

Prosody refers to semantic factors: evidence from French wh-words

Lena Baunaz & Cédric Patin

lena.baunaz@gmail.com, cedric.patin@gmail.com

University of Geneva, LLF (Paris 7/CNRS UMR 7110)

LLF (Paris 7/CNRS UMR 7110)

Abstract :

Based on Baunaz (2011), we distinguish among French wh-words and claim that they are three-way ambiguous: they can involve partitivity, specificity (both are presuppositional) and non-presupposition (where non-presuppositional means not-specific/not-partitive). In addition to semantic differences, specificity and partitivity are argued to involve different prosody with wh-phrases in-situ. Building on an experimental study, we show that the prosody of wh-words supports this analysis by constraining their interpretation: wh-words are exponents of an accent when they involve specificity-based presupposition, i.e., prosody may mark different discourse status in colloquial French. This accent is not found on partitivity-based presuppositional French wh-words.

1. Introduction

This work aims at checking Baunaz's (2005), (2011) claim about the importance of prosody on the interpretation of wh phrases in-situ in French via an experiment. In order to do this, we hypothesize that the existential presupposition carried by wh-phrases has prosodic correlates. Our study is extended to wh-phrases ex-situ.

Thanks to a production experiment, we argue that prosody can mark different discourse status in colloquial French. More precisely, wh-words (e.g., *qui* 'who', *quoi* 'what') are bear an accent when they involve specificity-based presupposition only. This accent is not found on non-specific wh-words.

This paper is organized as follows: the syntactic properties of wh-phrases in-situ are given in section 2, where we claim that the grammaticality judgments of these constructions depend on the discursive context in which these sentences appear. The semantic properties of wh-words are highlighted in section 3, where we distinguish between three types of wh-words: specific, partitive and non-presuppositional. In section 4, we describe and discuss the main (prosodic) results obtained in our production experiment. Section 5 is our conclusion.

2. General Properties

(1) exemplifies the four most frequent strategies that French uses to for constituent questions (terminology from Boeckx (1999), see also Cheng and Rooryck (2000)):¹

¹ The questions in (1) are not echo-questions, in that they are seeking for information. Echo-questions show different pragmatic, semantic and prosodic properties from the type of questions we discuss in this paper. They

- | | | | |
|-----|----|---|---------------------|
| (1) | a. | Qui est-ce que tu as invité?
who est-ce que you have invited
'who did you invite ?' | Reinforced fronting |
| | b. | Qui as-tu invité ?
Who have you invited
'who did you invite ?' | Fronting |
| | c. | C'est qui que t'as invité ?
It is who that you have invited
'who is it that you invite ?' | Clefting |
| | d. | T'as invité qui?
you have invited whom
'who did you invite ?' | in-situ |

In 'written' and standard formal Spoken French, wh-fronting is never an option: it is compulsory. In spoken French, both strategies are available. Fronting and clefting are possible in both registers. Reinforced fronting belongs to more formal registers. Our study focuses on the (reinforced) fronting and in-situ strategies. For space reasons, only wh-phrases in-situ are exemplified. Yet, our claim extends to wh-phrases ex-situ.

In the literature, French wh-phrases in-situ are said to be syntactically constrained to the following contexts (Chang (1997), Boeckx (1999), (2000), Cheng & Rooryck (2000), Boskovic (2000), Mathieu (2002)): (i) they are restricted to root clauses; (ii) they cannot be moved out of infinitival CP-complements; (iii) depending on the author, they can occur with modals; (iv) they are blocked in negative islands; (v) they are trapped in scope islands (or at best they take narrowest scope, see Mathieu (2002)); semantically, (vi) they must involve existential presupposition. Conversely, Starke (2001), Baunaz (2005), (2011) and Adli (2006) observe that in informal spoken French, wh-phrases in-situ are productively used (i) in embedded clauses (8); (ii) with modals, (3)-(4); (iii) in neg-islands, (5); (iv) with Quantifiers of various types (6), (7). Note that speakers judged the sentences in (2)-(7) as **degraded** compared to their fronted counterparts.

