A preliminary study of prosodic patterns in two varieties of suburban youth speech in France.

David Le Gac[†], *Mikaël Jamin*[‡], *Lehka Iryna* [†]

[†]DESCILAC – University of Rouen
[‡] Nottingham University
david.legac@univ-rouen.fr; mikael.jamin@nottingham.ac.uk

Abstract

This paper presents the first results of a research on the prosodic specificities of French speakers living in two poor multi-ethnic suburbs located in the north of Paris and in Rouen. The emphasis is on the acoustic analysis and the comparison of some particular prosodic patterns which are frequently used in the suburban youth speech. We show that there is no noteworthy difference between speakers from both suburbs. In particular, we found that both groups of speakers use rise-fall patterns associated with short syllables at the end of IP. This pattern is atypical in standard French, and its presence in both groups suggests that it constitutes a prosodic marker that is essential to the suburban accent identification.

1. Introduction

Since the early nineties, several studies claimed that the youth living the poor multi-ethnic *banlieues*[1] (suburbs) spoke their own variety of French. Many of these studies focused on the segmental aspects of this vernacular. Some authors carried out morpho-phonological analyses about the syllabic structure of *verlan* – the typical slang spoken by the young people in question – consisting of inverting syllables in a word (cf. Azra and Cheneau [1]). Other authors focused on the variable phonetic realizations of different phonemes of French, such as the dental plosives /t/ and /d/ or the continuant dorsal /r/ (see Jamin [7] for a review).

In addition to the lexical and segmental aspects, many scholars argued that this variety of French is characterized by specific prosodic patterns. One of these patterns is an accent falling on the penultimate syllable of the phrase or the word in the speech of the youth in Parisian suburbs. This accentual pattern is atypical in standard French: it is now well established that primary accent in French is final and secondary accent and focal prominence may occur at the beginning of the word or the phrase; in utterances with more than 2 syllables, any penultimate accent is normally prohibited.

This penultimate accent has been mentioned by authors such as Calvet [2] and Méla [9], who worked from an auditory and impressionistic point of view. Examining the question from an instrumental and phonetician's point of view, Fagyal [6] also argued for a penultimate accent characterizing the vernacular of Parisian French youth. She claimed that this accent is realized with a "greater than average duration" – i.e. significant lengthening – of the Intonational Phrase penultimate syllable. Furthermore, she argued that this penultimate syllable is marked by a high tonal target.

For Gadet and Conein [3], the penultimate accent is a typical feature of *français populaire*, i.e. 'working class French', spoken by the Parisian working-class since at least the late 19th century. This idea has also been proposed by Léon [9]. Gadet and Conein [3] also suggest that this social group is characterized by unusually strong final and initial accent in a prosodic constituent.

However, Duez and Casanova [5] examined temporal organisation of the 'talk of the *banlieue*' from a phonetic and instrumental point of view. They found no specific phrasal accent and concluded that the perceived distinctiveness of this talk might come from surface prosodic features, such as acceleration and deceleration within the prosodic phrase, or else (quoted by Fagyal [6]).

On the basis of an acoustical and perceptual study, Lehka and Le Gac [7] do not report any penultimate lengthening or penultimate high pitch target. They show that the variety of French spoken by adolescents from a suburb of Rouen (a town located in 130 km far from Paris) is characterized by a sharp fall of *F*0 located on the final syllable of a prosodic unit they do not specify. They also show that this final syllable tend to be as long as the penultimate one. Note that the final *F*0 fall associated with a short vowel is mentioned by Fagyal [6] for some of her speakers. For this author, however, this pattern does not constitute the genuine social marker of the working-class adolescent males.

In this paper, we will investigate and compare some of the prosodic patterns characterizing the vernacular of adolescents in two poor *banlieues* of Paris and Rouen. We aim at answering to the following questions. What are the prosodic differences and similarities of these two varieties of French? Is there any evidence of a penultimate phrase accent in both vernaculars? Does the sharp final melodic fall characterize the suburb of Rouen only? Are there any other prosodic patterns that distinguish the 'talk of the *banlieues*' from standard French? Finally, studying and comparing these two vernaculars will lead us to a more general question about the prosodic variation: is social prosodic variation expressed by continuous and subtle acoustic modifications of standard phonological prosodic patterns of French or does it manipulate distinct phonetic categories?

