

The Prosody of Mauritian Creole: Some Experimental Aspects

Philippe Martin
 Experimental Phonetics Laboratory
 Department of French, University of Toronto
 Toronto, Ontario, Canada

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 appear 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

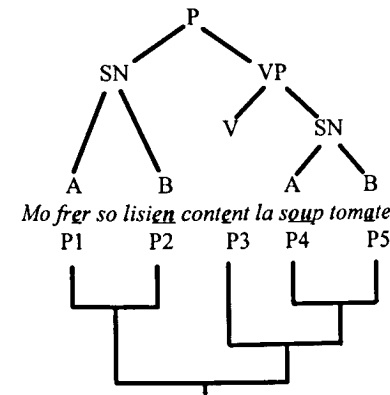
between 3 and 5 prosodic words (i.e. effectively stressed syllables), such as:

Mo frer so lisien content la soup tomate

(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 [4]. Perceived stressed vowels are bold and underlined.

Most sentences were designed with the simple syntactic hierarchy



to be correlated with a 2 or 3 level prosodic structure organizing 5 prosodic words P1 P2 P3 P4 P5 (squared tree representation) through stressed syllable association. Most SN were of the 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").
 (Cecil's brother likes Asin's sister)

Acoustical analysis of the recordings were made with an real time fundamental frequency visualizer (model PM1000) which allows easy readouts of Fo 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):


<i>Cecil so frer content ser Asin</i>				(1)
				(CL)
/	/	/	/	
277	228	200	166	Hz
288	240	212	160	Hz
9	8	9	15	cs

Cecil so frer content Asin so ser. (2)
(CL)



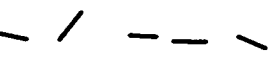
274	220	223	213	176	Hz
302	235	200	219	156	Hz
13	12	12	11	19	cs

Frer Cecil content ser Asin (3)
(CL)



204	250	200	166	Hz
200	266	212	161	Hz
11	10	9	15	cs

Frer Cecil content Asin so ser. (4)
(CL)




224	264	223	213	176	Hz
214	278	200	219	156	Hz
10	9	12	11	19	cs

(Cecil's brother likes Asin's sister)
(Same meaning for all sentences)

Stress clashes in (1) and (3) explain the occurrence of 4 instead of 5 contours.

One example with a 2 levels expansion to the left is:

Cecil so tonon so lisien content la soup tomate (5)
(ML)




264	243	238	217	210	200
355	260	242	222	200	194
25	12	20	11	9	23

(Cecil's uncle dog likes tomato soup)


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:

Cecil so frer content la soup tomate (ML)
(ML)



268	230	213	212	184	Hz
302	236	209	204	180	Hz
13	11	7	11	160	cs

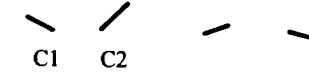
Cecil so frer content la soup tomate (CL)
(CL)



268	228	221	204	201	Hz
295	240	204	201	268	Hz
13	12	20	11	28	cs

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)

Le frere de Pierre a perdu son velo (5)

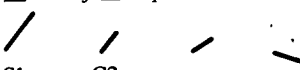


C1	C2			
----	----	--	--	--

(Peter's brother lost his bike)

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

Pierre son frere a perdu son velo (6)



C1	C2			
----	----	--	--	--

By contrast with Creole, the subject SN in (6) appears dislocated, whereas in Creole both elements of the SN are equally integrated as in (2) and (3).

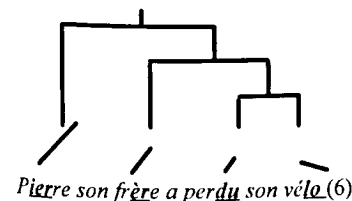
Both informant data displayed similar melodic amplitude contrasts (difference in frequency between the starting and ending points of the contour). The first Fo expansion was consistently higher than the second, although this was more marked for speaker ML than for CL.

The interpretation of these contrasts in term of prosodic structures could lead to the conclusion that the rise-rise sequence is a specific pattern associated with a (Det) N + N syntactic group, opposed to the fall-rising pattern correlated with N + N group

(Det) N + N	N + N
/	-
/	/

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



similar to the one found for theme-rheme construction in SF, as in (6).

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 pattern is similar to SF dislocated sentence prosody, the second resembles to the more common pattern found in 2 prosodic words subject SN.

REFERENCES

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