

## References

- Beffa, M.-L. & R. Hamayon. 1975. *Éléments de grammaire mongole*. Paris: Dunod.
- Bertagaev, T. A. 1964. *Sintaksis sovremennogo mongol'skogo jazyka* [Modern Mongolian syntax]. Moskva: Nauka.
- Binnick, R. 1979a. *Modern Mongolian – A transformational syntax*. Toronto: University of Toronto Press.
- Binnick, R. 1979b. 'Past and perfect in Modern Mongolian past tense'. In Henry Schwarz (ed.), *Studies on Mongolia: Proceedings of the First North American Conference on Mongolian studies*, 1-13. Bellingham: Western Washington University.
- Binnick, R. 1990. 'On the pragmatic differentiation of the Mongolian past tense'. *Mongolian studies* 13, 47-56.
- Binnick, R. 1991. *Time and the verb. A guide to tense and aspect*. Oxford: Oxford University Press.
- Comrie, B. 1976 *Aspect*. Cambridge: Cambridge University Press.
- Comrie, B. 1985. *Tense*. Cambridge: Cambridge University Press.
- Dahl, Ö. 1985. *Tense and aspect systems*. Oxford: Basil Blackwell.
- Hangin, J. 1968. *Basic course in Mongolian*. Bloomington: Indiana University.
- Poppe, N. 1951. *Khalkha-mongolische Grammatik*. Wiesbaden: Steiner.
- Poppe, N. 1970. *Mongolian language handbook*. Washington: Center for applied linguistics.
- Ramstedt, G.J. 1902. *Über die konjugation des Khalkha-mongolischen*. Helsingfors: Finnische Litteraturgesellschaft.
- Sanzeev, G. D. 1960. *Sovremennyy mongol'skij jazyk*. 2-e izd. Moskva: Izd. vostočnoj literatury.
- Street, J. C. 1963. *Khalkha structure*. Bloomington: Indiana University.
- Svantesson, J.-O. 1985. 'Vowel harmony shift in Mongolian'. *Lingua* 67, 283-327.
- Todaeva, B. X. 1951. *Grammatika sovremennogo mongol'skogo jazyka* [Grammar of modern Mongolian]. Moskva: Izd. AN SSSR.
- Vacek, J., Dž. Luvsandordž & Č. Luvsandžav. 1979. *Učebnice mongolštiny. Hovorový styl*. Praha: Státní pedagogické nakladatelství.

## Temporal Profiles and Tonal Configurations in French Political Speech

Paul Touati

Persuasive monologues constitute basic units for the speaking style adopted by French politicians during political debate. Rhetorical features representative of such a style are intensifiers, parallelisms and meta-discursive forms such as incidental comments. The aim of this paper is to explore how such rhetorical features are translated into prosodic categories and specified into acoustic-phonetic properties. A methodological framework developed in order to study the relationship between prosody and discourse categories is used. Focal accent, contrast in pitch range, and the use of pauses seem to account for typical prosodic means used in French political rhetoric.

### Introduction

In spontaneous speech, macrosituational constraints such as dominance relationships between speakers, general turn-taking conditions, and topic arrangements bear in a pregnant way on the use of a particular speaking style. It seems as well that prosodic correlates of a particular speaking style are specified by the speaker so that they are easily detected at a macrolevel by the listener (see Bhatt & Léon 1991).

In today's increasing mass media presence, politicians are often judged by their capacity to phrase their political message in a convincing way. Persuasive monologues constitute basic units for the speaking style they adopt e.g. when addressing a speech to the nation or when participating in pre-electoral television debates (see Bruce & Touati 1991). Rhetorical features representative of such a style are, among others things, intensifiers, parallelisms and meta-discursive forms such as incidental comments (see Nir 1988). Intensifiers are often used in order to highlight certain aspects of the argumentation. One way for the speaker to intensify what is said is to underline individual words tonally and rhythmically. The function of parallelism is to facilitate monologue processing by reducing information density and increasing redundancy; it is achieved by repeating certain words or phrases. Incidental comments are used to relate the speaker himself, his

contender, or a new argument to the topic which is under discussion. Incidental comments are included in a topic-comment structure produced with specific rhythmic and tonal contrasts.

