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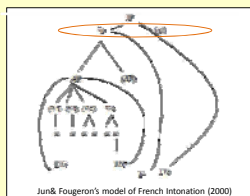michelas@lpl-aix.fr, mariapaola.dimperio@lpl-aix.fr

SYNTACTIC AND LENGTH EFFECTS ON FRENCH PROSODIC PHRASING

Introduction

In most of the studies, prosodic constituency is viewed as a hierarchy of domains.
As in English, an **intermediate phrase (ip)** is postulated for French (Jun and Fougeron 2002).
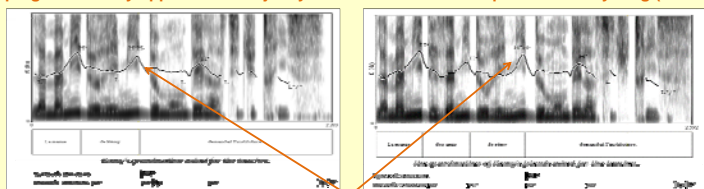
But Jun & Fougeron's ip definition is restricted to specific syntactic constructions and unclear phonetics and phonological properties.

Jun& Fougeron's model of French Intonation (2000)

Recent studies show phonological evidence for the intermediate phrase in French (ip)
D'Imperio & Michelas 2010, Michelas & D'Imperio 2010

An ip right boundary appears at a major syntactic break when the ip is sufficiently long (>=2APs)

The ip boundary is durationally and tonally marked (by a return to the register level set by the first LH* of the IP)

Methodology

Stimuli
Investigation of the phonetic cues associated with the prosodic boundaries within subject NPs
Corpus variables:
1- Length of the subject NP (1AP / 2 APs / 3 APs / 4 APs / 5 APs)
2- Length of each AP within the NP subject (short APs / long APs)

		Short APs within the Subject NP (3 syllables/AP)
Length of the Subject NP	1 AP	"La mairie a été entièrement rénovée à l'arrivée du nouveau maire."
	2 APs	"La mairie de Paris est un magnifique édifice datant du 18ème siècle."
	3 APs	"Le parvis de la mairie de Paris est envahi par les militants."
	4 APs	"L'arrondi du parvis de la mairie de Paris permet d'accueillir beaucoup de touristes."
	5 APs	"Le joli arrondi du parvis de la mairie de Paris a été élargi."
		Long APs within the Subject NP (5 syllables/AP)
	1 AP	"Le gorgonzola est un fromage de vache fabriqué en Italie."
	2 APs	"Les macaronis au gorgonzola sont très rapides à préparer. "
	3 APs	"Les macaronis au gorgonzola de Catarina sont vraiment délicieux. "
	4 APs	"Les macaronis au gorgonzola de la vieille mamie de Catarina sont vraiment délicieux."
	5 APs	"Les macaronis ou les spaghettis au gorgonzola de la vielle mamie de Catarina sont vraiment délicieux"

Measures
- Duration of target syllables(normalization: targetV/V1 ratio)
- F0 height of target syllables (normalization: targetH/H1 ratio)

Task
2 French native speakers read the 96 sentences 4 times (384 sentences)

Statistical analyses
Mixed models

Issues

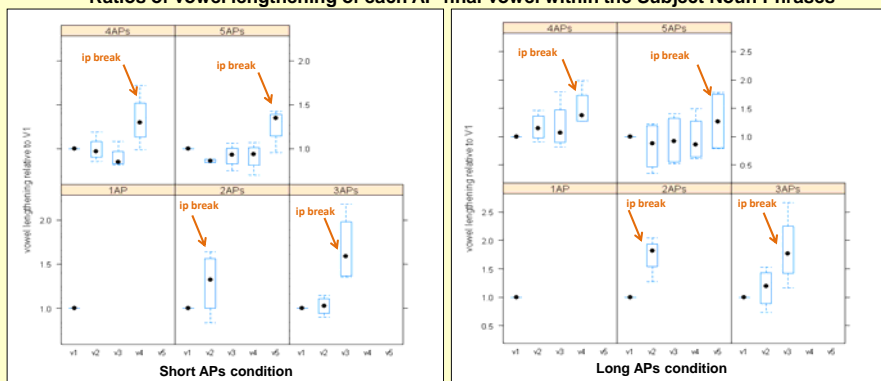**Do the phonetic cues associated to the ip-break reflect the phonological structure?**
If we manipulate the number and the length of the constituents within the ip, does this manipulation affect the strength of the phonetic cues associated to the ip-boundary?

PREDICTIONS
Same preboundary lengthening associated to the ip-break independent of number and the length of the APs in the Noun Phrase
Same preboundary lengthening associated to the APs-break within the ips

Results

Ratios of vowel lengthening of each AP-final vowel within the Subject Noun Phrases

Short APs condition

Long APs condition

Duration cues associated to ip-break are always greater than the ones associated to AP-breaks Independent of size of each AP and of number of APs within the NPs

Duration ratios of the ip-break are independent of both NP and AP length

Discussion

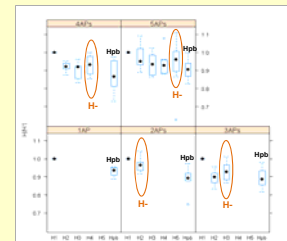**Prosodic length does not seem to affect ip-phrasing in French**
- Durational cues at the ip-break not affected by NP and AP length

Additional evidence for an ip discrete boundary: tonal cues

Ratios of f0 values of each AP-final vowel relative to f0 in first LH* for both AP-length conditions

The ip-final syllables are reset relative to the first AP-final LH* of the utterance

Hpb= First LH* after the ip boundary

The ip-break refflects the phonological structure
Discrete (and not gradual) phonetic cues associated to AP & ip breaks

Conclusions

- Prosodic length does not seem to affect phonetic cues of ip-phrasing in French
- APs belonging corresponding to a maximal syntactic projection are grouped within a single ip
- Discrete phonological cues associated to the ip-boundary level

Bibliography

D'Imperio, M. and Michelas, A. (2010). Embedded register levels and prosodic phrasing in French. *Proceedings of the Speech Prosody 2010 Conference*, Chicago, Etats-Unis, 4 pages.

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Jun S.-A. & Fougeron C. (2000), A Phonological model of French intonation. In A. Botinis (ed.) *Intonation: Analysis, Modeling and Technology*. Dordrecht : Kluwer Academic Publishers, 209-242.