

When *aussi* Mixes Things Up

Prosodic Disambiguation with Additive Focus in French

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I. Introduction

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1.1 Association with focus

Adverbs such as *only* (*restrictive adverbs*), *also* (*additive adverbs*), contribute to the meaning of the sentence (affect its truth condition), depending on the position of the focal accent (Jackendoff, 1972; Rooth, 1985; Krifka, 2006).

1) John only introduced Bill to Sue.

a) John only introduced BILL_F to Sue.

‘The only person John introduced to Sue is Bill.’

b) John only introduced Bill to SUE_F.

‘The only person John introduced Bill to is Sue.’

I. Introduction

1.2 Additive focus in French

French additive focus: *aussi, également* (De Cesare, 2015).

- ❖ Associative adverbs indicate that at least one additional alternative to the proposition is true (Abeillé & Godard, 2021).

2) Jean parle **aussi** chinois.

*Jean speak*_{3SG.PRS} *also*_{ADV} *Chinese*_N

(Jean speaks Chinese in addition to another language)

I. Introduction

1.2 Additive focus in French

- ❖ The focusing adverbs present some flexibility within the sentence.

3) a. Jean **aussi** parle chinois
Jean *also*_{ADV} *speak*_{3SG.PRS} *Chinese*_N

b. Jean parle **aussi** chinois
Jean *speak*_{3SG.PRS} *also*_{ADV} *Chinese*_N

c. Jean parle chinois **aussi**
Jean *speak*_{3SG.PRS} *Chinese*_N *also*_{ADV}

(Patin & Benazzo, 2017: P110)

- ❖ When added to a verb or a VP, they can appear between the auxiliary and the past participle.

4) Paul a **aussi** corrigé ses copies
Paul *AUX.3SG.PRS* *also*_{adv} *mark*_{PST.PTSP} *POSS.PL* *paper*_{PL}

'Paul also marked his exam papers.'

(Adapted from Abeillé & Godard, 2021 : P966)

I. Introduction

1.3 Prosody in French

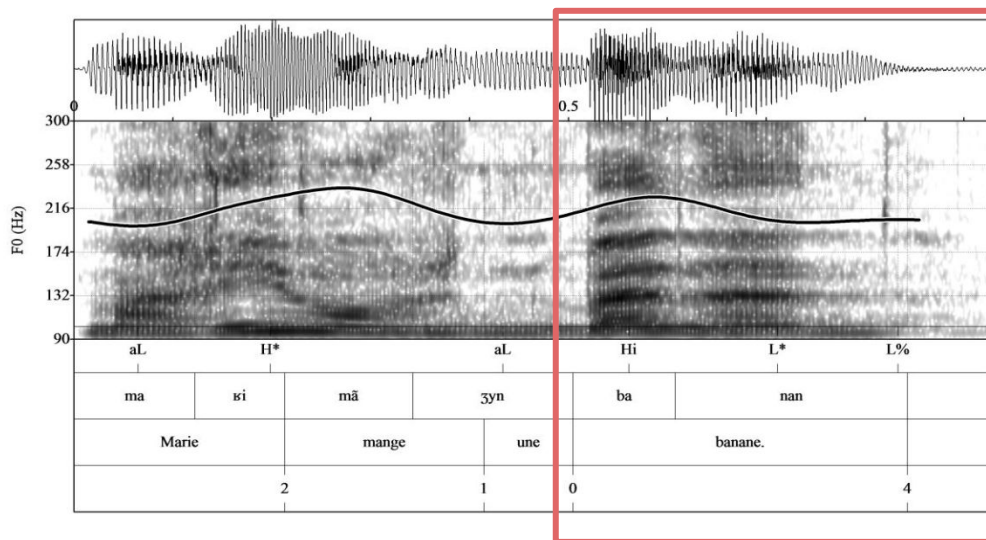
❖ French intonation:

- ✓ “ Boundary Language ” (Vaissière, 1991), with two prosodic levels above the word (Accentual phrase & Intonation Phrase) (Jun & Fougeron, 2002; Féry, 2017).
- ✓ Final accent: marked by lengthening of the final syllable instead of a lexical pitch accent (Rossi, 1980).