The aim of this paper is to explore how such rhetorical features symptomatic of an emphatic style are translated into prosodic categories and specified into acoustic-phonetic properties. We will concentrate on the temporal and tonal changes within one complete speaking turn in a debate between two French political veterans. Previously, an analysis of the turn was briefly carried out within the methodological framework developed for the analysis of dialogue prosody in different languages (see KIPROS project in Bruce & Touati 1990a).

## Methodology

There is without doubt a current interest in investigating spontaneous speech. However, the term 'spontaneous speech' covers a considerable range of speech corpora. In this respect, it might be important to establish a difference between a corpus of spontaneous speech elicited *intra muros*, in the context of a phonetic laboratory for experimental purposes, and a corpus of spontaneous speech produced *extra muros*, without an experimental purpose (why not call the former 'spontaneous lab speech' and the latter 'spontaneous speech'?). We would like to suggest that this terminological adjustment seems relevant also insofar as it has impact on data collections and experimental methods<sup>1</sup>.

Because we were working with spontaneous speech, the question of the research setting proved to be crucial. It has resulted in a methodology where restricted samples of speech material (from conversations, interviews, political debates and radio programs) have been studied from different angles. We have been conducting four different kinds of analyses (see Bruce & Touati 1990a): (1) analysis of the discourse structure of the speech corpus without specific reference to prosodic information (see Bruce & Touati 1990b for the different aspects of the discourse analysis and below for an exemplification), (2) auditory analysis (see Appendix 1: Table 4 for an overview of the transcription system and for an exemplification; Bruce & Touati 1990a and 1990b for a more comprehensive presentation), (3) acoustic-phonetic analysis, and (4) analysis-by-synthesis (see Bruce et al. 1990).

<sup>1</sup>For example, the cost represented by working with spontaneous speech could be a relative lack of control on corpora and on experimental settings. This makes it difficult to estimate results, if only statistically (results obtained on spontaneous speech should therefore only pretend to the 'scientific legality' of case studies).

### (1) Discourse structure of the turn

With a certain simplification, one may describe the turn in terms of the following aspects:

*Turn-taking aspect.* The turn is part of a debate; it ends with a competitive interruption (for further details concerning prosodic features and the management of interruptions, see French & Local 1986). One of the speakers apparently does not respect one of the conventions inherent to political debate: that the turn management is controlled by the journalist-chairman so that he has to wait for receiving the turn.

*Interactive aspect.* The turn is argumentative when the addressee is the other participant but is persuasive when the addressees are the viewers. Or, quoting Nir 1988: "the basic assumption underlying the debate is that every achievement in the referential function of dispute with the opponent may be translated into conative achievements in one's effort to persuade voters".

*Discourse aspect.* In the following example turn, there is a major topic – *le cumul des mandats* 'having concurrently several mandates' – and two minor topics – *les jeunes* 'young people' and *le maire* 'the mayor'. In the course of the topic scenario developed by the speaker, a minor topic appears first to express an incidental support ('Young people are on my side'). It is followed by the major topic, where the speaker's political opinion and his disagreement with his opponent are formulated ('one should not accept as you do the possibility of having several mandates concurrently such as representative and mayor'). The second minor topic functions as an exemplification ('France is the only country in the world where the mayor is also a representative'). All three topics are clearly coordinated by verbs of opinion such as *j'estime* 'I consider' (twice) and *je crois* 'I believe'. It seems that, at different levels of the discourse structure, these verbs play the role of rhetoric pivots in the same manner as repeated words (*les jeunes*, *le maire*) play the role of head node expressions at the level of the rhetoric figure of parallelism. In the section *Temporal aspects of some repeated items* below, special attention is devoted to the temporal aspect of words which are repeated several times in the course of the turn.

### (2) Auditory analysis

An important step in the general analysis is the auditory analysis, which provides an orthographic and prosody-oriented transcription of what has been recorded (see Appendix 1: Table 4). The transcription encodes five prosodic features: 1) accentual prominence, 2) phrasing, 3) pitch range, 4) boundary tones, and 5) pausing.

### (3) Acoustic-phonetic analysis

The acoustic-phonetic analysis that we have undertaken here is carried out by examining two different kinds of output representation: the so-called temporal profile, which reflects how syllable duration varies in time, and tonal configuration, which captures  $F_0$  variation in time.

