The Prosody of French Interrogatives

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The prosody of interrogatives in French[1]

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Résumé

Notre but est de montrer que la modélisation de l'intonation que nous avons proposée pour les déclaratives peut être étendue à l'intonation des interrogatives. Nous nous concentrons dans cet exposé sur la localisation du contour nucléaire (que nous postulons pour rendre compte de la partie contrastive du profil mélodique). Nous montrons qu'elle dépend de la partition du contenu sémantique. Notre approche, qui maximise les ressemblances entre déclaratives et interrogatives, permet de mettre à jour une différence : l'ancrage privilégie l'accent mélodique (pitch accent) – qui marque la frontière droite de la zone nucléaire – dans les déclaratives, alors qu'il privilégie le ton syntagmatique – qui marque la frontière gauche de la zone nucléaire – dans les interrogatives.

1. Introduction

The object of the talk is the intonation of interrogatives in French. We use *interrogative* to refer to a clause type. We define clause types independently of illocutionary forces or actual speech act values in context (Gazdar 1981, Ginzburg & Sag 2000, Beyssade & Marandin 2006). Clause types are defined by a type of content : proposition for declaratives, propositional abstract for interrogatives (etc). In this talk we restrict ourselves to *wh*-interrogatives and polar interrogatives, prototypical instances of which are given in (1).

[1] This study is part of the project « Contours nucléaires et illocution » supported by Pro-Gram (http://pro-gram.linguist.jussieu.fr/).

(1) a. Wh-interrogative : *A qui tu as parlé ?*
Whom did you talk to ?
b. Polar interrogative i. *Marie a-t-elle parlé à Paul ?*
ii. *Est-ce que Marie a parlé à Paul ?*
Did Marie talk to Paul ?

Our aim is to show that the theory we proposed for declaratives (Beyssade et al. 2004a among others) readily extends to interrogatives. In a nutshell :

(2) a. The significant part of the melodic profile can be analyzed with a restricted inventory of nuclear contours.
b. Nuclear contours are not markers of illocutionary forces or speech acts.
c. The anchoring of nuclear contours is sensitive to a partition of the content conveyed by utterances. In assertoric declaratives, it is sensitive to the partition « Information Focus / Background ».

Here, we present the first results of our analysis of interrogatives : it is based on the analysis of interrogatives in context (approximatively 300 tokens) carried out collectively following a practice usual in Conversation Analysis.[2] Our corpus is made of discourses belonging to different genres : media speech, everyday conversations and playlets recorded in a soundproof room.[3]

2. Background

2.1. Melodic profile

The melodic profile associated with utterances (Dell 1984, among others) involves three zones, of which only the first one is compulsory:

– a zone, we call *the nuclear domain* : it features variations in pitch which are contrastive (hence meaningful). Its length does not exceed three accentual phrases (AP). We account for the intonational variation in the nuclear domain with the notion of *nuclear contour*.
– A pre-nuclear zone, which features variations in pitch which are not contrastive. They are analyzed with the notion of continuative movements in the French tradition. In particular, the choice

[2] The group also includes Cristel Portes, Hiyon Yoo and Claire Corvisier.

[3] We are using the following corpora : ESTER Corpus (radio news / talk shows), MdF Corpus (phone calls, corpus for Conversation Analysis), CP Corpus (recorded texts for laboratory phonology experiment), ACI Corpus (elicided utterances recorded in psycho-linguistic experiments), MapTask corpus (Bessac *et al.* 1995).

between rises and falls is not contrastive in this zone (Martin 1975).

– A post-nuclear zone. Its main characteristics is that it involves a change in register relatively to the nuclear zone, either in the direction of F0 or in its expansion (Touati 1987).

2.2. Nuclear contours

Nuclear contours account for the contrastive part of the melodic profile (formally and semantically). We propose that there are four nuclear contours in French (Beyssade *et al*. 2004b, Marandin 2006 and Delais-Roussarie 2005).[4] Formally, they are defined as a sequence of three tones as in (3), which yields the inventory for French in (4). In (4), the value of the boundary tone (T%) is left unspecified since we focus on the unit made of the phrasal and the pitch accent in this paper.