- | | | | |
|-----|----|---|------------------------|
| (2) | a. | Tu crois que Pascal a invité qui/ quelle fille ?
You believe that P. has invited whom/which girl | |
| | b. | Tu crois qu'il marche comment/où?
You believe that he walks how/where | |
| | c. | Marc a décidé de voir qui?
Marc has decided C to see whom | |
| (3) | a. | Il peut rencontrer qui?
He can meet who | (Adli 2006: 16, (13)) |
| | b. | Il peut/doit aller où ?
he can/must go where | (Adli 2006 : 16, (14)) |

are confirmation, or repetition-seeking questions 'or "any question said in immediate response to an utterance which is surprising, deserving repetition, or which was in part not heard, or thought not to have been heard correctly," "a request for repetition, or confirmation, or a showing of politeness, or concern, or an expression of surprise or disbelief, or the like,"' (Boeckx (1999:76)). Echo wh-phrases involve specificity (see Starke 2001) and heavy stress (Mathieu 2002) or a 'high + rising echo intonation' (Boeckx (1999: 76), see also Mathieu (2002)).

- (4) Pascal peut/doit appeler qui/quelle fille?
Pascal can/must call who/which girl
- (5) Pascal n'a pas rencontré qui/quelle fille ?
He NE has not met whom / which girl
- (6) a. Plusieurs personnes ont reconnu qui?
Several persons have recognized who (Adli 2006:16, (15))
b. Plusieurs chênes ont été coupés où/quand ?
Several oaks have been cut where/when (Adli 2006:16, (16))
- (7) ? T'achètes toujours quoi en arrivant?
You buy always what arriving
'What do you always buy when you arrive?'

Baunaz (2005), (2011) argues that while (2)-(7) are acceptable for most speakers consulted, the acceptable status of these constructions depend on i) which discursive contexts they appear in, ii) the type of existential presupposition they carry and iii) the intonation they receive. The author shows that lexical forms like *qui* 'who' are potentially ambiguous between (at least) three interpretations: specific, *partitive* and *non-presuppositional* and that intonation help disambiguating between them. Our present study aims at checking these claims, from the prosodic side: it shows that prosody plays an important role in disambiguating specific from non-specific noun phrases.² Section 3 is devoted to the presentation of these notions.

3. French wh-phrases: interpretation

There is a long-standing tradition among linguists that distinguishes between French wh-phrases in-situ and French wh-phrases ex-situ in terms of existential presupposition. Chang (1997), Boeckx (1999), Cheng and Rooryck (2000) (a.o) argue that wh-phrases in-situ must be associated with a 'strongly presupposed context'. Wh-phrases ex-situ can also appear in such a context, yet they can optionally appear in *out-of-the-blue* contexts, i.e., contexts which do not trigger any existential presupposition. The test of Negation aims as a diagnosis to discriminate presuppositional vs. non-presuppositional contexts. In presuppositional contexts, *rien* 'nothing' is not a possible answer to a presuppositional wh-phrase, (8)-(9), (Boeckx (1999)). Conversely it is possible to answer with a negative word to a non-presuppositional wh-phrase (10):³

- (8) A: Jean a acheté quoi ?
John has bought what
'What has Jean bought?'
- B: Un livre / une voiture / # rien (Boeckx (1999a :69, (3)))
Un livre / a car / nothing

² Baunaz (2005), (2010) argue that these distinctions are syntactically grounded. The reader is referred to her work for further details.

³ '#' marks that the answer goes against A's presuppositions.

(9) A: C'est quoi que Jean a acheté ?
 it is what that J. has bought
 'What has Jean bought?'

B: Un livre /une voiture/ # **rien**...
 Un livre / a car / nothing

(10) A: Qu' a acheté Jean ?
 WH.cl has bought Jean
 'What has Jean bought?'

B : Un livre /une voiture/ **rien**... (Boeckx (1999 : 69, (2)))
 Un livre / a car / nothing

Wh-phrases in-situ behave like wh-clefts: they cannot be used *out-of-the blue* and a strong context where possible referents for the answer must be presupposed. Based on a more fine-grained semantic distinction among noun phrases, Baunaz (2011) show that the observations made above about the semantics of wh-phrases in-situ in French needs to be refined.

Because they can appear under negation in spoken French, Starke (2001) distinguishes between two types of wh-phrases in-situ which carry existential presupposition (where *presupposed* means already introduced in the discourse). Presupposed nouns phrases can be interpreted depending on two discursive contexts: *range* and *specificity*. Following Baunaz (2011), we call *range* noun phrases *partitive* noun phrases. Both specific and partitive wh-phrases require contextually specified domains (as opposed to *out-of-the blue* contexts). These notions are defined as follows. As will become clear, partitivity and specificity will also be defined relative to the type of answer possible.