When looking at these representations, it is possible to focus on local relevant tonal and temporal segments related to categories as accentual prominence, pitch range, and pauses encoded in the auditory transcription. Another possibility is to look at them in a syntagmatic way, considering more global temporal and tonal changes.

Both are based on the segmentation of acoustic recordings into relevant prosodic domains from syllable size to larger units through visual inspection and interactive listening. The recorded material was digitalized and analyzed using the LUPP program (see Eriksson 1990).

### (4) Analysis-by-synthesis

A comparison between two versions of the turn – the original version and a version where all the pauses were removed – was made (for further comments about this experiment, see *Pause durations* below).

## Temporal profiles

### *Accentual prominence – Results and discussion*

The turn is about 40 seconds long. The pause time is about 11.6% of the turn duration. In order to specify the temporal effects of accentual prominence upon syllable duration – more particularly the effect of focus – several preliminary analyses were carried out.

The first analysis concerns the distribution of syllables with respect to the number of segments (see Figure 1).

The data shows that there is a tendency for two-segment syllables to be dominant (one-segment syllables are exclusively unaccented syllables). However, the two-segment syllable dominance is here of a lesser extent than for text reading (see Fant et al. 1991: Figure 7). The larger three-segment syllable occurrence observed here is probably due to schwa deletion, which is a more common phenomena in speaking than in reading (for a recent study, see Hansen 1991).

Figure 2 provides an overview for syllable durations as a function of their accentual prominence and of the number of segments included in the syllable.

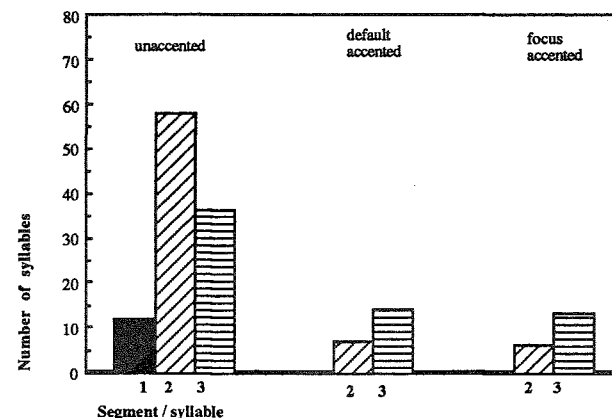


Figure 1. Graph of distribution of syllables with respect to the number of segments.

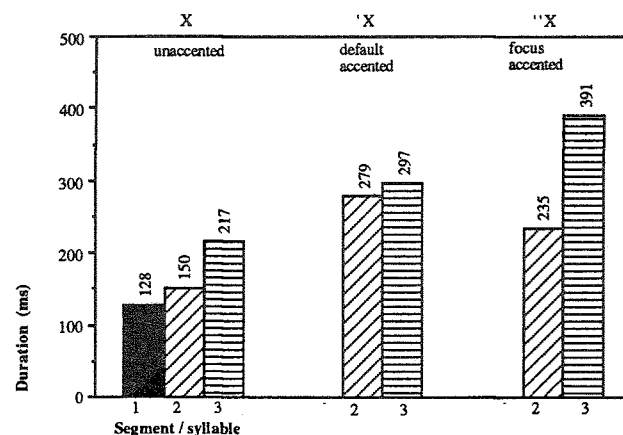


Figure 2. Graph of syllable durations as a function of their accentual prominence and of the number of segments included in the syllable.

For unaccented syllables, there is a difference between on the one hand one and two-segment syllables and on the other hand three-segment syllables, which show higher duration values.

The difference is less marked within the default accented category, where both two-segment syllables and three-segment syllables are affected by terminal lengthening in such a way that differences in duration due to number of segments are overridden.

In the focus accented syllable category, three-segment syllables show clearly a larger durational increase. Here, it is important to observe that the majority of these three-segment syllables are monosyllabic words in prepausal position, while the two-segment syllables are word-initial syllables (the default position for the focal accent in polysyllabic words).

Close examination of the syllable durations revealed that boundary strength in terms of prepause versus non-prepause position should be included in a temporal modelling of the syllable (see also Fant et al. 1991).

