

# Prosodic similarities in French spoken in the Mascareignes

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## Abstract

Sentence intonation of spontaneous French spoken in Mauritius and Reunion Island presents intriguing similarities. In both varieties, the realization of the so-called *continuation majeure* present sharp melodic rises with glissando values exceeding 70 semitones/s, whereas values below 40 semitones/s are generally found in most other varieties of French. This similarity exists despite the fact that both Mauritius and Reunion Island are separated by some 250 km of sea, and that both islands have known different languages of administration, English and French, which precludes a language in contact effect.

This paper presents and discusses various hypotheses to explain the origin of this prosodic peculiarity maintained in both islands: was it an heritage of first French settlers in the XVIII<sup>th</sup> century, the effect of a common substrate of African languages spoken by slaves, or a melodic variation spontaneously created as part of creole? The validation of one of these hypotheses is not straightforward, given that varieties of French spoken in other regions presenting similar historical characteristics may apparently present the same remarkable melodic feature.

**Index Terms:** sentence prosody, *continuation majeure*, intonation, Mauritius, Reunion Island.

## 1. Introduction

If given the opportunity to listen to Mauritian and La Reunion people speaking French, one may easily find a common “accent” and intonation in both varieties, especially in informal contexts. This may not appear too surprising, considering that a common creole substrate, although presenting some lexical and syntax differences, exists.

Particularly in family environment, sentence intonation in spontaneous speech present intriguing similarities. In both varieties, penultimate syllables tend to be stressed in words, which is easily traced back to French pronunciation in France in the XVIII<sup>th</sup> century and is not specific to these regions.

What appears more remarkable is the realization of melodic contours which present sharp rises with glissando values exceeding 70 semitones/s, whereas common values rarely exceed 40 semitones/s in European spontaneous French in the same prosodic context, namely the *continuation majeure* contour. The *continuation majeure* in French is a generally rising melodic contour located at the end of the main prosodic groups of the sentence prosodic structure. This contour is normally located on the last syllable of main syntactic groups [8]. In Autosegmental-Metrical theory it typifies the last syllable of an Intonation Phrase (IP).

The glissando value characterizes perceived pitch rises and falls, and is defined by the starting and ending frequency

values  $St1$  and  $St2$  expressed in semitones, according to the formula  $(St2-St1) / t$ , i.e. the difference of the  $Fo$  last and first values in semitones divided by the time difference between these values. According to [9], if the glissando value exceeds a certain threshold, the pitch change is perceived as a melodic movement, otherwise the change is perceived as a static tone corresponding to  $2/3$  of the pitch movement.

These high glissando values exist despite the fact that both Mauritius and Reunion Island are separated by some 250 km of sea, and that both islands have known different languages of administration (English and French), both facts which precludes a language in contact effect, of one variety over the other.

## 2. Historical facts

Mauritius and Reunion Island are part of the Mascareignes Archipelago in the Indian Ocean. Mauritius was first discovered by the Portuguese in 1507, was occupied by the Dutch from 1598 to 1710 and became a French possession in 1715. The island was then named *Île de France*, but was conquered by the English in 1810 and then called Mauritius, until it became independent in 1968. The first settlement appeared in 1638 (around 20 Dutch families), but the real colonization started around 1721-1735.

Reunion Island, first named *Île Bourbon* by the French, had its settlement started about 1665-1764. For the period 1735-1740, both islands were administrated by the same governor, Mahé de la Bourdonnais. Before any colonization, both islands were inhabited.

