *mélisme* est relié à ce dernier niveau, car il exhale entre autres la subjectivité du locuteur.

0. INTRODUCTION

Over the last years, many questions have been addressed concerning prosody as well as the interface between prosody and the other linguistic and pragmatic domains. This phenomenon resulted in the organization of many conferences (*Interfaces prosodiques*, *Interfaces Discours-Prosodie*, Speech Prosody, *Journées d'étude de la prosodie*). However, many questions are still open. In this paper, the role of prosody in conveying information on the speaker's subjectivity in spontaneous oral discourse is analyzed. This information refers to her or his communicative intention and displaying the speaker's general affect. The basic assumption on which this study lies is that prosody organization is twofold: on one hand, it is related to the overall organisation of phrasing at the group and sentence levels, that is namely the intonation structure; and on the other hand, it conveys information about the affective status and expressiveness of the speaker, that phenomenon Caelen-Haumont and Bel (2000) termed *melism*.

This work is grounded on the Bàsàa language. It is a tone Bantu language spoken in Cameroon, coded A 43 a by Malcolm Guthrie. We collected a corpus of conversational speech in radiographic interviews. Our recordings were acoustically analyzed by means of the Praat software and a specific tool developed in LPL (*Laboratoire Parole et Langage*), which runs under Praat, called MELISM (Caelen-Haumont et Auran, 2004).

1. PROSODY: FORM AND FUNCTION

This work, grounded on melisms, falls under the prosody form and function paradigm. As Hirst (2005: 337) points it out, speech prosody has both function and form. Prosodic forms are quasi-universal, because all languages make contrasts between rising and falling pitch, shorter and longer segments.

> In nearly all languages, prosody contributes in some way to lexical identity (via tone, quantity and accent), to expressing prominence, emphasis, boundaries, non finality, etc (…) as well as to a large number of still rather poorly understood means of expressing such things as dialogue structure, speech acts as well as general affect.

Melism, as a prosodic substance, does not depart from this principle. The term *melism* does not belong to the traditional linguistic or prosodic terminology, but to the singing one. It refers to a melodic figure spread over the duration a word, such that the number of notes perceived is higher than the number of syllables in the word. Melisms do occur in spontaneous spoken discourse, in such a way that this prosodic space is embedded in the intonation structure, while it is nevertheless mainly grounded on another specific prosodic structure, i.e. the affective layer. The melism space is thus an open tribune for subjectivity, because the speaker reveals himself as an individual, with his communicative and informative intentions. Caelen-Haumont and Bel (2000) distinguish the concept of melism from that of intonation as such:

> La prosodie possède une structure composite, associant deux strates dont l'une est liée à l'expression de la structure linguistique, c'est-à-dire de l'expression de la langue en tant que convention sociale. Cette strate qui découpe l'énoncé en phrases et groupes, selon l'usage de la langue, est l'intonation. La seconde strate est liée à l'expression affective et correspond au phénomène prosodique que nos dénommons 'mélisme'.

2. REPRESENTING MELISM FORM

Wigthman (2002) observed that the need for manual annotation of prosodic form is far less obvious nowadays, with the widespread availability of automatic algorithms for pitch extraction and stylisation. From this perspective, melisms can be analyzed according to their phonetic representation, in terms of quantitative values directly related to the acoustic signal, and of their surface phonological representation, viewed here as a sequence of discrete symbols which is also directly related to the acoustic signal.

2.1. PHONETIC REPRESENTATION

The MOMEL algorithm developed in Aix-en-Provence (Hirst and Espesser, 1993) can provide an automatic phonetic representation of raw fundamental frequency (F0) curve. This algorithm is sometimes referred to as a stylisation of F0 that consists in factoring the F0 curve into two components: a macroprosodic component and a microprosodic component. The output of this algorithm is a sequence of points <time, frequency>, referred to as target points derived solely from the F0 curve, without any account of the linguistic information. Deriving from this algorithm, a particular tool was created, namely "The MOMEL-MELISM" script that enables to analyse melodic prominence with a sufficient accuracy.