Table 1. Syllabic temporal prominence (with mean values in ms)

unaccented syllables (176 ms)		accented syllables			
default accented		focus accented			
non-prepause (223 ms)	prepause (318 ms)	focus accented on 1st syllable (211 ms)	focus accented on other syllable	non-prepause (331 ms)	prepause (537 ms)

As shown in Table 1, six categories of syllable are therefore defined with regard to three kinds of accentual prominence and two kinds of boundary in order to predict significantly syllabic temporal prominence.

Here, I would like to quote Fant et al. 1991 who write that, in French text reading, there is "a relatively smaller difference in syllable complexity and a lower degree of stress-induced segmental lengthening" (than in Swedish and English text reading). In spontaneous French, in particular political speech, and in contrast with reading, it seems actually that there is a potentially high variation in syllable complexity (due e.g. to the possibility

of schwa deletion) and a relatively large degree of accent-induced syllable lengthening (due to a stronger focalisation at the word level, to more frequent co-occurrence of default accent with pause, and to different accentual contexts as shown in Table 1).

*Pause – Results and discussion*

Figure 3 shows duration values for the pauses of the turn. Apparently, there are three groups of pauses. The one-item group with a 569 ms pause occurs in the context:

→ où le "mairie" partage son "temps" entre "Paris" (..) et sa province

The speaker makes a very long pause between the words *Paris* and *et sa province* as if to signify the distance between the two places, a distance which makes it impossible to concurrently be a representative in Paris and a

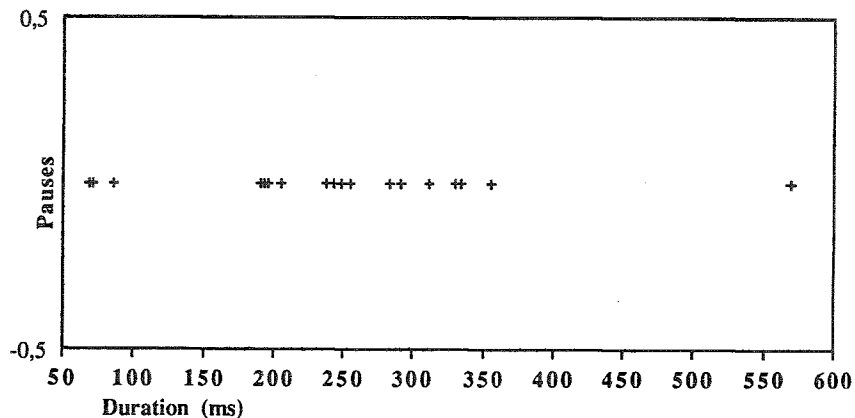


Figure 3. Pause duration values.

mayor in province. There is a minor group with three very short pauses under 100 ms; two of these serve as rhythmical breaks before or after an important lexical item. The majority of the remaining pauses are located in a group with values between 200 and 350 ms (mean: 263 ms and standard deviation: 56 ms). In the transcription, we have assumed that where a real

pause is perceived, two degrees of pause length are noted: short [(.)], and long [(..)]. A frequency distribution analysis of the latter group shows that 57% of pauses have a duration between 191-278 ms and 43% between 278-366 ms.

In order to estimate the perceptual effect of the pause *a contrario* and in an impressionistic way, an experiment was carried out where the pauses were removed. It was relatively clear that pauses were particularly important just before a large pitch range change should take place, in a pivot position. For example, when the underlined pause in

mais je "vois très 'bien | ↓ que vous ne le ferez 'pas || (..) ↑ je "crois que nous sommes le "seul pays au "monde || (.)

is removed, the auditive result is of a clear pitch break which could be nearly interpreted as a change of speaker. In a similar experiment, Sugito 1990, reporting on a Japanese TV newscast where pauses were removed wrote: "TV news without pauses was considered too fast to understand and even though there was a single speaker, sometimes it was perceived that two speakers were overlapping each other."