2. Corpus and method

The data which will be analysed below stems from two corpuses. The first corpus consists of data collected in 1998 in La Courneuve (North of Paris) within the perspective of a sociolinguistic study (Jamin [7]). The study aimed at

[1] We use the term *banlieue* here as the term *suburb* has connotations of middle-class housing area in the Anglo-Saxon World. In France, the poor *banlieues* are often characterized by multiculturalism, collective housing, and high rates of unemployment.

analysing innovative vernacular features thought to be emerging within the youth of the poor multi-ethnic estates of Paris. In this paper, a sub-sample of 3 informants will be used. They are all males, aged between 13 and 17, and French from immigration backgrounds (notably Maghreb and the Comoros Islands). The extract selected for analysis is a fifty minutes recording of a group discussion led by the fieldworker. In order to produce a more spontaneous style of speech, the speakers were asked to determine themselves the rules governing the debate and then to freely discuss about a subject.

The second corpus consists of data collected in 2002-2003 in two high schools located in the north-eastern suburb of Rouen (the so-called *hauts de Rouen*). Like the sub-sample of participants from Paris, we selected three informants, which were all males aged between 14 and 16. Two informants were of North-African origin and the last one was of white French origin. In order to gather spontaneous style of speech, the informants were asked to talk about their hobbies, their attitude to the local life and people and to tell the fieldworker a story about their own life in Rouen.

For both geographical areas, the informants were selected not only for their similarities of age, sex and origin but also for the particularly high frequency of non-standard variants in their speech. For the informants from Paris, these variants concern segmental units, namely affricated dental stops, highly constrictive voiceless velar and uvular /r/ and back [ɑ], as well as prosodic parameters. For the informants from Rouen, only prosodic variants were salient. The selection was made by the authors themselves from an auditory inspection of the recordings.

3. Results and discussion

3.1. Results

First of all, our data show that speakers from Paris and Rouen may use all the standard intonation patterns of French: we found initial phrase or word accents, continuation rises and conclusive falling contours. This means that non-standard prosodic patterns are not systematic and do not mark the end of each prosodic unit in the utterances. Non-standard prosodic patterns are likely to be realized according to pragmatic meanings revealing the degree of implication of speaker in the discussion. For instance, non-standard prosodic variants seem to be more numerous when the speaker tells us a story that happened to him or when he wants to impose his own point of view about a subject.

Besides the standard intonation patterns, our data reveal that the speakers from both suburbs use an atypical prosodic pattern consisting of a *F*0 rise-fall contour. The melodic fall of this contour occurs on the final syllable of an intonation phrase. The pitch maximum of this fall is located at the beginning of the vocalic nucleus of the final syllable. The minimum appears at the end of the latter (when ending with a vowel or any sonorant). The rising pitch movement preceding the final fall may start from any point located in the penultimate syllable, namely its onset, its nucleus and even its end/coda. The rise continues through the onset consonant of the final syllable, where it reaches its target and is followed by the *F*0 fall. Two instances of the rise-fall pattern are given in fig. 1 below.

Figure 1: *two rise-fall patterns realized by one of the speakers from Rouen. The first rise-fall has a pitch range of 10 semitones, the second of 6 semi-tones. They are both associated with a [–long] syllable. French text: "que tout le monde parle, (pause) mais c'est un langage normal"*

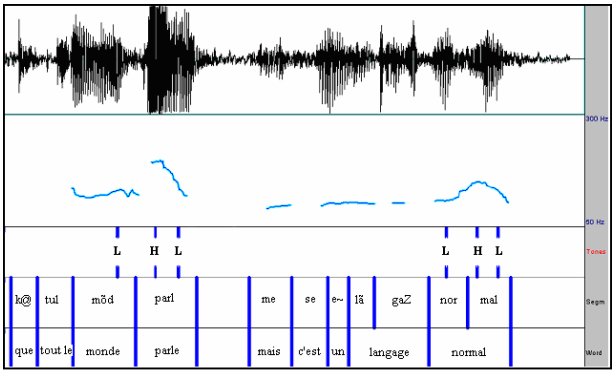
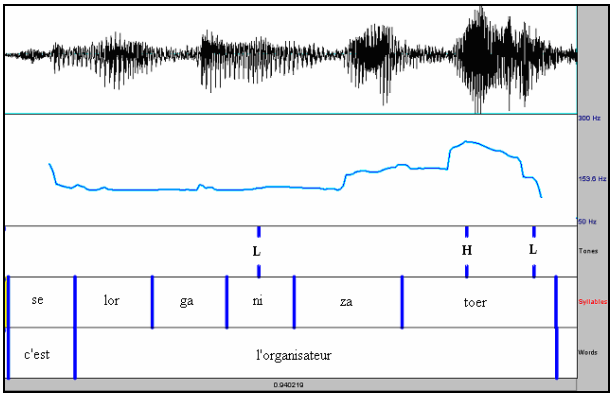