2.2. SURFACE PHONOLOGICAL REPRESENTATION

The output of the MOMEL-MELISM algorithm as a sequence of target points is suitable for interpretation as a sequence of tonal segments. From this procedure, the tonal amplitude of a speaker is divided into 9 levels: Acute (A), Supra (S), High (H),

Elevated (E), Mid (M), Centered (C), Bottom (B), Infra (I) and Grave (G). Melisms are restricted to the first three highest levels, **A, S** and **H**.

Generally applied to short linguistic sequences such as words, one can also apply it to longer ones, no matter their length. To function, the script requires:

- A segmentation of the sound file into relevant linguistic units for analysis (words)
- A stylisation of the pitch curve by identification of target points, which is realised by the Momel Algorithm (Hirst and Espesser 1993). This algorithm breaks the pitch curve into both microprosodic and macroprosodic elements, depending on its length.

The Momel-Melism procedure produces textgrids with five tiers, as shown bellow, with from top to bottom:

- the Praat manipulation window displaying the speech signal and the stylised melodic curve
- the melism coding showing from top to bottom:
  - a segmentation into words
  - an annotation into monotonal or bitonal sequences
  - a recoding within the segmented sequence
  - a tonal target coding following the Melism procedure
  - a conversion into semitones

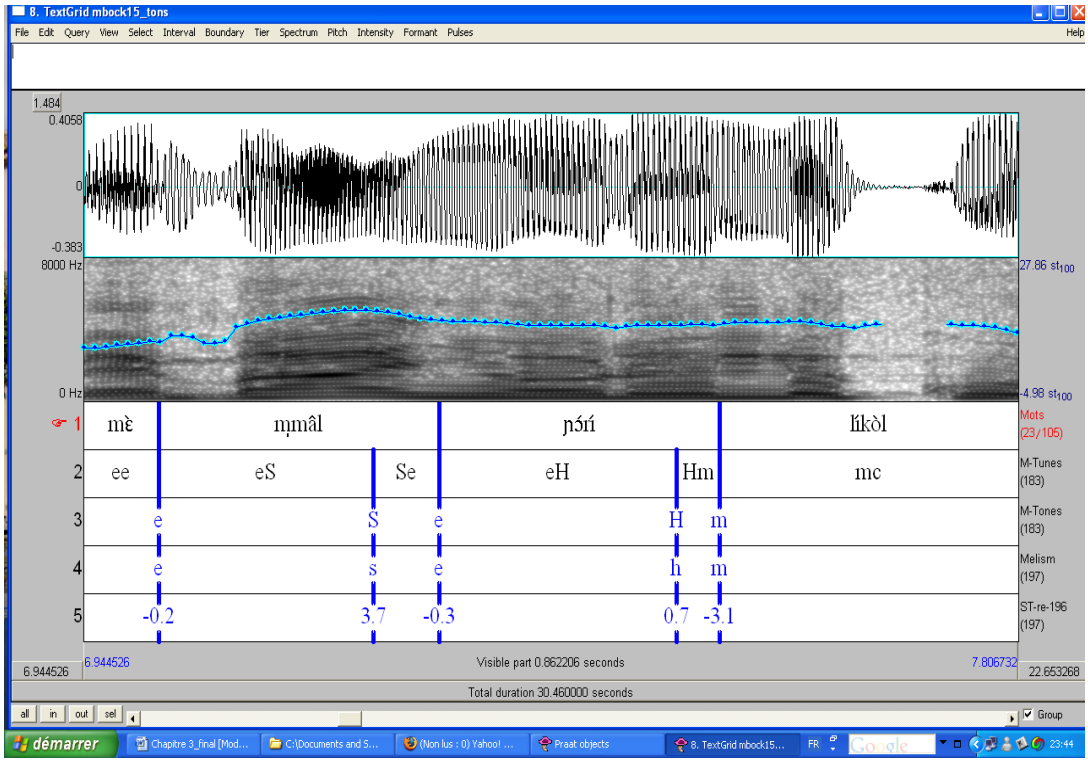

Figure 1: a sample of textgrid labelled by the Momel-Melism script

3. CORPUS

The corpus in this study consists in radiophonic interviews of 6 people, among which one female and five males. They were recorded either in a studio or inside houses. The recordings were then divided into wave files under Praat, with variable duration. Table 1 below shows the number of files and the duration per speaker.