#### Temporal aspects of some repeated items – Results and discussion

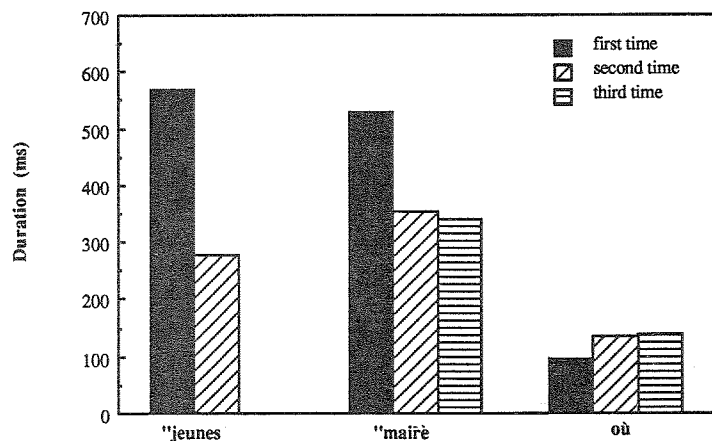


Figure 4. Temporal shortening of lexical words vs. temporal lengthening of function words in recurrent phrases.

Figure 4 presents duration values for items which are repeated during the turn. This figure shows that there is a temporal shortening of repeated lexical words after their first occurrence, when the word represents given knowledge (see also Campbell 1991). But it is manifested by a lengthening of function words which appear in the same repeated phrase after their first occurrence. It seems that these functional items are used to trigger a temporal resetting of the recurrent phrase.

### Tonal configurations

#### Accental prominence – Results and discussion

Figure 7 in Appendix 2 presents three examples of LH\* and LH\*L focal configurations. Table 3 shows mean Fo values and standard deviations for all the LH\* and LH\*L focal configurations of the analyzed turn.

In an earlier comparison of French accentual prominence in read and spontaneous speech (Touati 1991), it was shown that rather similar Fo configurations could be found in both speaking styles (see Table 2 below). However, this study reveals that in spontaneous speech there is a tendency to express default demarcative accents by a simultaneous Fo movement and a pause. In an interview, triangular Fo movements (LH\*L) aligned with the default accented syllable were also found (see Touati 1991 and for a similar observation see Léon & Bhatt 1987). A larger Fo range was also used to produce focal prominence.

Table 2. Fo configurations in read and spontaneous speech (Touati 1991)

<i>default accent</i>	
on the last syllable of an utterance (a turn) internal phrase:	
[‘x]=LH*	(Fo rise)
[‘x]=H*L	(Fo fall)
[‘x]=LH*L	(triangular Fo: rise and fall)
on the last syllable of an utterance (a turn) final phrase:	
[‘x]= (D)..L*	(Fo fall by downstepping)
[‘x]=LH*	(Fo rise)
[‘x]= LHL*	(triangular Fo: rise and fall)
<i>focal accent</i>	
[‘x]= LH*	(Fo glide or Fo level jump)

**Table 3.** Mean Fo values and standard deviations for all the (1) LH\* and (2) LH\*L focal configurations of the analyzed turn

(1)	(n=6)	L	H*	(2)	(n=11)	L	H*	L
	$\bar{X}$	98	151		$\bar{X}$	123	242	149
	SD	9	28		SD	21	37	65

As shown in Appendix 2: Figure 7, the speaker focalized using LH\* accents on the initial syllable of polysyllabic words (without expanded pitch range (1-2); with expanded pitch range (3-4)) and LH\*L accents aligned with the whole word in monosyllabic words (without expanded pitch range (8); with expanded pitch range (5-7)). However, the mean Fo values for all the (1) LH\* and (2) LH\*L focal configurations of the analyzed turn (see Table 3) reveal that the Fo rising on the initial syllable is often produced without expanded pitch range. Meanwhile, the Fo rising in the triangular focalisation in monosyllabic words is produced with expanded pitch range. Both realisations are probably symptomatic of an emphatic style, but only the second one seems to function as a rhetorical intensifier.