(3) T- T* (T%)

(4) H- L* (T%)
L- H* (T%)
L- HL* (T%)
L- H+L* (T%)

As for the meaning of the unit made of the phrasal and the pitch accent, we propose that it is dialogical-epistemic (Beyssade & Marandin 2007). It pertains to how Speaker makes public how she sees the impact of her turn on the ongoing conversation. By using a falling contour, Speaker indicates that she expects her turn to be taken up smoothly by Addressee, whereas by using a non falling contour she indicates that her turn may trigger some tuning from herself or from Addressee.

2.3. Partition of content

Information structure theories assume that the content of utterances is partitioned into two parts : a function and an argument. For example, the analysis in (5b) enables us to capture the distinguished role played by the NP *Marie* in (5a) when it is used as an answer to the question « who is coming ? » : in this case, it contributes the XP which resolves the question and is usually considered the information focus.

(5) a. Marie arrive
b. <λx. Arriver (x), M>

The interpretation of the partition in (5b) in terms of old/new information is highly controversial (Lambrecht 1994, Beyssade et al.

[4] This inventory is compatible with Post (2000) (Delais-Roussarie 2005 ; Marandin 2006).

2004a). Here, we assume that it reflects a partition into what is currently under discussion and what is specifically at stake in the utterance. [5]

The partition (5b) holds for declaratives. As Krifka (2001) shows, the content of interrogatives, which is not propositional, should also be partitioned. It is partitioned into a function and a restriction. The content of *wh*-interrogatives is readily analyzed along these lines : the *wh*-expression contributes the restriction. For example, the *wh*-expression *who* (vs *what*) contributes the restriction that the argument resolving the question in (6a) must be Human (*vs* non Human).

(6) a. Who did Mary see ?
b. <λx. See (x, M), Human>

Krifka proposes the same analysis for polar interrogatives : the resolution of the question, which is conveyed by polar interrogatives, is restricted to two answers (positive and negative) which correspond to the positive or negative proposition obtained when the choice of polarity is fixed.

(7) a. Did Mary read *Die Kinder der Finsternis* ?
b. <λf.[f (Read (KF, M))], {λp.¬p, λp.p}>

In fact, Krifka's analysis is only adequate for one type of polar questions, viz. questions whose content is not itself partitioned and, accordingly, whose entire content is questioned. There are polar questions in which only part of the content is questioned. We call the former *total* and the latter *partial*. An instance of partial question is given in (8a) : (8a) is partial when Speaker's question specifically bears on the invitee, which can be paraphrased as « is it Mary that John invited yesterday? given that John invited somebody yesterday ».

(8) a. Did John invite Mary yesterday ?
b. <λf. f < λx. Invite (J, x, yesterday), M>, {λp.p, λp.¬p} >

3. Hypothesis

The descriptive generalization in (9) is commonly accepted among people working on Intonation in French (under various guises) :

(9) The XP which contributes the information focus is the exponent of the part of the melodic profile that features contrastive variations in pitch.

In our approach :

(10) The nuclear contour gets anchored at the right edge of the XP contributing the argument in the partition of content (5b), i.e. the information focus in assertoric declaratives.

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[5] We take it that the notion of activated propositions (Dryer 1996, Jacobs 2004) is the relevant notion to analyze phenomena commonly analyzed as belonging to information structure.

We showed that this is so whatever the contour or the illocutionary value may be. For example, in confirmation seeking or verifying declaratives, the focus of confirmation or verification attracts the nuclear contour as the information focus does in assertoric declaratives.

Hence, our claim concerning the interrogatives is:

(11) The partition of content should account for the anchoring of the nuclear contour (be it falling or non falling).