A partitive wh-phrase is an object that has been previously mentioned together with other objects (i.e., there is a set of available alternatives), each of which is a possible referent of the answer to the wh-phrase. In (11), Eva has no clue about what her colleagues will decide to have for dinner. Her colleague will have to decide among the three possible menus on the list. Eva's question asks for the identification of a member from the set of available alternatives.

(11) *Eva organizes a Christmas party in the department. She suggests three menus: vegetarian, turkey, and salmon. She asks one of her colleagues:*

Eva: et toi, tu préfères quoi dans la liste?
 and you, you prefer what in the list?

In the partitive context in (11), no presupposition that there is a particular antecedent available in the discourse (such that Eva's colleague believes that this referent is the right one) is available. As such, the answer can potentially be any of the pre-defined members of the list, i.e., it can be a disjunctive. Note that it cannot be *rien* 'nothing', since it would go against the presupposition that there is an antecedent to *quoi*, in (11).

Conversely, a specific wh-phrase doesn't entail set relations. *Specificity* is triggered when there is a familiar individual that the interlocutor has in mind as referent (antecedent) for the wh-word. A constituent question involving specificity asks for the identity of that entity: a disjunctive answer is then not possible, (12) (adapted from Adli (2006)):

- (12) During a trial, witnesses and defendants are confronted. One of the defendants has been accused by all the witnesses. The journalist asks:

J : et les témoins ont reconnu **qui** dans le box des accusés ?
and the witnesses have recognized whom in the box of the defendants
'and whom did the witnesses recognize in the defendants' box ?'

In (12), the journalist asks for the identification of a familiar individual, i.e., which is the person that all the witnesses recognized. The (only) felicitous answer can be the specific antecedent that all the witnesses recognized, i.e., it is non-disjunctive. As such, a negative statement (or phrase) couldn't answer the journalist's question, since it would go against the presupposition that there is a specific antecedent for the wh-phrase.

A third type of wh-phrase that has been reported impossible in-situ (Boeckx (1999), a.o): non-presuppositional wh-phrases in-situ. We argue that this is incorrect and we claim that non-presuppositional (i.e., neither specific, nor partitive) wh-phrases typically appear out-of-the-blue, as in (13):

- (13) Fred and H el ene are good friends, and they chat on the phone about the last gossips around. After a while, Fred changes topics and asks :

Fred : **tu vois qui vendredi soir ?**
You see who Friday night
'Who do you meet next Friday night'

Using the test of Negation as a diagnosis for presupposition (see above), we claim that not all wh-phrases in-situ must involve a strong context where possible referents for the answer must be presupposed: wh-phrases in-situ do not necessary involve existential presupposition, (14), as opposed to partitive and specific wh-phrases, (15)-(16):

- (14) A. t'as invit e qui ? (Out-of-the-blue)

you have invited who ?
'who did you invite ?'

B : Personne / Marie
Nothing / Marie

- (15) A: Fred a invit e qui (de la liste)? (partitive)

Fred has invited who (from the list)
'Who has Fred invited?'

B: Marie /une fille/* **personne**...
Marie / a girl / nobody

- (16) A: Fred a invit e qui ? (specific)

Fred has invited who
'Who has Fred invited?'

B: Marie /une fille/* **personne**...
Marie / a girl / nobody

On the basis of (14), we claim that some questions with *wh*-phrases in-situ can be answered by *rien*. These questions do not commit to the existence of any referent for the *wh*-phrase. As such, the positive polarity item *quelqu'un* ‘someone’ would be a perfect answer to the question in (14), as it does not trigger any commitment of existence. Indeed, the speaker does not know whether Fred invited anybody in (14).⁴ The variety of possible answers suggests that non-presuppositional *wh*-phrases in-situ involve alternatives, but not within a finite set (as partitive do), but outside of it.