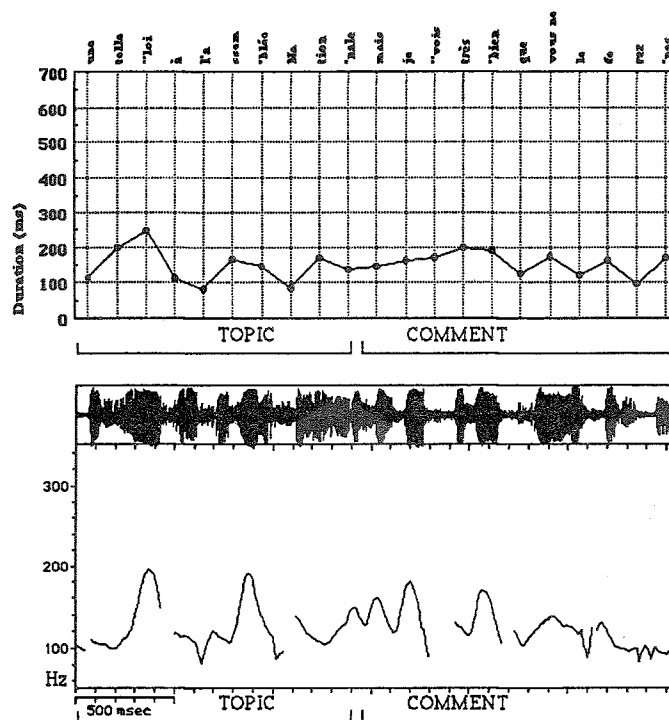
*Temporal profile and tonal configuration in a topic-comment structure – Results and discussion*

The notions of global temporal profile and tonal configuration are best illustrated with a particular structure – a *topic-comment* structure – which takes place over several prosodic phrases. Such a structure was adopted when incidental comments were made.

Two examples of the temporal profile and the tonal configuration of a topic-comment structure are given in Figures 5 and 6 (the comment part is underlined).

In the topic phrase, successive syllables are patterned according to either rhythmic alternation or to augmentative rhythm and with a normal or an expanded Fo range. On the other hand, the comment phrase begins with a string of syllables of more or less equal duration and with a reduced Fo range. Moreover, no pause appears between the topic and the comment. Instead of a pause, the default accented syllable of the topic was lengthened as in *pro'vince* (see Figure 6).

Both the absence of a pause and a more regular rhythm at the beginning of the comment give the impression of an accelerating tempo when passing from the topic to the comment. This prosodic strategy allows the speaker to rapidly and with a minimal risk of being interrupted deliver seemingly off-the-cuff comments which are actually well-prepared qualifiers or criticisms.



**Figure 5.** Temporal profile (above) and tonal configuration (below) of the topic-comment structure:

(→ et je serais heu'reux | que vous propo'siez | cette mo'tion ||  
 une telle "loi à l'Assem'blée Natio'nale ||  
 ↘ mais je "vois très 'bien | ↓ que vous ne le ferez 'pas || (..)

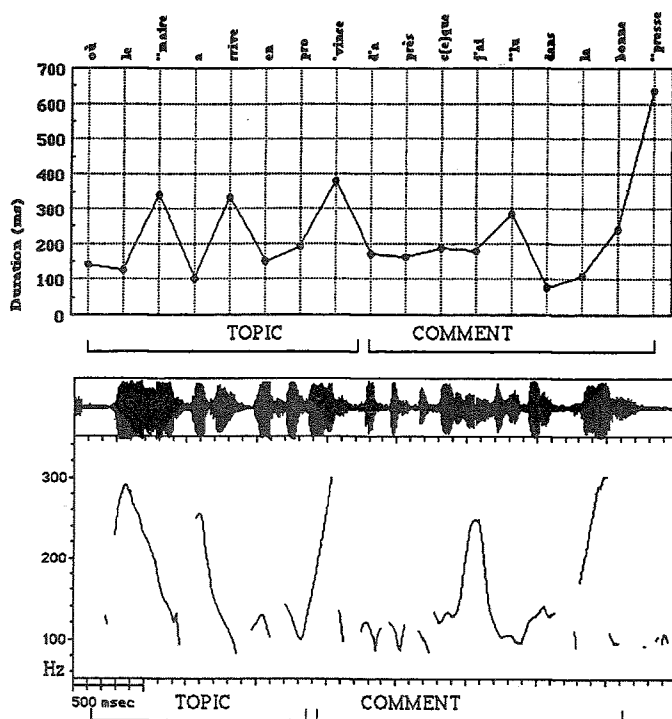


Figure 6. Temporal profile (above) and tonal configuration (below) of the topic-comment structure:

→ où le "maire arrive en province //  
 ↘ d'après c(e) que j'ai "lu dans la bonne "presse // (..)