The themes all the speakers were asked to discuss concerned either themselves or the Bàsàa community the speakers belong to and to which they are strongly attached. These are:

- An anthropologist asked to give an expert opinion over the Bàsàa culture;
- A traditional ruler asked to discuss the Bàsàa tradition;
- A lady who acquired a traditional position solely reserved to men, and who explains what happened;
- A journalist who writes chronicles on social harm;
- A musician who has been arrested and convicted, and who wants to prove his innocence.
- An elder of a family presenting the importance of a family congress.

SPEAKERS	Nb of files	Duration/s
Jmfab	36	55~70
Fem_mbo	54	30~35
Mandel	32	25~30
Alad	20	25~30
Nkeng	41	30~35
Mbock	25	30~35

Table 1: number of files of our corpus

Indeed, all the speakers felt personally involved in the subject. This is why the hypothesis that these speakers by virtue of their personal involvement in the subject, give free rein to their emotion and subjectivity, and thus produce melisms, could be put forward.

4. RESULTS

The melisms obtained from our corpus presented a great variability depending on speakers. From an amount of 2964 melisms, we got 1888 lexical items (ML) and 1076 grammatical items (MG). The following table 2 and Figure 2 display the distribution of melisms in accordance to the speakers:

SPEAKERS	ML	MG
Jmfab	649	318
Fem_mbo	551	357
Mandel	209	70
Alad	84	79
Nkeng	251	174
Mbock	144	78

Table 2: Distribution of melisms per speaker

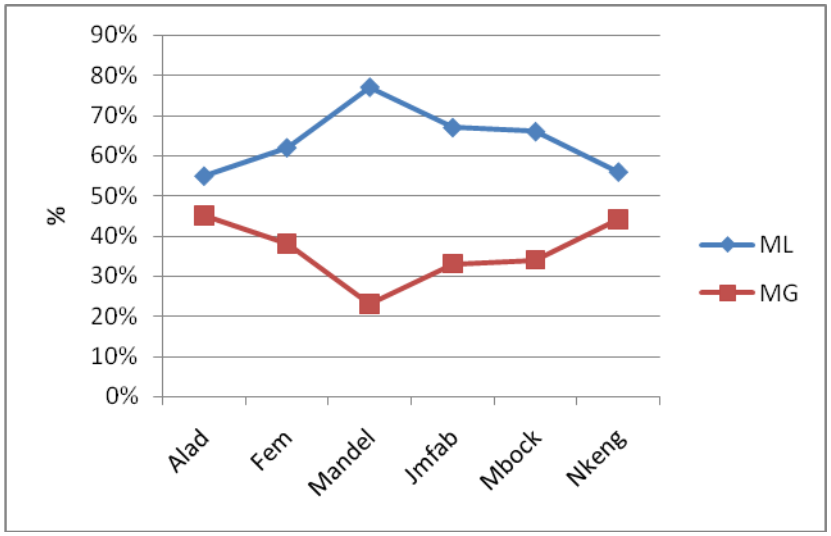

Figure 2: percentages of ML and MG per speaker

4.1. TONAL CORRELATES

In the psychology and prosody domain, the positive valence phenomenon, which is the intrinsic attractiveness (positive valence) of an event, object, or situation (Frijda, 1986; Cowie et al, 2000), is correlated to the F0 highest values.