To sum up, a lexical form like *qui*, is then (potentially) three-way ambiguous: it can be non-presuppositional, or presuppositional, involving either partitivity or specificity. The domain of non-presuppositional *wh*-phrases is non-finite. As such, it opens up on an indefinite set of alternatives. No familiar individual is ever identified. Conversely partitive *wh*-phrases involve a closed, presupposed set of alternatives. One of the alternatives will be chosen as the antecedent for the *wh*-phrase, yet, it is not presupposed. Finally, the domain of a specific *wh*-phrase is finite, but doesn’t involve sets of alternatives. It narrows down to a familiar individual the interlocutor has in mind as referent.

Up to this point, we have focalized on the relationships between the distribution of *wh*-words and their interpretation. In the next section, we show that prosody plays a crucial role in the interpretation of *wh*-words. Before turning to our study, we would like to present Baunaz’s works, on which our experiment heavily relies.

Baunaz (2005), (2011) aim at understanding whether or not interpretation is reflected within the syntactic component. She shows that the syntactic behaviors of French *wh*-phrases in-situ depends on the presupposition (or its absence) triggered. In addition, she observes that prosodic correlates can be associated with these different interpretations. As such, scope/lexical ambiguities are only apparent: they depend on the utterance context and they can be (partially) resolved via prosodic cues. Under this approach, yet, intonation is taken as (perceptive) diagnostics discriminating specificity from partitivity and non-presupposition. At this point, the issue that arises is that of the role played by prosody in this system.

In order to check i) if a particular prosody is associated with the three *wh*-phrases identified above, and ii) if prosodic parameters vary depending on the position of the *wh*-phrase (‘in-situ’ / ‘ex-situ’) (both have the same pragmatic restrictions cf. Baunaz (2011)), we built an experiment. The aim was to check whether the different contours identified by Baunaz (2005) existed, and if they do, to evaluate whether they correspond to each of the relevant constructions.

In section 4, we show that the semantic distinction proposed in this article, namely between two types of existential presuppositions with *wh*-words in-situ, must be maintained, and prosody supports this claim. Indeed *wh*-phrases in- and ex-situ can get an accent when they carry a specific presupposition. This accent is found neither with partitive *wh*-phrases in- and ex-situ, nor with non-presuppositional *wh*-phrase in either position.

4. French *wh*-phrases: prosody

4.1. The experiment

The experiment took place on December 16, 2008 at the Institut de Linguistique et de Phonetique Générales et Appliquées (Université Paris 3), in Paris. Seven speakers were

⁴ We owe Andreas Haida (p.c) for this argument.

recorded, and six were retained⁵: two males and six females, the youngest being 23 years old and the oldest 31 years old. All of them were graduate students in Linguistics at Université Paris 3. The participants were recorded in an anechoic chamber with a Marantz PMD670. The average duration of the test was thirty minutes. 60% of the experiment consisted of distractors (experiments on non-restrictive relatives, *verum focus*, etc.), which will not be discussed here.

As for the *wh* part of the experiment, the speakers were required to read interrogative sentences (e.g. 17b) in dialogues, such as (17), which were written on cardboards. The experimenters read the context outloud.

- (17) a. Tout le monde fait la queue à la cafétéria. Plusieurs plats sont proposés: steak, poulet, ragoût. Le cuisinier demande à Léa, qui hésite depuis trop longtemps à son goût
Everybody is in line at the cafeteria. Several dishes are suggested: steak, chicken, stew. The cook asks Léa, who is hesitating too much for his taste:
- b. Le cuisinier: bon! Quel plat vous choisissez, finalement?
The cook: Well! Which dish are you choosing, after all?

The speakers were divided in two different groups. Each group was associated with a set of cards representing half of the sentences. Each set was repeated three times, in a semi-random order. The speakers were requested to use colloquial French, as 'natural' as possible; repetitions were allowed, and regularly requested, in case of mistakes or sputtering.

The experiment consisted of 32 sentences, built upon 8 target sentences. The sentences varied depending on three parameters: (i) the polarity of the sentence (positive or negative); (ii) the place of the *wh*-word (in-situ or ex-situ); the form of the *wh*-word (*qui* 'who' vs. *quel N* 'which N').

Example (18) provides an example of a target sentence varying depending on the place and form of the *wh*-word, giving four different sentences (18a-d).