I. Introduction

1.4 Focus prosody in French

- ❖ F_ToBI (Delais-Roussarie et al., 2015)



- ❖ Broad focus in statements

- ✓ Falling contour at the end.
- ✓ Intonation pattern of last AP:

Hi L* L%

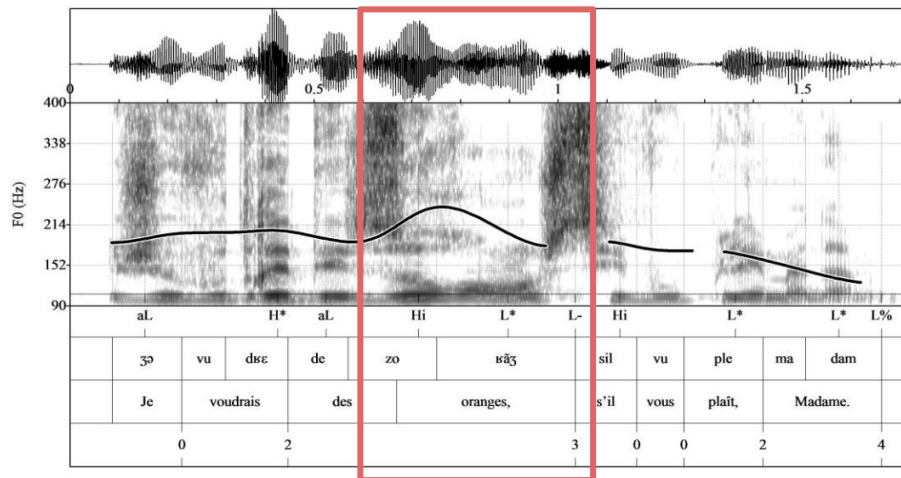
Fig. 3.8: Waveform, Spectrogram and F0 track of the sentence *Marie mange une banane*

‘Marie is eating a banana’ produced by a speaker from a southern variety (Toulouse).

I. Introduction

1.4 Focus prosody in French

- ❖ F_ToBI (Delais-Roussarie et al., 2015)



- ❖ Narrow focus in statements

- ✓ The contour of narrow focus:

Hi L* L-

- ✓ The post-focal sequence:

L* L %

Fig. 3.11: Waveform, spectrogram and F0 track of the narrow-focus statement *Je voudrais des oranges s'il vous plaît, Madame* 'I want some ORANGES, please, Madam' produced by a speaker from a Northern Variety (Lille).

I. Introduction

1.5 Association with focus & prosody in French

- ❖ French restrictive focus: *seulement* (Beysade et al., 2008)
 - A terminal or non-terminal nuclear accent marks the right boundary of the associate.

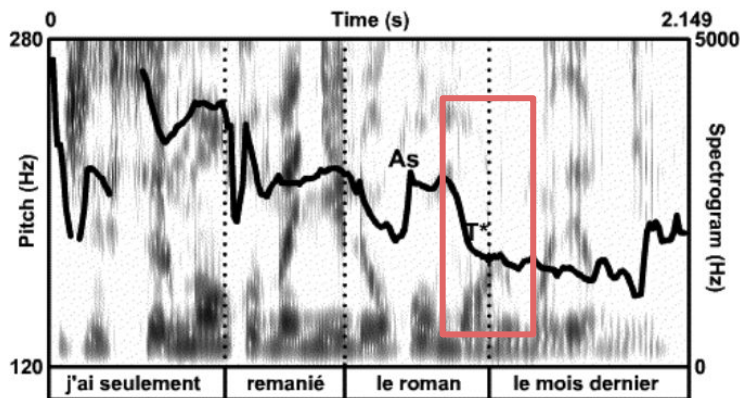


Figure 1. L'associé porte le T*. As=accent secondaire, T*=accent nucléaire terminal