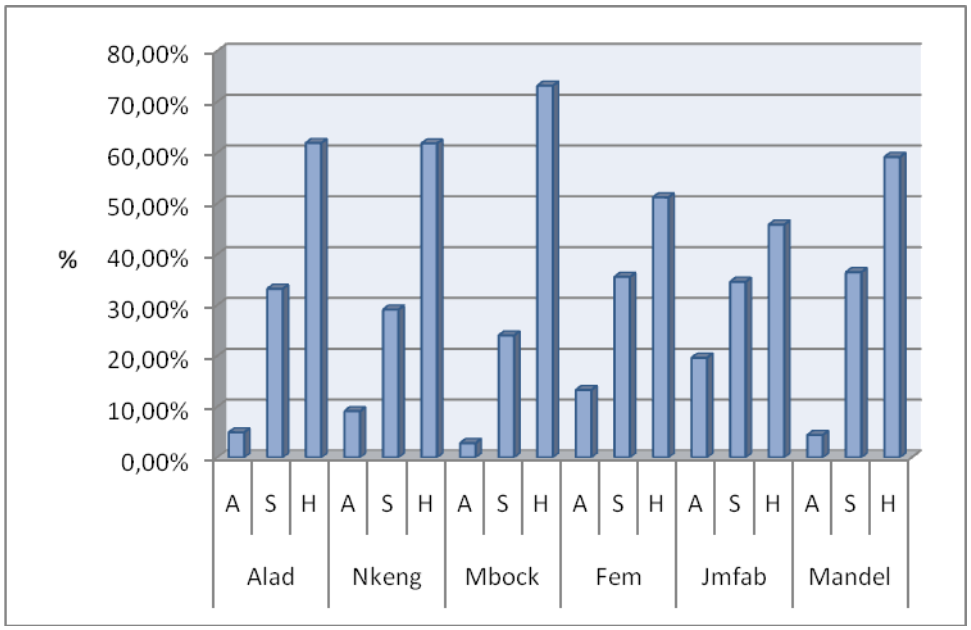

Figure 3: Tonal values of melisms

In those conditions, in agreement with this work, only three levels are considered as dealing with melisms: A, S and H. As for the French language, we can see from the graph (Figure 3) above that the H level is overrepresented as it is the most central target in the overall speakers' range, and thus, can be embedded on each ascending and descending slope. The A and S levels entail the highest F0 peaks, and the melisms produced at these levels grounded on the biggest effort are supposed to be highly informative.

4.2. THE MELODIC CURVE DIRECTION

It is very important to note here that most of the time (almost 80%) the curve is not flat such as a plateau. In most of the cases indeed, it shows downward or upward trends. This phenomenon tends to confirm the dynamic nature of melisms, because downward and upward movements imply also great increase or decrease of pitch energy.

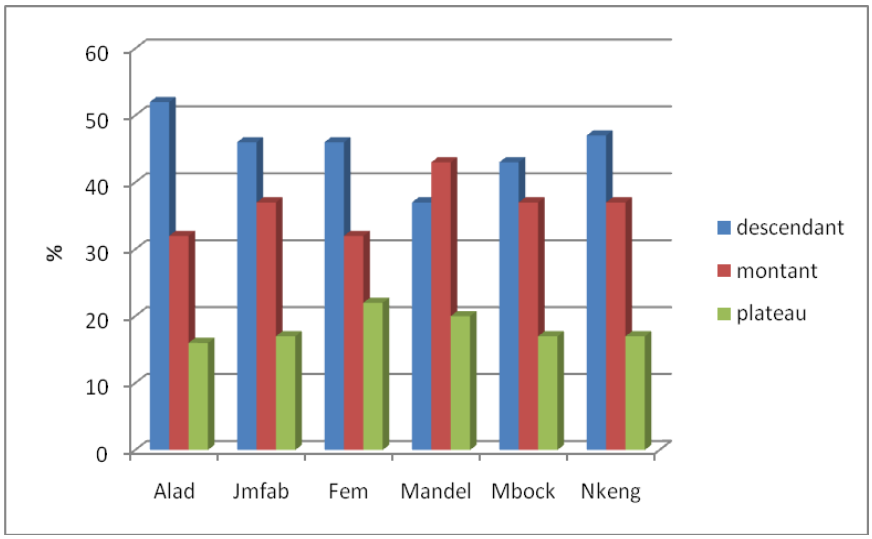

Figure 4: trends of the slope on melisms

4.3. TYPES OF STRUCTURES

According to the results bearing on French prosody (Caelen-Haumont, 2007) and on Bàsàa (Makasso, 2008a, 2008b), 4 types of melisms can be found in our corpus:

- The M type which is a melism within a syntagm, without any phrase boundary constraint. This category represents mostly the full meaning of melism, because it is just a matter of subjectivity.
- MC stands for a melism by contact, that is, a word that is close to a melism, i.e. just before/after it.
- MP stands for melisms before pauses.
- MF indicates melisms at the utterance final position, but not followed by a pause.
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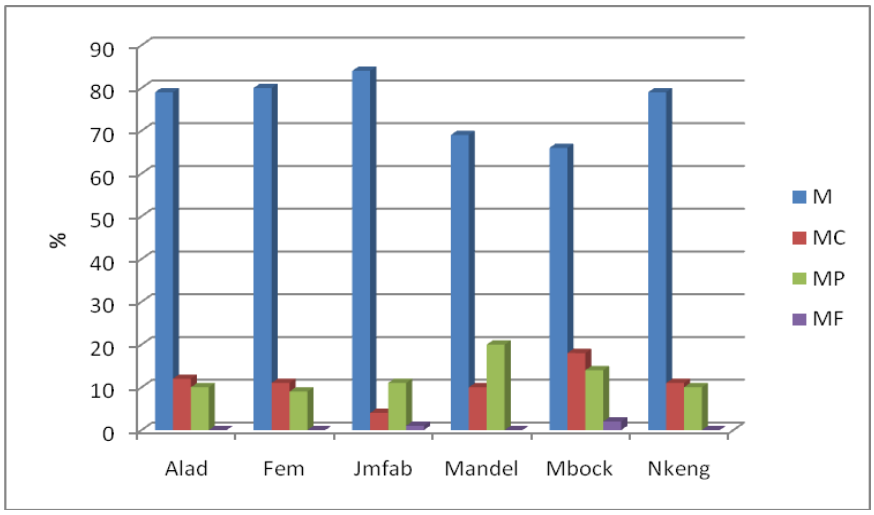

Figure 5: percentages of melism types

From the graph above (Figure 5), we can see the overrepresentation of the M category (80%). This fact means that the melisms being internal to the phrase without any boundary prosodical constraint are the true melodic expression of affectivity. It gives also evidence that our corpus is based on spontaneous speech.

5. REPRESENTING MELISM FUNCTION: SUBJECTIVITY

After the form of melisms, the question that we raise in this section is to know what function melisms can take in discourse. Following earlier studies (Makasso, 2008b), melisms can help determining pragmatic / perlocutory effects on hearers, the hierarchy of information within utterances, discourse coherence and the speaker's subjectivity. This section is devoted solely to the last function, i. e. subjectivity.

Subjectivity is a criterion that can help define a melism, according to Caelen-Haumont and Bel (2000) as seen in section I. In other words, since the melisms lies on the individual part of the prosodic representation unlike intonation which is based on a common linguistic rule, we assume that a word needs to be subjective in order to make a melism. This section particularly tackles to questions: does an item need to be basically subjective to form a melism? And what can be the pragmatic motivation of melisms?

4.4. LEXICAL SUBJECTIVITY

At the root of the domain on subjectivity in language, a serious amount of works was done by Benveniste (1958; 1966) and Kerbrat-Orecchioni (1980). The basically subjective words called "subjectivemes" can be classified according to their natural morphosyntactical class. In this work, we mainly focused on the following classes:

- Nouns
    - Proper nouns
    - relational nouns
    - affective nouns
    - cultural nouns
    - nouns that are "adjectivized" :
- Opinion verbs
- Evaluative adjectives,
- Adverbs