4. Data survey

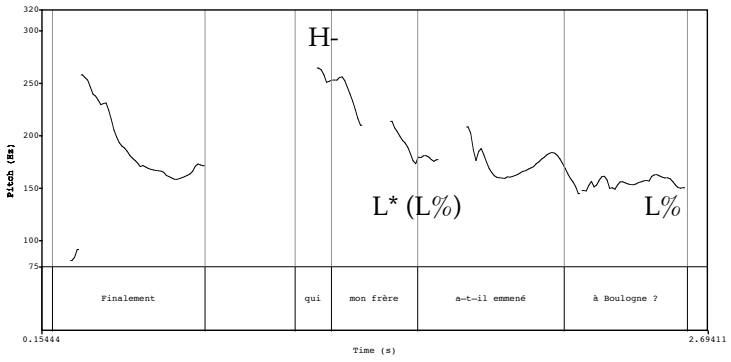
The striking fact concerning the corpus we have analyzed is that less than 10 % of the interrogatives feature a non falling contour. Notice that this is expected from our perspective : Speaker uses a non falling contour in order to indicate the possibility of a disagreement with Addressee which is usually a feature of polemic situations. Such situations are not frequent at all in the corpora we are studying.

4.1. Wh-*interrogatives*

Our survey corroborates the idea that the nuclear contour is attracted by the part which contributes the restriction. When the contour is falling, the *wh*-expression gets the phrasal H-, while the L* pitch accent goes on the primary stressed syllable of one of the next three APs. This is illustrated in (12) and (13) below :

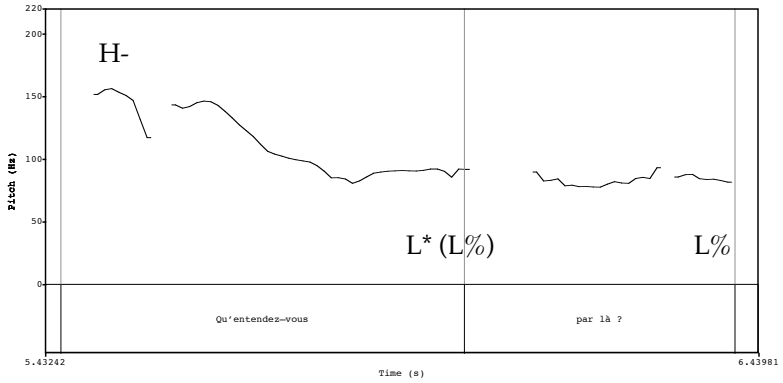
(12) *Finalement, qui mon frère a-t-il emmené à Boulogne ?* (CP Corpus)

Finalement	qui mon frère	a-t-il emmené	à Boulogne
	H- L* (L%)		L%



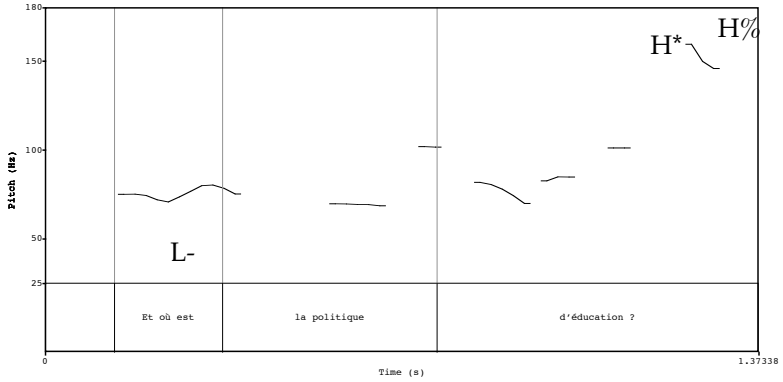
(13) *Qu'entendez-vous par là ?* (ESTER Corpus)

Qu'entendez-vous	par là.
H- L* (L%)	L%

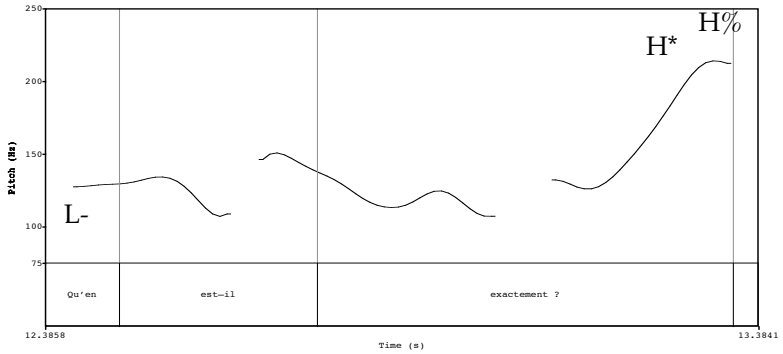


Conversely, when the contour is rising, the *wh*-expression gets the phrasal L-. This is illustrated in (14) and (15) below :