- (18) Eva organise la fête de Noël du département. Elle propose trois menus : végétarien, dinde, et saumon. Elle interroge une de ses collègues :
- Eva organizes a Christmas party in the department. She suggests three menus: vegetarian, turkey, and salmon. She questions one of her colleagues.*
- a. Eva: et toi, tu préfères quoi dans la liste?
and you, you prefer what in the list?
- b. Eva : et toi, qu'est-ce que tu préfères dans la liste ?
and you, what do you prefer in the list?
- c. Eva: et toi, tu préfères quel menu dans la liste?
and you, you prefer which menu in the list?
- d. Eva : et toi, quel menu tu préfères dans la liste ?
and you, which menu do you prefer in the list?

Two distinct contexts, with two different sentences, were built for each category and split into two packs (29 and 31 sentences each), depending on the context (namely, context 1 was associated with the first group and context 2 with the second group). Thus, each pack roughly

⁵ The seventh speaker was considerably younger than the other participants (thirteen years old), and had troubles performing the test.

contained the same number and same type of contexts. Each target sentence was associated with partitive, specific and non-presuppositional contexts, to the extent the combination grammatical in the French (there is no combination of ‘non-presuppositional wh-phrase’ with ‘neg islands’).⁶

4.2. Main results

4.2.1 Specificity vs. partitivity

The most important result of the experiment is that wh-words are frequently exponents of an accent, in sentences involving positive polarity, when they involve specificity-based presupposition, while they are not when they involve partitivity-based presupposition. More precisely, around 54% of specificity-based sentences are associated with an accent, but less than 10% of partitivity-based sentences are (cf. Figure 1).⁷

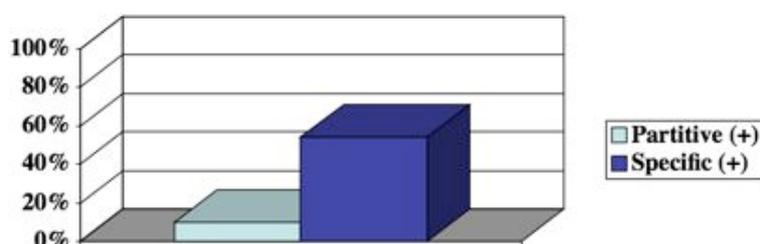


Figure 1: percentage of accent insertions in partitivity-based sentences and specificity-based sentences (positive polarity)

Most of the time, the accent is expressed by a high tone appearing on the wh-word. Such a high tone is associated with the wh-word *quel* ‘which’ in the second sentence (specificity-based) of Figure 2, while it is absent from the first sentence (partitivity-based).

⁶ Extracting this type of wh-phrases is well-known to be impossible for both in-situ and ex-situ wh-words, cross-linguistically. See Ross (1967), Huang (1982) for Chinese, Watanabe (1992) for Japanese, Rizzi (1990) and Starke (2001) for French, among many others.

⁷ In this paper, ‘accent’ has to be understood as ‘prosodic salience’.

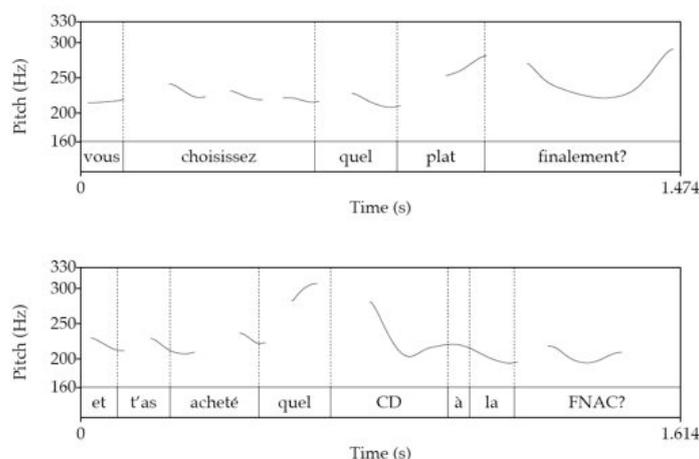


Figure 2: *partitive reading*: ‘vous choisissez quel plat, finalement?’ (which dish are you choosing, after all?), top example, vs. *specific reading*: ‘et t’as acheté quel CD, à la FNAC?’ (and which CD did you buy, at the FNAC (store)?), bottom example.

However, there is an important amount of variability among speakers with respect to the insertion of an accent on wh-words, explaining why only 54% of the specificity-based sentences involve an accent. Figure 3 illustrates the results for three different speakers: speaker 1, speaker 4 and speaker 7. Note that there is an accent on 90% (all but one) of speaker 1’s specificity-based sentences (positive polarity), while there is an accent on only 25% of the specificity-based sentences of speaker 4.