We collected all the subjective words bearing melisms throughout our corpus. As a result, we realized that their representation is not significant (less than 2%). From this perspective and following the results presented in Makasso (2008b), we can affirm that melisms, to be realized, do not rely on the basically subjective nature of items. This situation is clarified in the table number 3 below :

Morpho-syntact-ical Cate-gory	Subjective-mes		Speakers											
			Nkeng		alad		jmfab		Fem_mbo		Mandel		Mbock	
			occur-enc-es	%	occ-ur-enc-es	%	occ-ur-enc-es	%	occ-ur-enc-es	%	occ-ur-enc-es	%	occ-ur-enc-es	%
Nouns	Proper nouns		6	2	2	1	17	3	23	4	10	5	9	6
	Relational nouns		29	12	0	0	27	4	9	2	4	2	2	1
	Affective nouns		1	0	0	0	0	0	1	0	5	2	0	0
	Cultural nouns		1	0	0	0	33	5	29	5	8	4	20	14
	Axiologized nouns		1	0	0	0	0	0	2	0	3	1	0	0
Opinion verbs			0	0	0	0	2	0	6	1	0	0	0	0
Evaluative Adjectives		Axio logic	0	0	2	1	5	1	4	1	2	1	0	0
		Non-axio-logic	4	2	2	1	5	1	2	0	3	1	0	0
Adverbs		inten sity	2	1	2	1	8	1	8	1	3	1	0	0
TOTAL				2		0		1		1		2		2

Table 3: Distribution of basically subjective words in the corpus

From the above table, it is clear that melisms are not tied to any linguistic constraint, be it lexical. Rather, it is a free expression of a surface emotion, and / or underlying communicative intentions on the part of the speaker. This is to explain the need to investigate the pragmatics of melisms, in order to know what motivates such a phenomenon.

4.5. PRAGMATIC SUBJECTIVITY

In her book, Caelen-Haumont (2009) assigned two main functions to melisms:

- the **elective** function which consists in laying emphasis or prominence on a segment within the utterance, in order to distinguish it from the rest of the utterance;
- the function **of belief sharable through the affective register**, which consists in the hidden communicative intention of his discourse, the awaited effects that should be conscious or not.

What is most important to note here, is that the melism has a pragmatic role: the speaker is sharing his beliefs with his addressees. There are two broad types of beliefs: those who are collective and shared by all the society like a language, and individual beliefs, added by the speaker through his expectations, his intentions, his ambitions, conscious or not, like discourse. There exist three categories of belief motivations: objective, by faith and opinion.

Categories of beliefs	**Belief motivations**
Global or collective	Objective
	By faith
Local or individual	By opinion

Table 4: categorization of beliefs

By **objective** motivation to belief, we refer to the situation whereby a speaker's point of view is imposed to himself as well as to his or her addressee. This is the case for scientific rules. In our study, we have a scholar (JMFAB), an anthropologist who is asked to discuss some issues related to the Bàsàa culture.

Belief is motivated by **faith** when the reality presented is only true on the speaker's side. The speaker needs to convince his audience of what he is himself convinced of. That is the case for the lady who needs to convince the population that from her particular nature, her social growth and her political position, she deserves the title that is denied to her, though it is reserved solely to men.

The **opinion** motivates a belief when the reality discussed is not a rule to the speaker or his audience. One only gives his point of view. In our corpus, that is the case for the journalist who makes chronicles on the Bàsàa society. What is wrong to him is not forcedly wrong to anybody.