(14) *Et où est la politique d'éducation ?* (ESTER Corpus)
Et où est la politique d'éducation
L- H* H%



(15) *Qu'en est-il exactement ?* (ESTER Corpus)
Qu'en est-il exactement
L- H* H%



4.2. Polar interrogatives

For polar interrogatives, two situations arise, which correspond to the contrast between partial and total questions. In partial questions, the nuclear contour is attracted by the XP contributing the argument in the partition of content (see *Mary* in (8) above). As for total questions, the situation is analogous to that of all focus declaratives : one part of the content does not correspond to any overt XP, viz. the function in all focus declaratives (e. g. <λp.p, Arriver (M)> when (5a) is used as an answer to *what's happening* ?) and the restriction in total questions (see {λp.¬p, λp.p} in (7) above).

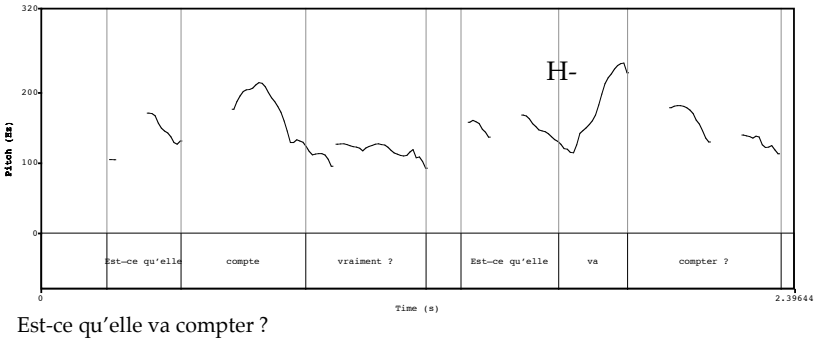
4.2.1. Partial questions

In partial questions, the nuclear contour is attracted by the XP that is specifically questioned – analyzed as the argument in the body of the function. In (16), the phrasal H- of the falling nuclear contour is realized at the left edge of the VP : in the first sentence the H- is on *compte*, while it is on *va* in the second.

(16) *Est-ce qu'elle compte vraiment ? Est-ce qu'elle va compter ?* (ESTER Corpus)

L% L* L%

Est-ce qu'elle compte vraiment ?



Est-ce qu'elle va compter ?

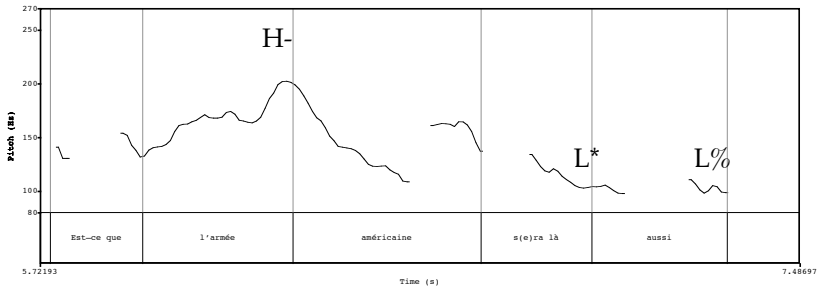
H- L* L% H- L* L%

In (17), the nuclear contour is associated with the NP *l'armée américaine*. The H- phrasal accent is anchored at the left edge of the AP (l'armée américaine) on the syllable [me], the L* being associated with the syllable [la] of *là.* [6]

(17) *Est-ce que l'armée américaine sera là aussi ?* (ESTER Corpus)

Est-ce que l'armée américaine sera là aussi ?