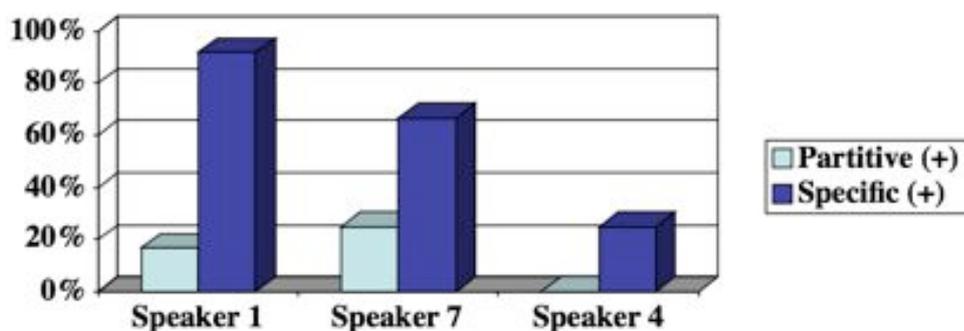


Figure 3: *accent realizations on wh-words, in partitivity-based and specificity-based sentences (positive polarity) for three different speakers*

We conclude from these preliminary results that the accent is an enhancement feature. The variation in the accentuation of the wh-word constitutes an interesting result since the wh-word is claimed to be accented in many (Indo-European) languages. In Greek, for instance, the wh-word is the most prominent word of the utterance (Aravaniti & Ladd 2009). Hedberg & Sosa (2002) and Haan (2001) affirm that the wh-word always bears an accent, in English and in Dutch respectively.

Chen (2006) and Lambrecht & Michaelis (1998), however, provide different results, arguing that this is true exclusively for the contexts when the remaining part of the question is contextually given. Outside this context, the wh-word is usually unaccented in English, according to Lambrecht & Michaelis (1998), and 64% of the wh-words in Dutch are accented, according to Chen (2006).

The situation in French is less clear. Variation in pitch on the wh-word has been observed by Beyssade *et al.* (2007): the wh-word gets a phrasal high tone when the nuclear contour of the utterance is falling, and a phrasal low tone when the contour is rising.

4.2.2. In-situ vs. ex-situ

A second important result of this preliminary study is that there is no difference with respect to the insertion of an accent depending on the in-situ or ex-situ position of the wh-word. These results were unexpected. They differ from those of Hamlaoui (in press), for whom there is a distinction in French between in-situ wh-words, which carry the main stress of the utterance, and ex-situ wh-words. The results are summarized in Figure 4.

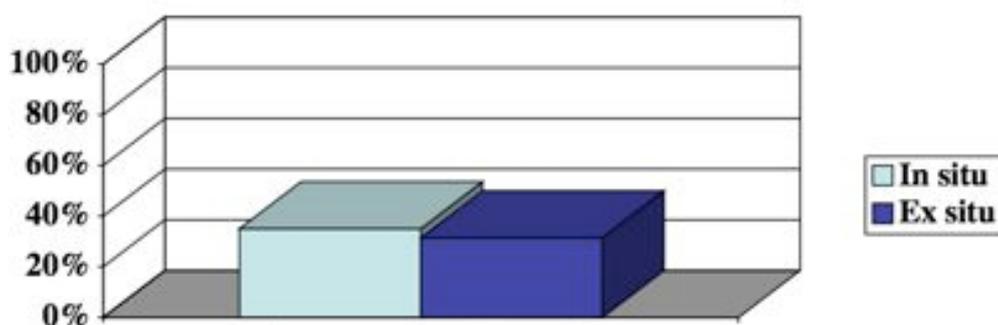


Figure 4: overall results with respect to accent insertion on the wh-word

What is notable here is that this relative lack of distinction is observable for every speaker except speaker 2, who barely inserts an accent when the wh-word appears in an ex-situ position, (Figure 5).