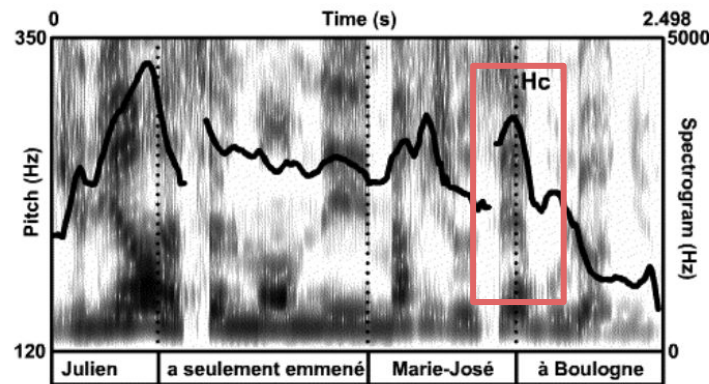
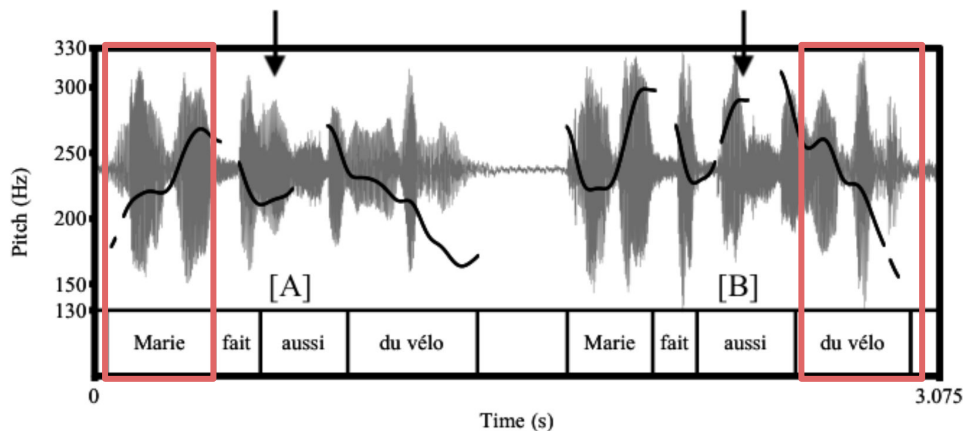


Figure 2. L'associé porte un Hc. Hc=accent nucléaire non terminal.

I. Introduction

1.5 Association with focus & prosody in French

- ❖ French additive focus: *aussi* (Benazzo & Patin, 2017); *également* (Patin & Benazzo, 2018)
 - Different prosodic cues to disambiguate the meaning of the sentences, but not systematic.



Research questions

- ❖ What prosodic cues do French monolingual native speakers use to mark additive focus?
- ❖ Are the prosodic cues of additive focus similar to those of restrictive focus?

Research goals

- ❖ Define the intonation patterns used by native speakers to disambiguate additive focus in French.
- ❖ Design our experimental protocol to investigate the perception of ambiguous sentences with additive focus.

II. Production Experiment

II. Production Experiment

2.2 Present study

Participants

6 French monolingual native speakers

- ✓ Linguistic students who studied in Paris (2022)
- ✓ Age 20-36 years-old (mean 23.3, SD 6.25).
- ✓ Biological gender-female
- ✓ All six speak at least one L2 (English).
- ✓ All six have lived in the Paris region for at least 3 years.
- ✓ None of the six has lived more than 6 months in another country.

II. Production Experiment

2.2 Present study

Items

◆ Context A:

‘Hugo and Noé have presented all of their colleagues to Manon.’

5) Hugo a aussi présenté sa femme à Manon.
Hugo AUX.3SG.PRS *also*.ADV *introduce*.PST.PTCP POSS.F.SG *wife* *to*.PREP *Manon*

‘Hugo also introduced his wife to Manon.’

◆ Context B:

‘Hugo and Noé have presented their wives to their neighbours.’

II. Production Experiment

2.2 Present study

Interface of Experiment

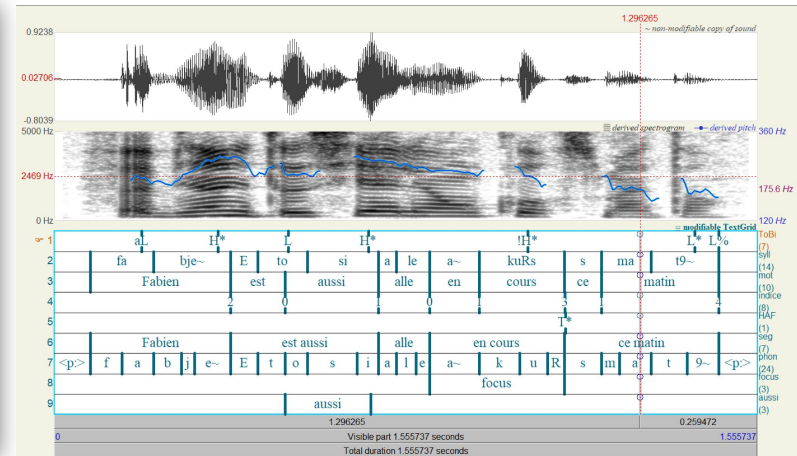
- ❖ Read the context silently.
- ❖ Pronounce the sentence according to its interpretation in context

Emma et Sabine ont révisé leurs notes le jour avant l'examen

Emma a aussi révisé ses exercices la veille.