It is still debatable to consider both Mauritian and La Reunion creoles as linguistically close or not [2], [3], [4], [5], [6], but since we don't have any description of sentence intonation in those times (let alone recordings), we have to rely on other general historical and linguistic information pertaining to the master-slave economical system used at that time (until 1833 in Mauritius and 1848 in Reunion Island). Some possibly interesting facts pertaining to the origin of the *sharp continuation majeure* are:

- a. Most of the masters were settlers coming from coastal regions of France (Normandy, Anjou, Saintonge, Poitou, Picardie). As being close to sea ports they were the most likely to be able to embark, given the difficulty and cost to travel inland. Only the military and administrative personnel would come from the Paris region. Therefore the variety of French spoken by the masters to the slaves was different from the ones used by the administration and the army officers;
- b. In both islands a slavery economic system was established, in which masters were prevented by law

to use any of the slaves languages and had to use French in their relationship with their slave workforce [7];

- c. In order to prevent revolt and to maintain division among them, slaves of the same geographical origin or ethnic groups were carefully separated. Therefore, in any one plantation, slaves could not easily communicate with each other in their native language [7];
- d. Lexicon of both Mauritius and Reunion Island creoles have at 80% to 90% a French origin. Imports from other languages were rare until more recent times;
- e. As other language with little or no morphology like mandarin, both creoles have similar syntactic properties (although differences exist, due for a large part to the different levels of contact with French in both islands).

### 3. Intonation facts

The *continuation majeure* [8] is the generally rising melodic contour which ends the main prosodic groups in the sentence prosodic structure. In French, its characteristics depend on the complexity of the sentence, and more precisely from the number of phonetic contrasts it has to maintain versus other melodic contours in other levels of the prosodic structure [1]. Generally, the *continuation majeure* is located on the last stressed syllable of somewhat large prosodic groups including two or more stress groups.

Fig. 1 gives an example, with a glissando value characterizing the rate of melodic change (in semitones per second) of 23 for a male speaker, Paris variety.

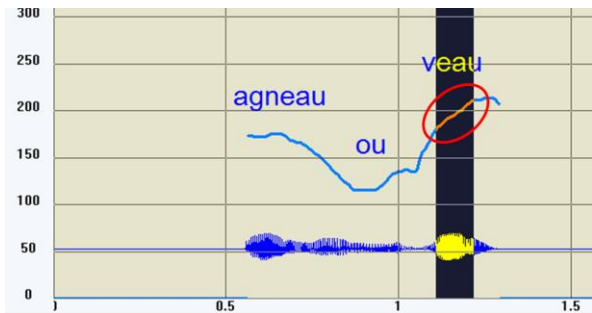


Figure 1. Melodic curve of continuation majeure for a read sentence, with a glissando value of 23 on the selected segment, male speaker, Paris.

Former studies on sentence intonation in creole, and particularly on Mascareigne creole [1], show that some remarkable realizations of the *continuation majeure* contour were mostly observed in informal conversations not only in creole but also in French. These realizations are characterized by a sharp fundamental frequency (F0) rise, with a glissando value that can exceed 70 semitones/s (the glissando is defined as de change in F0 in semitones divided by the duration of the melodic movement, in second).

Given the difficulty to obtain frequent occurrences of these sharp melodic rise outside a family context (see the lack of these occurrences in the project PFC [10]), the examples presented below were recorded on Internet broadcasts, from MBC (Mauritius Broadcasting Corporation) for Mauritius and Radio Free-Dom for Reunion Island.

Figures 2 and 3 give two examples of realizations for Mauritian speakers, with glissando exceeding 92 and 102 semitones/s respectively. These figures were obtained with the speech analysis software WinPitch which also provides an integrated reading of glissando values. This software is available on the Internet [11],

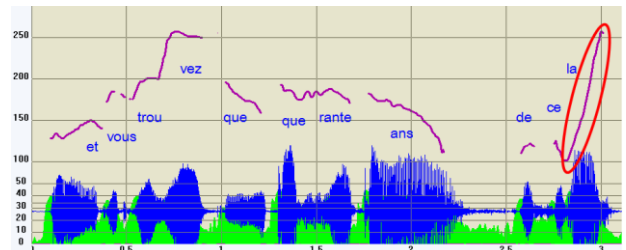


Figure 2. et vous trouvez que 40 ans de cela...Mauritius, male speaker, glissando 92 semitones/s