Figure 2: *a rise-fall pattern pronounced by a speaker from Paris. The first low target and the high target are linked by an upstepping melodic interpolation. French text: "c'est l'organisateur"*

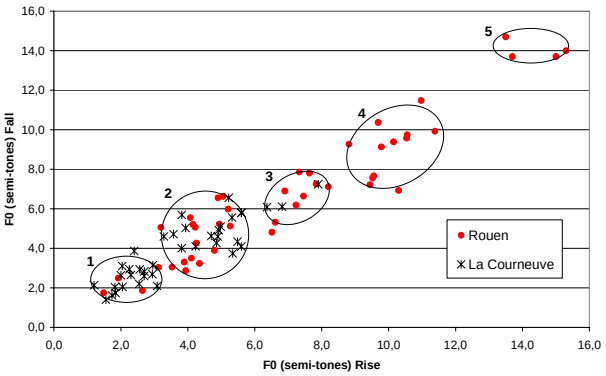


For two of our speakers from Paris, the melodic rise may start from the antepenultimate syllable of the IP. In this case, the low target is often followed by an upstepping *F*0 configuration on the penultimate syllable as illustrated in fig 2. Fagyal also mentions this configuration for some of her speakers and considers it to be the realization of a high tone. This configuration, however, is more likely to be a mere interpolation between the low target and the high target located on the final syllable. In the other utterances with an antepenultimate low target, our speakers realize a straight *F*0 interpolation between the low and high pitch targets. It has to be noticed that no 'real' high tone – i.e. a pitch target as high as or higher than the final syllable – have been observed in both corpuses.

Fig. 3 shows the distribution of the rise-fall patterns for each group of speakers. We measured the pitch range between the high pitch target and the preceding and following low pitch target. We converted the pitch range in semi-tones and expressed the *F*0 fall in function of the *F*0 rise. Fig. 3 reveals that the distribution of these patterns clearly tends to be categorical in each group of speakers and is not continuous. One distinguishes five groups of plots distributed from two semitones up to 14 semitones. However, it appears that the

rise-fall patterns of the Parisian speakers are distributed into the first three categories only (categories n° 1, 2 and 3 in fig. 3). That is, the Parisian speakers tend to realize rise-fall patterns with a rather reduced pitch range (*F*0 mean of all the fall = 3.9 semi-tones) whereas the informants from Rouen may realize reduced patterns as well as expanded ones (*F*0 mean = 6.8 semi-tones).

Figure 3: *distribution of the rise-fall patterns for each group of speakers*



As far the duration is concerned, the falling contours are associated with a rather short final syllable for both samples of speakers. We measured the duration of the final syllables and that of the preceding syllables located in the same IP, if those syllables did not present any other accentual pattern (lengthening, melodic rise and or fall, etc.). Durations were measured on spectrograms. We selected only prosodic units containing 3 or 4 syllables with similar syllabic shapes (CV-CV-CV, CVC-CVC-CVC, etc.). Since speakers spoke at different rates, the duration of each syllable was then expressed relative to the total duration of the prosodic unit in question, and converted in %. The results are given in Table 1 below.

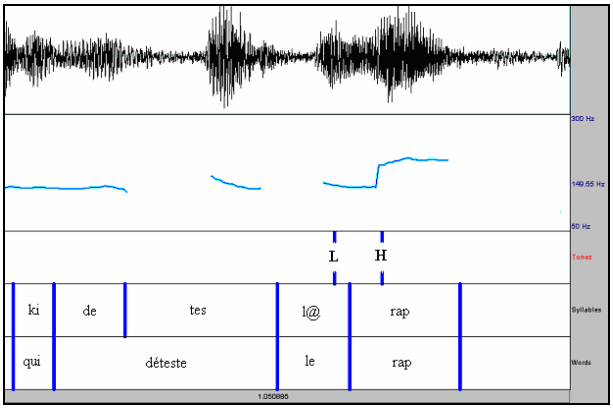
Table 1: *duration of the syllables in the IP ending with an F0 rise-fall. Duration average in % over the total duration of the UP and the 3 speakers of each town*

