The Prosody of Mauritian Creole: Some Experimental Aspects

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ABSTRACT
A link does exist between the syntactic structure of a sentence and the sequence of prosodic contours located on the stressed syllables. More specifically, in French, patterns of melodic rises and falls located on stressed syllables do correlate with the syntactic hierarchy, independently of the syntactic categories involved. This preliminary study of Mauritian Creole prosody examines patterns of such prosodic contours in simple SN-V-SN configurations.

PURPOSE
Phonosyntactic theories of intonation link the syntactic structure of the sentence with specific prosodic contours located on the stressed syllables of the word. These contours encode a prosodic structure which enters into a complex relationship with syntax varying to homomorphy to total independence, depending on the style of the discourse (i.e. read sentences vs. spontaneous speech, with continuous variations between these extremes). In French, this approach leads to the discovery of a grammar of intonation, describing prosodic contours in terms of rising or falling fundamental frequency, syllable duration and intensity, which manifest abstract markers of the prosodic structure [1].

Creole languages appear to be of considerable interest to linguists as they demonstrate intriguing similarities on the syntactic level, even between varieties quite apart geographically and in time, such as Haitian and Mauritian Creoles. These similarities prompted a famous theoretical dispute, as to assign the generation of Creole languages ex nihilo by the existence of a bioprogram which would supply basic syntactic rules in the absence of any mother language [2], or (perhaps more convincingly) by applying universal rules that would result in similar word order in the absence of morphological markers [3].

From these two perspectives, the study of Creole intonation appears to be of some interest as 1) the absence of morphological markers indicates that the decoding of the syntactic structure can only be ensured by word order and intonation cues (letting aside semantic markers), and 2) properties of universal grammar can be perhaps found in the intonation grammar as well.

Thus, the quasi absence of morphology may give a more dominant configuration to the prosodic structure than in SF, and the presence of universal characteristics of syntactic encoding may indicate the presence of universal characteristics in the prosodic structure.

METHOD
Two speakers of Mauritian Creole (CL and ML) have been recorded reading about 50 sentences containing between 3 and 5 prosodic words (i.e. effectively stressed syllables), such as:

*Mo fin so lisien content la soup tomatge*

(FS): Le chien de mon frère aime la soupe aux tomates
(My brother's dog likes tomatoes soup)

Each set of sentences was read 3 times in order to check consistency between prosodic realizations. Orthography has been somewhat modified here (from standard KM conventions). Perceived stressed vowels are bold and underlined.

Most sentences were designed with the simple syntactic hierarchy

```
   A
   / \
  B   V
  / \
 SN VP
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1) Adj + N or (Det) N + N type in view that Mauritian Creole allows equivalent constructions such as

*Cecil so frer content ser Asin.*

Frer Cecil content ser Asin.

with no or very little change in meaning (FS: “le frère de Cécile aime la soeur d’Asin”).

Acoustical analysis of the recordings were made with a real time fundamental frequency visualizer (model PM1000) which allows easy readouts of F0 and duration values.

Since the informants were speaking Creole in their families, and that their language at work was English, it was assumed that interference between Standard and Creole French was minimal, although both informants could speak SF occasionally.

Experimental results
Experimental results in terms of melodic contours showed for both speakers striking similarities for prosodic patterns associated with the subject SN.

For example, comparative data for speaker CL are, for the 4 structures (the first 2 lines in each table correspond to the fundamental frequency values at the beginning and the end of each contour, the third line represents the contour duration in cs):

* Cecil so frer content ser Asin. (1) (CL)*

<p>| | | | | |</p>
<table>
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<tbody>
<tr>
<td>277</td>
<td>228</td>
<td>200</td>
<td>166</td>
<td>Hz</td>
</tr>
<tr>
<td>288</td>
<td>240</td>
<td>212</td>
<td>160</td>
<td>Hz</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
<td>9</td>
<td>15</td>
<td>cs</td>
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Two patterns clearly emerge from the data: a falling-rising on SN groups with expansion without a determinant, such as (1) and (2), and a rising-rising pattern, appearing on SN groups with expansion involving a determinant or a person's name as in (3) and (4). These regularities show up despite the rhythmical differences between the two informants, ML having a much slower speech rate and using more syllable duration than melodic variation for stress encoding. Examples are:

\[\text{Cecil so far content Asia so see}\] (2)  
\[\text{(CL)}\]

\[\begin{array}{ccccccc}
274 & 220 & 223 & 213 & 176 \\
302 & 235 & 200 & 219 & 156 \\
13 & 12 & 12 & 11 & 19 & cs
\end{array}\]

\[\text{Free Cecil content ser Asia; (3)}\]  
\[\text{(CL)}\]

\[\begin{array}{ccccccc}
204 & 250 & 200 & 166 \\
200 & 266 & 212 & 161 \\
13 & 11 & 7 & 11 & 160 & cs
\end{array}\]

(ML)

\[\text{Cecil so far content la soup tomate}\]  
\[\text{(ML)}\]

\[\begin{array}{ccccccc}
268 & 230 & 213 & 212 & 184 \\
302 & 236 & 209 & 204 & 180 \\
13 & 11 & 7 & 11 & 160 & cs
\end{array}\]

Two contours as indicating a 3 level prosodic structure

(ML)

\[\text{Pierre son frère a perdu son vélo}\] (6)

\[\text{C1 C2}\]

\[\begin{array}{ccccccc}
268 & 228 & 221 & 204 & 201 \\
295 & 240 & 204 & 201 & 268 \\
13 & 12 & 20 & 11 & 28 & cs
\end{array}\]

\[\text{C1 C2}\]

Without drawing any conclusions concerning the origin of these melodic regularities (bioprogram or universal), the two patterns can be related to similar melodic sequences found in SF: the fall-rise associated with subject SN (any grammatical category)

\[\text{Le frère de Pierre a perdu son vélo}\] (5)

\[\begin{array}{ccccccc}
264 & 243 & 238 & 217 & 210 & 200 \\
355 & 260 & 242 & 222 & 200 & 194 \\
25 & 12 & 20 & 11 & 9 & 23
\end{array}\]

(ML)

\[\text{Peter's brother lost his bike}\]

and rise-rise with the theme-rheme construction (same meaning)

\[\text{Pierre son frère a perdu son vélo}\] (6)

\[\text{C1 C2}\]

In this case, differences in melodic variations could be attributed to the declination effect in the sentence.

Another interpretation would considered this difference between the two contours as indicating a 3 level prosodic structure

CONCLUSIONS

Simple read sentences of Mauritian Creole with various syntactic structures of the SN-V-SN type showed regular patterns of melodic contours somewhat different in their distribution from SF. In particular, sequences Det N + Det N were associated with 2 rising contours on the group stressed syllables, whereas examples such as Det N + Adj or N + N were associated with a falling rising pattern. The first form is similar to SF dislocated sentence prosody, the second resembles to the more common pattern found in 2 prosodic words subject SN.

REFERENCES