## Conclusion

Working with spontaneous speech affords an opportunity to gain insights into prosodic variation due to macrosituational constraints. The study of a fragment of a political debate shows that focal accent, contrast in pitch range, and the use of pauses seem to account for typical prosodic means used in French political speech. Still, specific constraints due to the communicative setting as well as idiolectal tendencies have to be taken into consideration in assessing the systematic nature of these prosodic means in expressing political rhetoric.

## References

- Bhatt, P. & P. Léon. 1991. 'Melodic patterns in three types of radio discourse'. *Proceedings of the ETRW 'Phonetics and Phonology of Speaking Styles'*, 11-1-11-5. Barcelona.
- Bruce, G. & P. Touati. 1990a. 'On the analysis of prosody in spontaneous dialogue'. *Working Papers 36*, 37-55. Lund: Dept. of Linguistics.
- Bruce, G. & P. Touati. 1990b. 'Analysis and synthesis of dialogue prosody'. *In Proc. ICSLP 90, Vol.1*, 489-492. Kobe.
- Bruce, G. & P. Touati. 1991. 'On the analysis of prosody in spontaneous speech, with exemplification from Swedish and French'. *Proceedings of the ETRW 'Phonetics and Phonology of Speaking Styles'*, 13-1-13-5. Barcelona.
- Bruce, G., U. Willstedt & P. Touati. 1990. 'On Swedish interactive prosody: Analysis and synthesis'. In K. Wiik & I. Raimo (eds.), *Nordic Prosody V*, 36-48. Åbo University.
- Campbell, W. N. 1991. 'Durational shortening and anaphoric reference'. *Proc. ICPHS 91, Aix-en-Provence, 19-24 August 1991, Vol. 2*, 286-289.
- Eriksson, L. 1990. 'New Phonetic Programmes for Macintosh'. *Working Papers 36*, 73-80. Lund: Dept. of Linguistics.
- Fant, G., A. Kruckenberg & L. Nord. 1991. 'Durational correlates of stress in Swedish, French and English'. *Journal of Phonetics 19*, 351-365.
- French, P. & J. Local. 1986. 'Prosodic features and the management of interruptions'. In C. Johns-Lewis (ed.), *Intonation in discourse*, 157-173.
- Hansen, A. 1991. 'The covariation of [ə] with style in Parisian French: an empirical study of 'E caduc' and pre-pausal [ə]'. *Proceedings of the ETRW 'Phonetics and Phonology of Speaking Styles'*, 30-1-30-7. Barcelona.
- Léon, P. and Bhatt, P. 1987. 'Structures prosodiques du questionnement radiophonique'. *Etudes de Linguistiques Appliquée 66*, 88-105.
- Nir, R. 1988. 'Electoral rhetoric in Israel - The televised debates. A study in political discourse'. *Language Learning 38:2*, 187-208.
- Sugito, M. 1990. 'On the role of pauses in production and perception of discourse'. *In Proc. ICSLP 90, Vol. 1*, 513-516. Kobe.
- Touati, P. 1991. 'Accentual prominence in French: read and spontaneous speech'. *PERILUS XIII*, 53-56. Institute of Linguistics, University of Stockholm.

## Appendix 1

Table 4. Five prosodic categories and their prosodic transcription in Swedish and French with exemplification from French

Definition	Transcription	Swedish	French
<b>1) Prominence</b>			
highest level of prominence/focal accent	"x	+	+
higher level of prominence/primary stress	'x	+	+
lowest level of prominence/secondary stress	.x	+	-
<b>2) Phrasing</b>			
major group boundary	x x    x x	+	+
minor group boundary	x x   x x	-	+
<b>3) Pitch range</b>			
markedly expanded	↑ x x	+	+
slightly expanded	↗ x x	+	+
same	→ x x	+	+
slightly reduced	↘ x x	+	+
markedly reduced	↓ x x	+	+
<b>4) Boundary tones</b>			
non-raised initial boundary tone	unmarked	+	+
non-raised final boundary tone	unmarked	+	+
raised initial boundary tone	' x x	+	+
raised final boundary tone	x x'	+	-
<b>5) Pausing</b>			
short pause length	x x (.)	+	+
long pause length	x x (..)	+	+