		σ	σ	σ	σ	Total
Paris	3 syll		25.4	36.4	38.3	100.0
	4 syll.	19.4	23.7	27.5	29.3	100.0
Rouen	3 syll.		29.4	34.3	36.3	100.0
	4 syll.	18.1	23.2	26.6	32.1	100.0

No significant lengthening of the penultimate syllable can be observed in Table 1. Rather, Table 1 shows a progressive increase in duration up to the ultimate syllable for both groups of speakers. In fact, the difference in duration between the final syllable and the penultimate is not very important. A closer look to the data shows that rise-fall patterns with extended pitch range display similar pattern of duration. Yet, literature about French prosody reports that syllables displaying melodic contours at the end of an IP normally present a lengthening from more than 30% up to 100% relative to the duration of the unaccented syllables (cf. among others Rossi [11] and Touati [12]). Therefore, the final syllables associated with the melodic fall have to be viewed as shortened or, in terms of phonological features, as [–long] for both groups of speakers.

Besides the rise-fall contours associated with a short final syllable, the speakers realize two other non-standard prosodic patterns. The first prosodic pattern may be observed in both samples of speakers. It consists of a static high *F*0 plateau associated with a short syllable at the end of an intonation phrase. In standard French, the final high tone of an IP is normally realized as a continuation rise – i.e. an LH sequence – linked to a long syllable. For the static high tone in question no such rise is observed: the final syllable stats and ends with a high pitch target (or a very slight fall). This is illustrated in fig. 4.

Figure 4: *high* F0 *plateau ending the IP. French text: "qui déteste le rap"*



The other non-standard prosodic pattern only appears in the corpuses of Paris. Like the first prosodic pattern above, it consists of a static high tone ending an IP. However, this high tone is associated with a long or extralong syllable and is realized as a noteworthy high and long *F*0 plateau. This plateau thus contrasts with the continuation rises found in standard French.

3.2. Discussion and conclusion

Our data do not reveal any noteworthy difference between speakers from Paris (La Courneuve) and those from Rouen. Neither penultimate high tone nor penultimate lengthening has been observed. We found that both samples of informants use similar rise-fall patterns associated with the same duration pattern. This suggests that this particular prosodic configuration does not pertain to a specific suburban area but could be viewed as a general marker of the 'talk of the *banlieues*'.

Rise-fall configurations are exploited to express emphasis in standard French. In this case, however, it is the whole rise and fall complex that is normally realized on the final syllable, and the latter is systematically uttered as extralong (cf. Rossi [11], Di Cristo [4]). A melodic rise-fall associated with a rather short syllable at the end of major prosodic constituent is therefore atypical in standard French and optimally contributes to the perceived distinctiveness of the talk of the *banlieues* as proposed by Lehka and Le Gac [7].

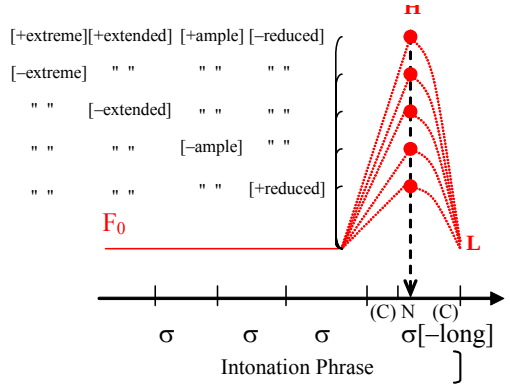
The other prosodic configuration that we found in both groups of speakers is an IP-final high plateau linked to a short syllable. If we represent this plateau as a sequence of HH tones, then the genuine social marker of the *banlieues* may be a high tone H occurring at the beginning of the nucleus and associated with a short syllable. This high tone may be

followed either by another H tone, giving a high plateau (HH) or by an L tone, generating the rise-fall configurations (HL). The long high *F*0 plateau used by Parisian speakers tends to corroborate this idea. In this vernacular, however, the syllabic duration seems not to be a systematic mark of social distinctiveness.