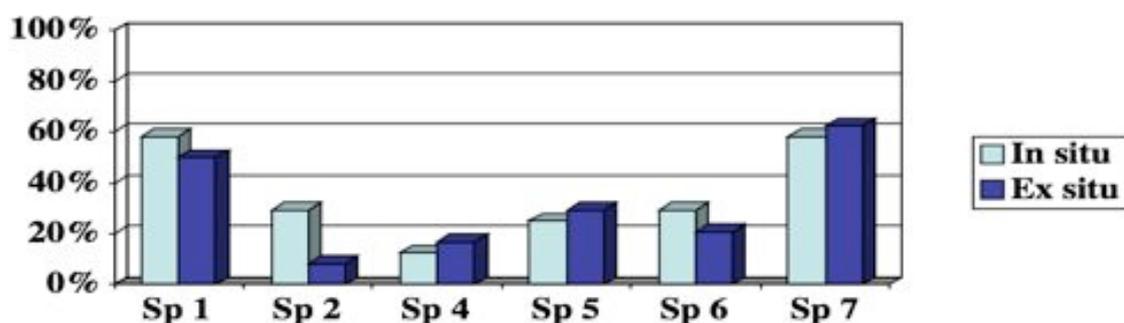


Figure 5: percentage of accent insertion on the wh-word depending on its position for each speaker

There is however a distinction between *qui / quoi* wh-words, on the one hand, and the *quel* (N) wh-words, on the other hand. In the former, there are less insertions of accents in ex-situ positions, because *quoi* ‘what’ is then realized as *qu’est-ce que*, a composition that involves the clitic *qu’* with the set expression *est-ce que*.⁸ In the latter, no such distinction is obvious.

⁸ See Rooryck (1994) for details on interrogative constructions with *est-ce que*.

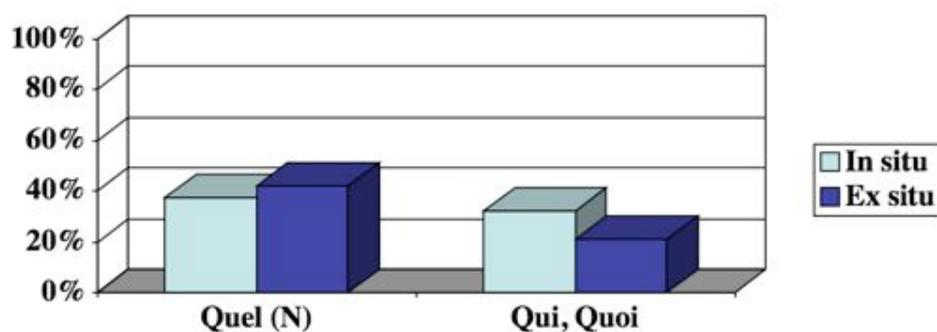


Figure 6: percentage of accent insertion on the wh-word according to the word category

4.3. The 'accent'

As it has been said in section 4.2., the accent is most of the time realized as a high tone. The high tone appears on the wh-word: *qui*, *quoi* or *quel* in the sentences involving a *quel N* structure (e.g. in the second sentence – the specificity-based one – of the Figure 7); etc. For example, in the second sentence of Figure 2, which involves a specificity-based presupposition, the wh-word is associated with a high tone, while this is not the case in the first sentence.

One or several enhancement features sometimes accompany the high tone. Besides the rising of the F0, the accent may be realized using:

- the increasing of the intensity of the wh-word
- the lengthening of the vowel of the wh-word (i.e. /ki/ 'qui' → [ki:])
- the lengthening of the [k] (i.e. /ki/ 'qui' → [k:i])

In Figure 7, for instance, the wh-word *qui* is by far more intense than the other words of the sentence. The vowel [i] is also lengthened.

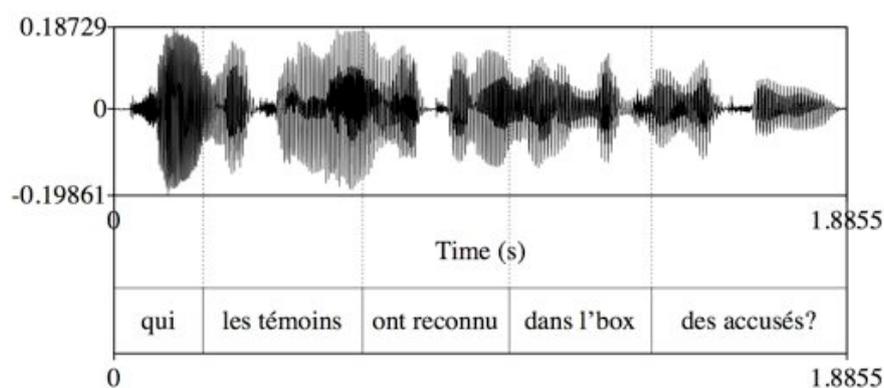


Figure 7: specific reading: 'qui les témoins ont reconnu dans l'box des accusés?' (whom did the witnesses recognize in the box?)