Corpus Annotation

- ❖ Forced Alignment with WebMAUS Basic + manual corrections.
- ❖ Prosodic annotation carried out manually using the F_ToBI system (Delais-Roussarie et al., 2015).

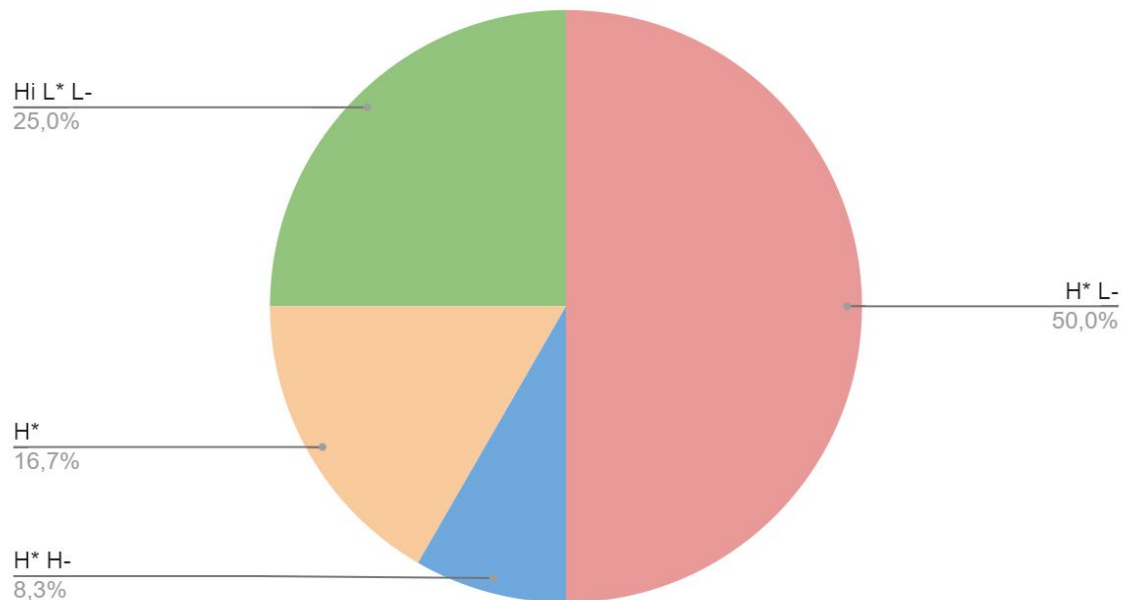


II. Production Experiment

2.3 F_ToBI Prosodic Analysis : results

- 1) Associate in the middle of the sentence, as argument of the verb (24 sentences)