In addition to the particular *F*0 contours, the results clearly show that social prosodic variation is not expressed by surface and continuous acoustic cues as suggested by Duez and Casanova [5]; social variation can be accounted by categorical phonetic features. These features are those that are not distinctive in the intonation system of standard French. Thus, as there is no phonological contrast between [+long] and [–long] syllables at the end of IP in this system, the speakers of the *banlieues* exploit [–long] feature to convey social meanings.

Furthermore, we showed that the fall patterns associated with [–long] syllables are distributed into five distinct categories. These categories can be described in terms of four distinctive features such as [±extreme], [±extended], [±ample] and [±reduced] for example. [+extreme] indicates that the high target of the *F*0 contour reaches the maximum pitch of the utterance. [+extended] and [+ample] will be used when the *F*0 contour is large as compared to the variation of similarly rise-fall contours. They will represent two different degrees of extended variation in pitch range. On the other hand, [+reduced] will refer to small pitch range. Fig. 5 below gives a schematic representation of the rise-fall patterns in terms of the four distinctive features.

Figure 5: *Schematic representation of the 5 rise-fall configurations characterizing the talk of the* banlieues*.*



In addition to accurately describe the rise-fall patterns, the features allow us to easily account for one of the differences between the two groups of participants. That is, the vernacular of Paris appears to be characterized only by [–extended] rise-fall configurations – which correspond to the groups 1, 2 and 3 of plots in fig 3 –, whereas speakers from Rouen use all the pitch range features.

One can wonder whether the high plateau HH could also be described by the same four features. Unfortunately, we do not have enough data to show a similar distribution as that of the rise-fall patterns. Another question concerns the functional statute of the *F*0 contours and the pitch range features. Are the HH and HL sequences the "symmetrical" patterns of the standard intonation contours? That is, HH sequences might correspond to the standard continuation contours LH, both of them ending with a H tone, whereas HL, with a final L may fit with standard conclusive intonemes.

As suggested at the beginning of section 3, HL patterns seem to vary along with the emphasis and the degree of involvement of the speaker into the discussion: the more extended is the contour, the stronger seem to be the emphasis and/or the involvement. As for HH patterns, emphasis and involvement may also have an influence on the pitch height. So far, we have proposed that non standard prosodic patterns end an IP. However, it is likely that pitch range features vary along with the hierarchical statute of the prosodic unit: the more extended is the contour, the higher is the prosodic unit, namely, utterances and even higher prosodic units included in a prosodic structure embracing a whole discourse. Further research has to be carried out to solve this problem.

4. References

[1] Azra J-L. ; Cheneau V., 1994. Language Games and Phonological Theory : Verlan and the syllabic structure of French. Journal of French Language Studies, 4(2), 147-170

[2] Calvet L-J., 1994. *Les voix de la ville : Introduction à la sociolinguistique urbaine*, Payot, Paris

[3] Conein B. ; Gadet F., 1998, Le « français populaire » des jeunes de la banlieue parisienne entre permanence et innovation », *Jugendsprache / Langue des jeunes/ Youth language*, J. Androutsopoulos and A. Scholz (eds.), Peter Lang, Frankfurt, 105-123

[4] Di Cristo. A., 1998. Intonation in French. in D. Hirst, A. Di Cristo. *Intonation systems*. Cambridge University Press, Cambridge, UK

[5] Duez, D.; Casanova, M-H., 2000. Quelques aspects de l'organisation temporelle du parler des banlieues parisiennes. *Revue Parole*, 1, 59-73

[6] Fagyal, Zs., 2003, The Matter with the Penultimate : Prosodic Change in the Vernacular of Lower-Class Immigrant Youth in Paris. In *Proceedings of the 15th ICPhS*, Barcelona, Spain, 671-674

[7] Jamin, M., 2005. Sociolinguistic variation in the Paris suburbs. Unpublished PhD thesis, University of Kent at Canterbury

[8] Lehka, I.; Le Gac D., 2004. Etude d'un marqueur prosodique de l'accent de banlieue. In *Actes des JEP2004*, Fès, Maroc

[9] Léon, P., 1993. *Précis de Phonostylistique*. Nathan, Paris

[10] Méla, V., 1997. Verlan 2000. *Langue Française* VOl. 114, 16-34

[11] Rossi, M., 1999. *L'intonation. Le système du français : description et modélisation*. Gap: Ophrys.

[12] Touati, P., 1987. *Structures prosodiques du suédois et du français*. Travaux de l'Institut Phonétique de Lund, Lund University Press, Lund