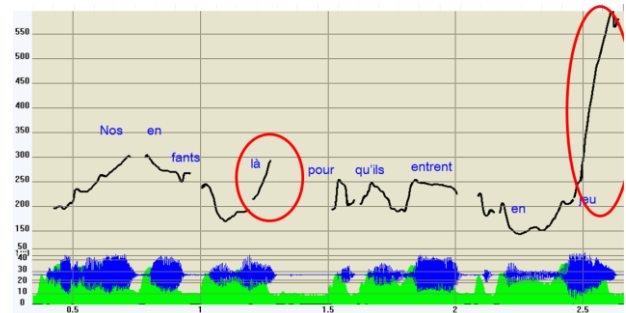


Figure 3. Nos enfants là pour qu'ils entrent en jeu...Mauritius, Female speaker, glissando 102 semitones/s

Similarly, Fig. 4 and 5 show examples of *continuation majeure* with glissando values of 85, 72 and 92 for two Reunion Island speakers.

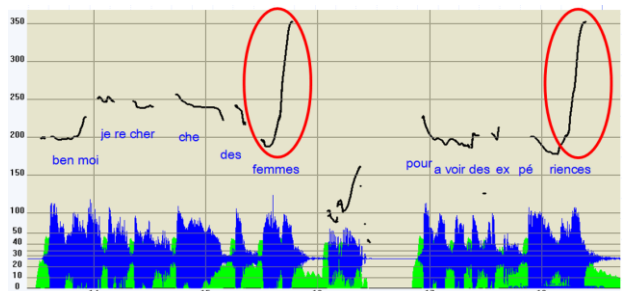


Figure 4. Ben moi je recherche des femmes mmm mmm pour avoir des expériences Reunion Island, female speaker, glissando 85 and 72 semitones/s

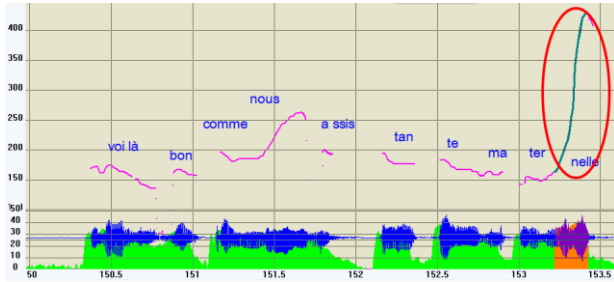


Figure 5. ... *comme nous assistante maternelle...* Reunion Island, female speaker, glissando 92 semitones/s

These examples show melodic curves typical of the sharp *continuation majeure* similar in both Mauritius and Reunion Island.

#### 4. Some hypotheses

To explain this remarkable prosodic similarity in the realization of *continuation majeure*, three main possible hypotheses come in mind:

- It results from the effect of a common substrate of African languages spoken by slaves at the time;
- It is an heritage of the way of speaking of first French settlers in the XVIII<sup>th</sup> century;
- It was created at the same time as the creole as a variation of the French settlers intonation model.

To evaluate the first hypothesis, it is worthy to examine the origin of the African population imported in both islands as slaves in the XVII<sup>th</sup>, XVIII<sup>th</sup> and XIX<sup>th</sup> centuries. Although the first settlers in the XVI<sup>th</sup> were Dutch, they were replaced after 1715 by French, mainly originated from regions of France close to the west coast (Normandy, Poitou, Saintonge, at the exclusion of Brittany where most people didn't speak French).

The slaves imported from Africa at that time came essentially from Madagascar and African East coast, but settlers were careful not to group slaves from the same origin on the same plantations. Indeed, revolt was more unlikely to happen if slaves were speaking different languages and came from various regions as they couldn't easily communicate with each other [7].

Furthermore, by law, French settlers were forbidden to use any of the languages spoken by slaves, so that the emergence of a creole with a French lexical base was the only possibility for communication, given the diversity of slave's native languages.

These historic facts tend to exclude definitively the first hypothesis validating the existence of a prosodic heritage from African languages spoken by imported slaves.