Middle-position Associates : Distribution of intonation patterns



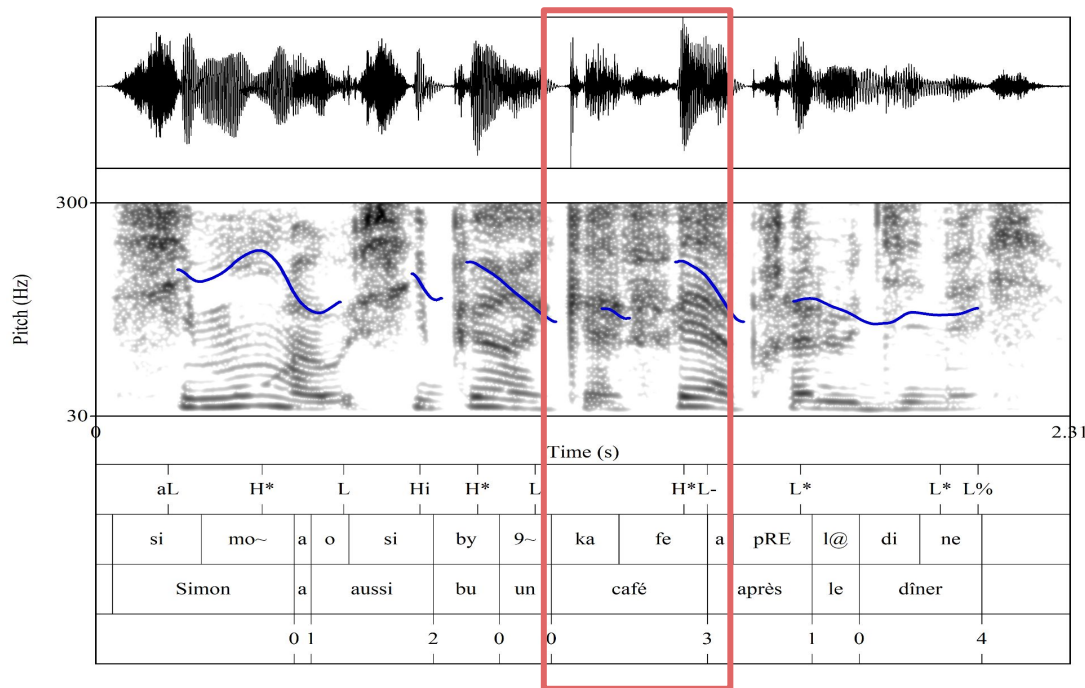
Middle-position:

Hugo a aussi présenté
sa femme à Manon.

II. Production Experiment

2.3 F_ToBI Prosodic Analysis : results

- 1) Associate in the middle of the sentence, as argument of the verb (24 sentences)



❖ **The most frequent intonation pattern**

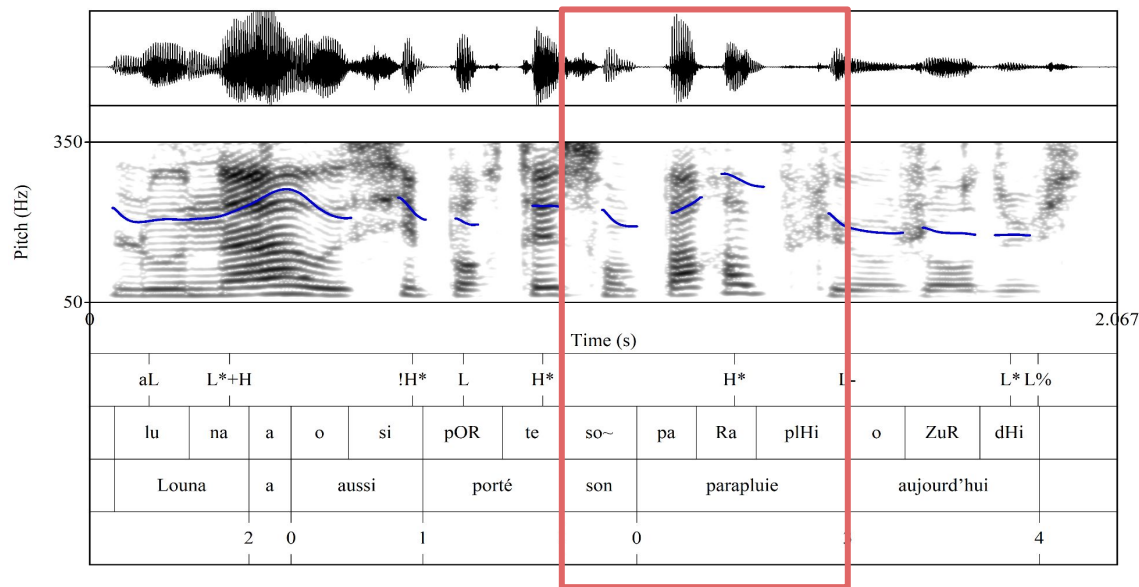
H* L-

(50 % of the corpus)

II. Production Experiment

2.3 F_ToBI Prosodic Analysis : results

- 1) Associate in the middle of the sentence, as argument of the verb (24 sentences)



❖ H* shifting:

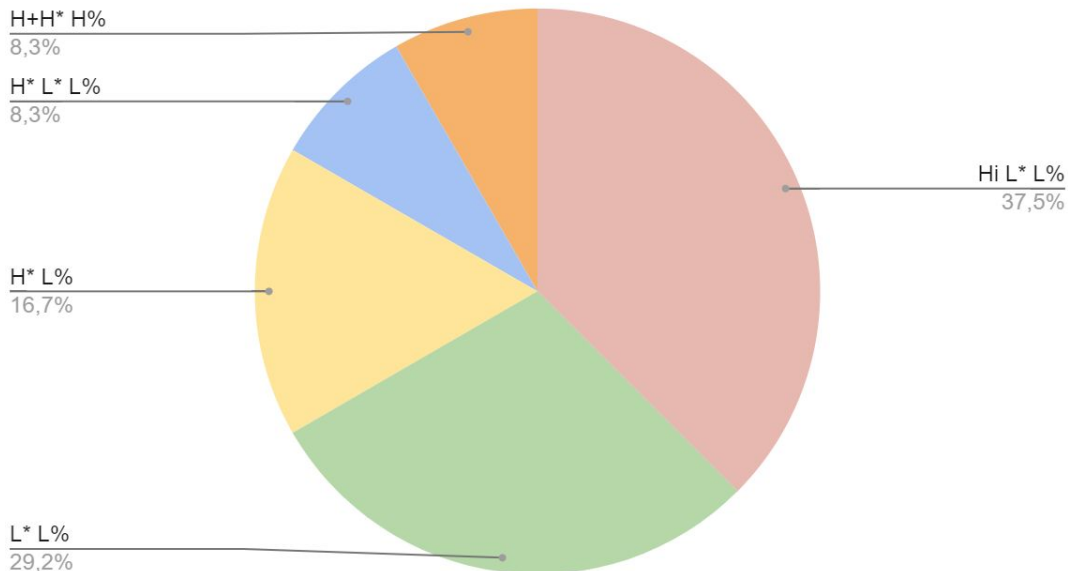
- ✓ Early H* on the syllable preceding the last one.
- ✓ Observed in the longest associates, with 4 syllables.

II. Production Experiment

2.3 F_ToBI Prosodic Analysis : results

2) Associate at the end of the sentence, as an adjunct (24 sentences)

Final-position Associates : Distribution of intonation patterns



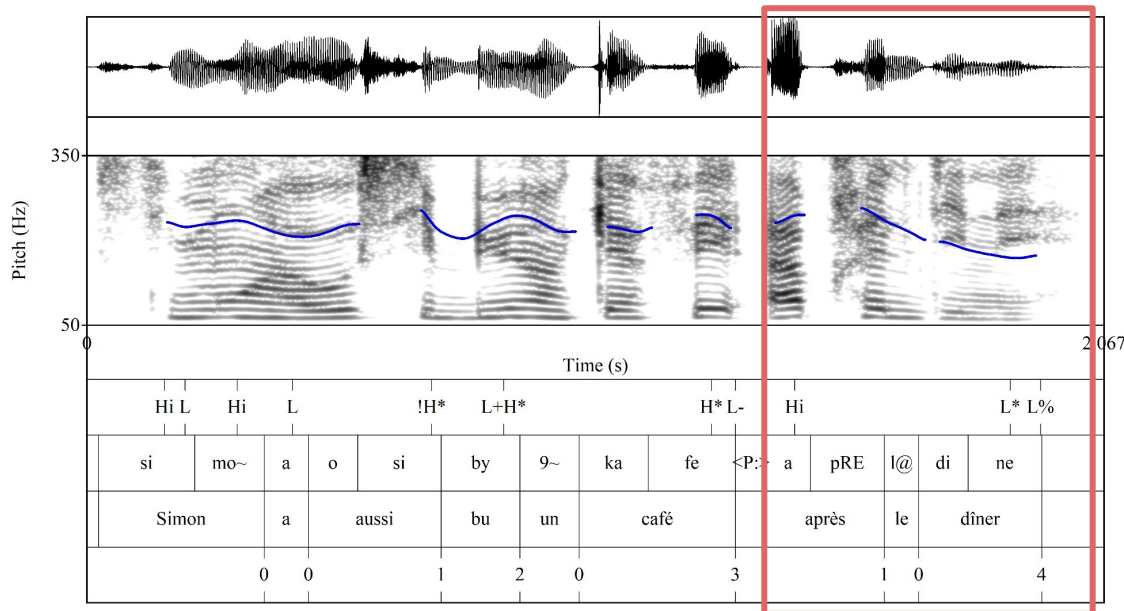
Final position:

Hugo a aussi présenté sa femme **à Manon**.