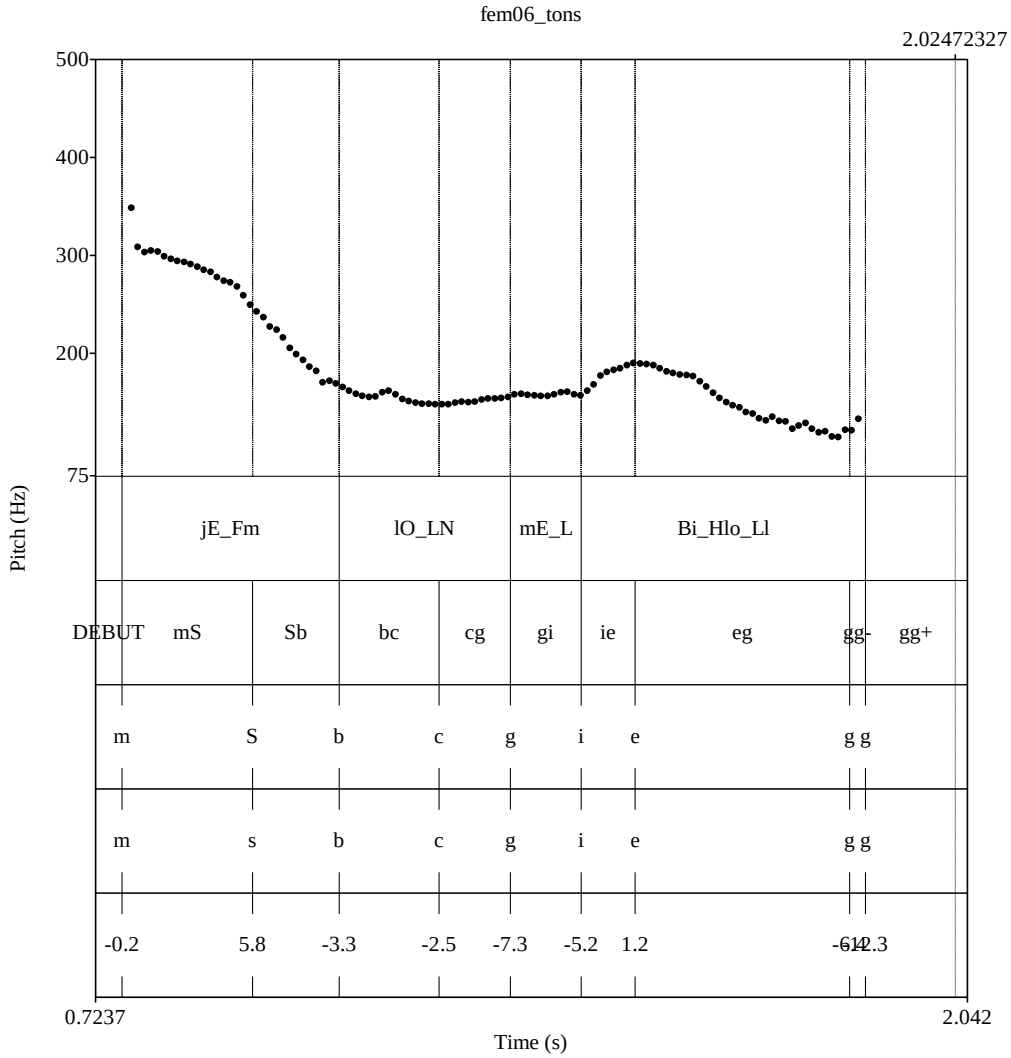

Figure 6: a textgrid displaying a melism on the item [jêm] 'my'

In the sentence [jêm lòŋ mè βílòl] 'my country where I originated', the speaker Fem_mbo pronounces a melism on the possessive marker, [jêm] my. In reality, she believes that her nature is unusual. That is the reason why she is convinced that all concerning her is characteristic likewise. The melism is not founded on the substantive but on the determiner that demonstrates the fact that this speaker's discourse is much more focused on herself.

5. CONCLUSION

This work is an attempt to discuss prosody in view of its form as well as its function. Focused on lexical prominence on words termed here as "melism", it has been shown how prosody can convey among other functions, subjectivity. Firstly, subjectivity is part of the definition of melism, but it could not viewed here as a lexical or semantic device. It is rather a pragmatic device. From the speaker's communicative

and informative intention, there are values and beliefs that can help the addressee interpret the message. Among those beliefs we have objective motivation, faith and opinion. In the whole, it is likely to affirm that the melism production is motivated by those beliefs and their interpretation can help to better understand the functions of prosody.

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