H- h L* (L%) L%



4.2.2. Total questions

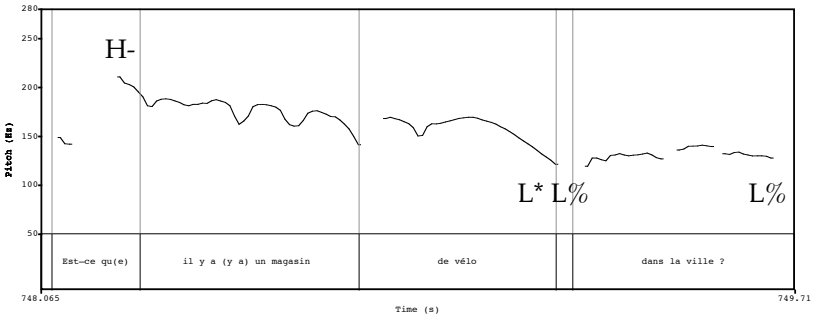
The generalization we get is that in total questions, the nuclear contour gets attracted by the marker *est-ce que* or by the head verb bearing the subject-clitic form affixed to it. This is a striking difference with what is observed in declaratives : in interrogatives, the left edge of the focus domain is relevant for the association of the nuclear

[6] We note « h » a rise that we analyze as a primary metrical accent.

contour, whereas the right edge is in declaratives. We come back to that in 4.3.

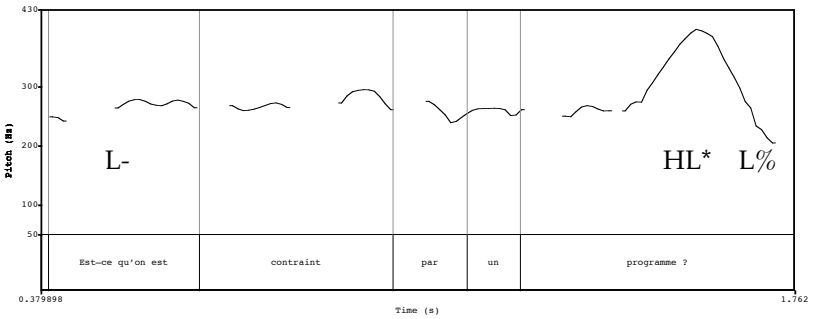
In (18), the H- phrasal accent is anchored at (*est-ce*) *que*, while the L* pitch accent is anchored at the rightmost metrical syllable of the AP *(de vélo).*

(18) *Est-ce qu'il y a un magasin de vélo dans la ville* ? (MapTask Corpus)
Est-ce qu'il y a un magasin de vélo dans la ville ?
H- L* L% L%



The same analysis obtains with rising contours. In (19), the phrasal L- is realized on est-(ce que), while the HL* is anchored at the last metrical syllable of the AP *(par un programme).*

(19) *Est-ce qu'on est contraint par un programme?* (MdF Corpus)
Est-ce qu'on est contraint par un programme ?
L- h HL* L%



4.3. Contrast between declaratives and interrogatives

We draw two generalizations from our survey. First, (11) is supported by data. When the partition of content involves two parts which correspond to overt XPs, the non functional part attracts the nuclear

contour : the restriction in *wh*-interrogatives and the argument in partial question polar interrogatives.

When the partition of content involves a part which does not correspond to overt XPs, which is the case in total question polar interrogatives as well as in all-focus or total confirmation seeking or total verifying declaratives, the nuclear contour goes to the lexicalized part. Here lies the difference between the two clause types : it goes to the argument in declaratives, to the function in interrogatives. Moreover, and this is our second generalization :

(20) a. In declaratives, the association of the nuclear contour exploits the pitch accent : it is anchored at the prominent position of the rightmost AP in the nuclear domain.

b. On the other hand, in interrogatives, the association of the nuclear contour exploits the phrasal accent : it is realized within the leftmost AP in the nuclear domain.