The second hypothesis calls for a more detailed analysis of the French settler's origin. As for other regions colonized at that time, most of the emigrants came from coastal regions of France, simply because other candidates for emigrations couldn't afford to travel to French ports to embark for the colonies. The only exceptions were members of the administration and of the royal army, who came from various regions of France difficult to trace. Retaining this possibility

leads to an apparent problem linked to the absence of similar prosodic feature observed in other regions colonized by French emigrants at that time (e.g. Quebec).

#### 5. Discussion

The fact that slaves of different geographic and ethnic origins were purposely mixed in plantations may exclude the hypothesis of a common African substrate to explain the sharp rise in spontaneous speech sentence prosody. It remains then as possible explanations either an heritage of the master's intonation or a sui generis apparition of this particular feature at the same time as the creation of the creole itself.

An argument against the first option stems from the prosodic characteristics of Quebec French, which do not show sharp melodic rises in any variety, although the origin of the settlers is roughly the same, the difference with Mascareigne islands being the absence of slavery based economy.

We may then conclude that this remarkable realization of sharp *continuation majeure* is a sui generis prosodic feature appearing with the creation of creole. If this was true, we should be able to observe it elsewhere, particularly in other islands colonized by the French such as Guadeloupe and Martinique, where imported African slaves (this time from West Africa) were used as the main workforce in the plantations. Although many recordings do not show this feature mostly present only in family contexts, an example is given Fig. 5 showing similar sharp rise (glissando equal to 85 semitones/s, recording from Radio Martinique).

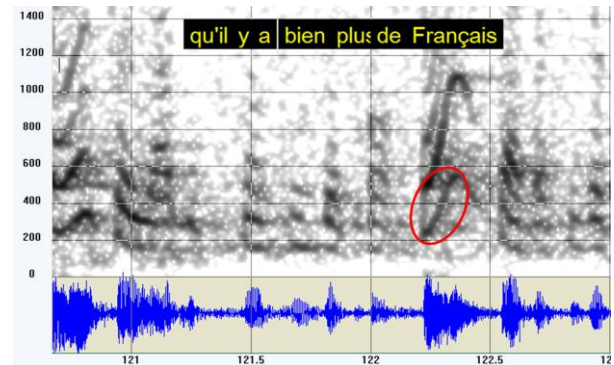


Figure 5. ...*qu'il y a bien plus de Français...*Female speaker, Martinique, glissando 85 semitones/s

We are then left with two possible explanations:

- The sharp *continuation majeure* results from an heritage of a specific prosodic feature used only by French masters when addressing plantation slaves, but not in their interchanges with their French peers (we have no trace of this feature in similar contemporary immigrated French populations such as in Quebec or other French speaking regions without a master-slave economy).

- The sharp *continuation majeure* is a sui generis characteristic of French creole, appearing at the time the creole linguistic system emerged by borrowing most of the lexical item from French. The syntax was then formed according to universals similar to other languages with no or limited morphology such as Mandarin.

Today, the realizations of Sharp *Continuation Majeure* appears mostly in family and friend environment, to the point, according to some informants, to constitute an identity feature for the speaker, seldom used in other sociolinguistic contexts.

## 6. Conclusions

The fact that colonies in Antilles and Mascareignes are geographically totally separated, that slaves came from different regions in Africa (West coast vs. East coast and Madagascar) and that their other prosodic and phonological characteristics vary considerably lead us to tentatively conclude that *Sharp Continuation Majeure* was included in the creole at its stage of formation, but, like the lexicon, was adapted from a model given by the masters in their communications with the slaves in their respective plantations.

In other words, masters were only using the sharp *continuation majeure*, which incidentally appears ironically as an extra-insistent main marker in the prosodic structure, when addressing their plantation slave personnel.

## 7. Acknowledgements

I would like to thank Chin-Lan Leung-Shek-Kim and Steve Jeanne-Rose for their participation in the validation of some examples and their valuable remarks on the sociolinguistic aspects of the *continuation majeure* realizations in Mauritian and Martinique creoles.

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