II. Production Experiment

2.3 F_ToBI Prosodic Analysis : results

2) Associate at the end of the sentence, as an adjunct (24 sentences)



◆ The most frequent intonation pattern

Hi L* L%

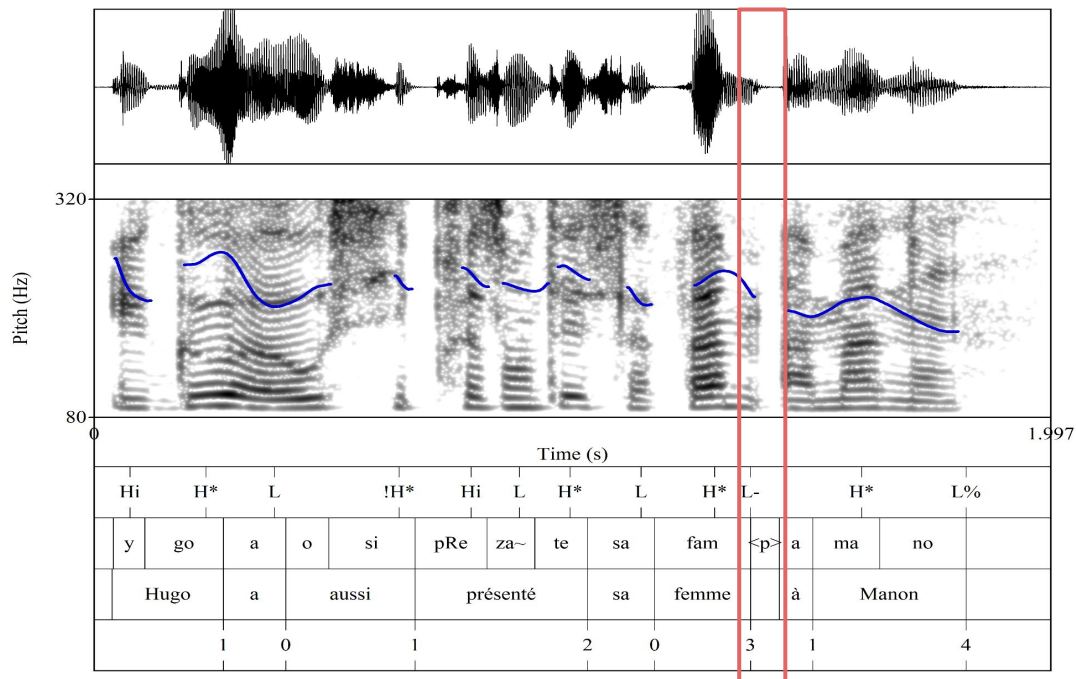
(37.5 % of the corpus)

Typical narrow focus pattern illustrated in F_ToBI system. (Delais-Roussarie et al. 2015)

II. Production Experiment

2.3 F_ToBI Prosodic Analysis : results

2) Associate at the end of the sentence, as an adjunct (24 sentences)



- ❖ **Break before associate**
- ✓ No *enchaînement* before the associate.
- ✓ Observed in 3 cases, the patterns after it are: **Hi L* L%**, **L* L%**, **H* L%**.

II. Production Experiment

2.4 Main Results

- ❖ The associate is marked at the right boundary.
(Cf. Beyssade et al., 2008)
- ❖ Despite variability, frequent Intonation patterns emerged
 - ✓ Middle-position: H* L-
 - ✓ Final-position: Hi L* L % (more variation)
- ❖ The additive adverb *aussi* beared a high accent (H* in 79.2%).
(Cf. Benazzo & Patin, 2017)
- ❖ **Does the larger variability of the final-position patterns implicate more difficulty in associating the focus ?**

III. Perception Experiment

A pilot one !

Research questions

- ❖ Can French monolingual native speakers auditorily disambiguate the associate of *aussi* ?
- ❖ Is their perception performance different depending on the position of the associate ?