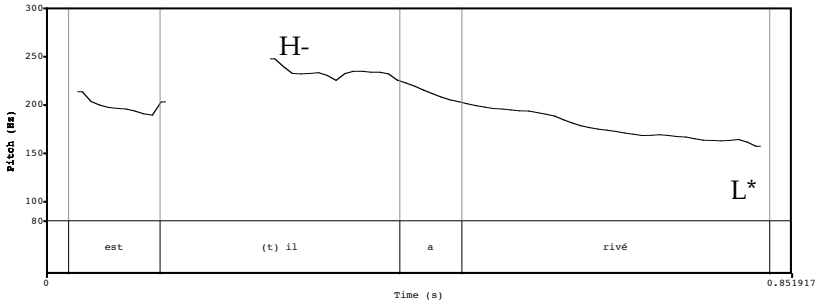
The generalization in (20) makes a prediction that can be checked empirically. In interrogatives, the anchoring of the phrasal H- or L- is compulsory at the left edge of the nuclear domain, while the phrasal tone may be truncated in declaratives. When it is truncated, only the pitch accent is realized at the right edge of the nuclear domain. This is illustrated in (21) – a falling interrogative – and (22) – a falling declarative.

The phrasal H- cannot be left unanchored in interrogatives and must be realized as in (21) : it is realized on the syllable [til], the maximum of F0 occurring at the beginning of the syllable nucleus.

(21) *Est-il arrivé ?*

Est-il arrivé ?

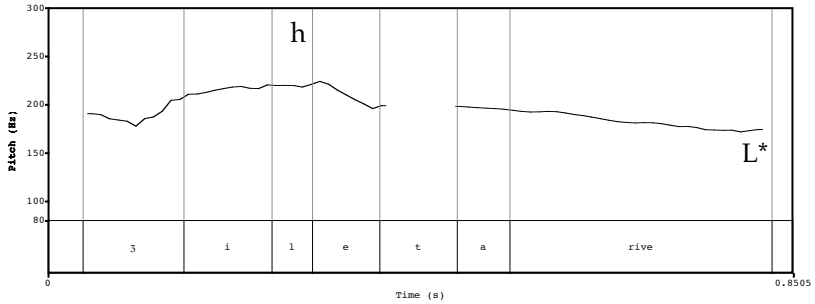
H- L* (T%)



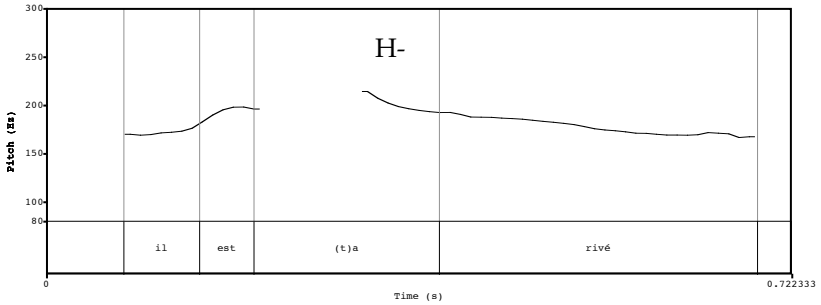
On the contrary, it can be left out in declaratives. This is the case in (22a). The rising movement on *Gilles* is realized on the second half of the nucleus [i] and coincides with a primary metrical accent. Of

course, it can be realized, as is illustrated in (22b) where the H- phrasal target is realized on the initial syllable of *arrivé*.

(22) a. *Gilles est arrivé.*
Gilles est arrivé.
h (H-) L* (T%)



(22) b. *Il est arrivé.*
Il est arrivé.
H- L* (T%)



We are currently launching experimental studies to compare the tonal alignement of the phrasal H- and L- in both interrogatives and declaratives in order to check our claim.

5. Conclusion

Our survey confirms the parallelism between declaratives and interrogatives concerning the localization of nuclear contours in utterances : it involves the same sensitivity to the partition of semantic content in both types. Moreover, it gives an unexpected result : the anchoring of nuclear contours exploits the pitch accent in declaratives, which gives prominence to the right edge of the nuclear domain, whereas it exploits the phrasal tone in interrogatives, which gives

prominence to the left edge – identified with the lexical mark of the clause type.

If our observations and analyses are correct, this is a crucial fact to characterize the relationship between intonation and illocution : the clause type gives rise to a contrast independently of the form of the contour (falling *vs* non falling) and of the illocutionary or speech act value of the utterance.

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