Notes: + = Category used in that language; - = Category not used in that language

A: → (J'e) j'es'time | (.) que | (.) ↗ comme d'ailleurs les "jeunes | (.) ↘ vous l(e) remar 'qu(e)rez dans c(e) son'dage | (.) → les "jeunes sont beaucoup plus près d(e) mes "thèses || (.) → J'es'time | qu'il devrait y avoir un "re'fus | (.) du "cumul des man'dats || → et je serais heu'reux | que vous propo'siez | cette mo'tion || une telle "loi à l'Assemblée Natio'nale || ↘ mais je "vois très 'bien | ↓ que vous ne le ferez 'pas || (..) ↑ je "crois que nous sommes le "seul pays au "monde || (.) → où le "maire (.) est égale'ment (.) "dépu'té || (..) → où le "maire "partage son "temps | ↘ entre "Pa'ris | (..) ↗ et sa pro'vince || (.) → où le "maire arrive en pro'vince || ↘ d'après c(e) que j'ai "lu dans la bonne "presse || (..) ↘ le "vendredi ma'tin pour en repartir le dimanche "soir || (..) → eh bien je n(e) "crois pas très sincè'rement

B: méfiez-vous de la bonne presse

## Appendix 2

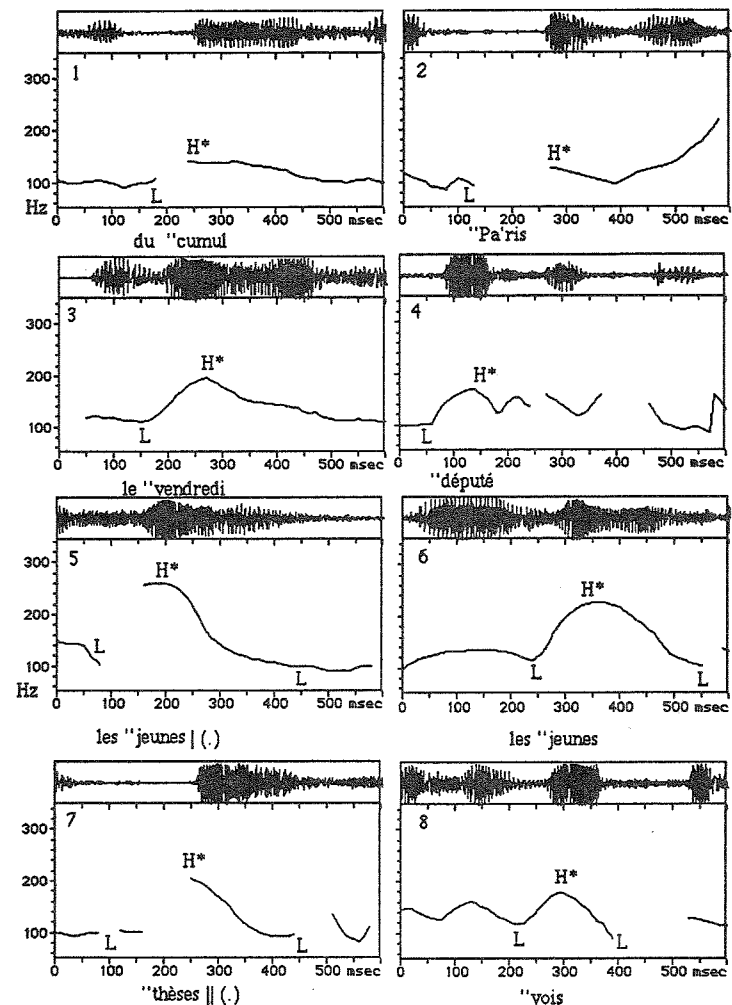


Figure 7. LH\* focal accents on the initial syllable of polysyllabic words (without expanded pitch range (1-2); with expanded pitch range (3-4)) and LH\*L focal accent aligned with the whole word in monosyllabic words (without expanded pitch range (8); with expanded pitch range (5-7)); waveform (above), Fo configuration (centre) and orthographic transcription with auditory prosodic markers (below).