III. Perception Experiment

3.1 Design of experiment

- ❖ 8 stimuli selected + 16 fillers selected from the production corpus.
- ❖ An inter-subject crossed factors design.

Speaker	Middle-position	Final-position
1	Hugo a aussi présenté sa femme à Manon.	Julia a aussi perdu son portable à Lyon.
2	Manon a aussi fait le ménage hier matin.	Emma a aussi révisé ses exercices la veille.
3	Hugo a aussi présenté sa femme à Manon.	Julia a aussi perdu son portable à Lyon.
4	Manon a aussi fait le ménage hier matin.	Emma a aussi révisé ses exercices hier matin.

III. Perception Experiment

3.2 Experimental setting & Participants

Interface of Experiment

- ❖ PsychoPy software version 2023.1.
- ❖ 24 trials combining 8 items + 16 distractors in a random order.

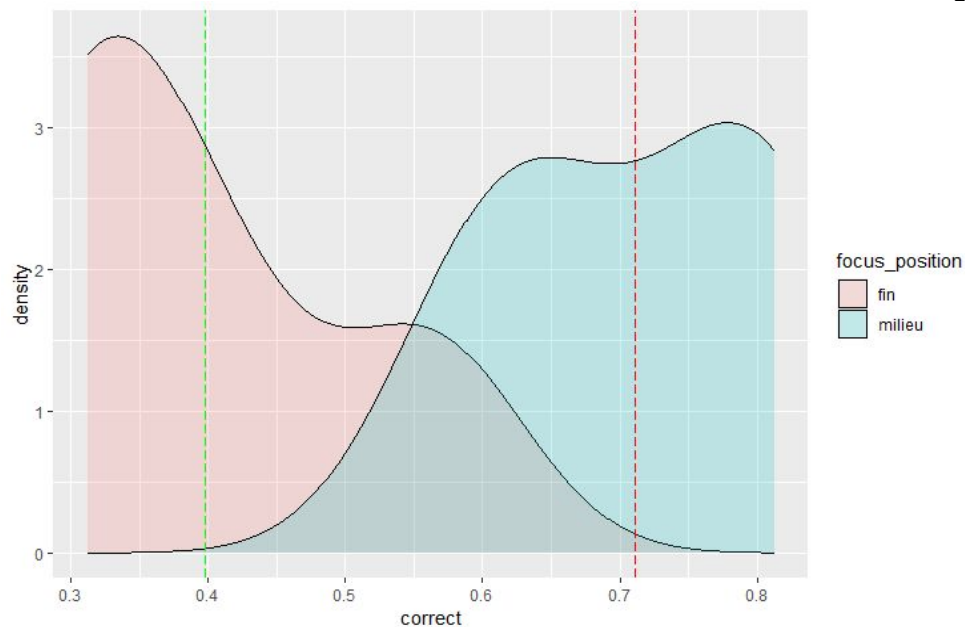


Participants

- ❖ 32 French monolingual native speakers (23 females, 9 males)
- ❖ Aged 20 to 56 (mean: 34.44, SD: 11.03).
- ❖ All participants speak at least one L2 - English.
- ❖ All reside in Paris region.

III. Perception Experiment

3.3 Results



- ^ Significantly better performance for sentences with **middle-position associate** (mean of correct proportion ≈ 0.71) compared to sentences with **final-position associate** (mean of CP ≈ 0.39).

$t \approx 3.9867$, $df \approx 5.8966$, $p \approx 0.00749 < 0.01^{**}$, Welch's t-test analysis.

IV. Conclusions & Perspectives

IV. Conclusions and perspectives

❖ Conclusions

- ✓ Prosody is used to mark additive focus, and helps in disambiguating ambiguous sentences.
- ✓ Prosodic cues have several similarities to those on restrictive focus *seulement*.
- ✓ Difficulties associating in final position in both production and perception.

IV. Conclusions and perspectives

❖ Perspectives

- ✓ Statistical analysis for production data using Generalized Additive Mixed Model (GAMM) :
 - Reclassify the intonation patterns.
- ✓ A more comprehensive perception experiment :
 - Different performance for different intonation patterns ?
- ✓ Eye-tracking experiment :
 - Final-position associates implicate less naturalness in production & perception ? Phonological or language processing reasons ?

Acknowledgements

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