In Figure 8, the length of the [k] of the word *quoi* ([kwa]) 'what' is clearly lengthened: the consonant is more than 0.151 second length.

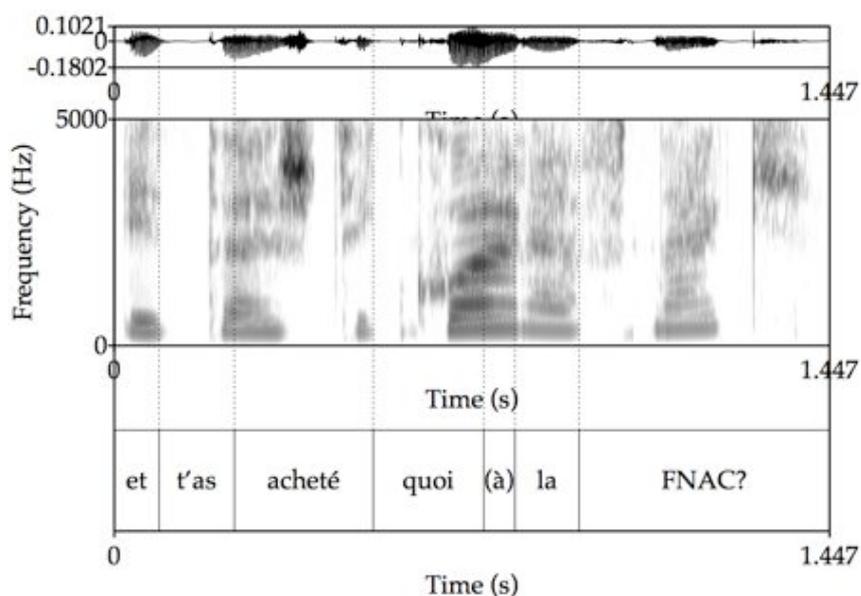


Figure 8: specific reading: ‘et t’as acheté quoi, à la FNAC?’ (and what did you buy at the FNAC (store)?).

Some speakers never use these enhancement features (e.g. speaker 5), while some use several of them very frequently (e.g. speaker 1).

4.4. Non-presuppositional readings and negative islands

Two types of sentences lead to contradictory results: non-presuppositional-based sentences, on the one hand, and sentences involving a neg-island, on the other hand.

An accent appears on the wh-word in 37,5% of the sentences that are associated with a non-presuppositional reading. However, a detailed study of the results reveals that the presence of an accent strongly depends on the nature of the question (Figure 9).

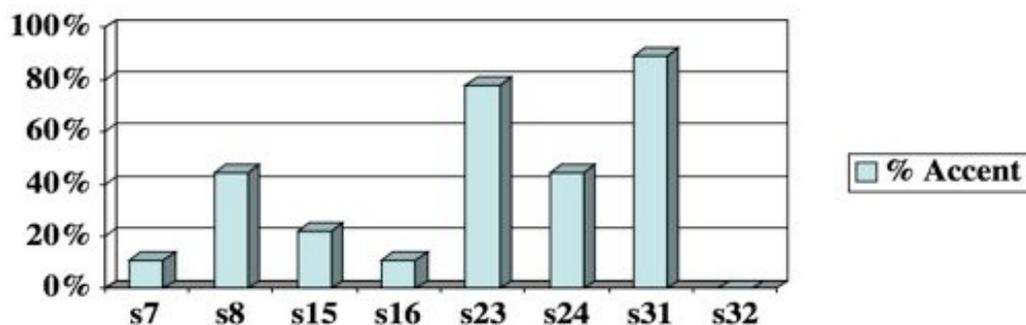


Figure 9: percentage of accents on the wh-word depending on the sentence

Figure 9 shows that an accent is frequently associated with wh-words of the sentences s23 and s31, while this is not the case for other sentences such as s7 or s16; no accent was even associated with s32. How to explain these disparities? s23 and s31, along with the context they share, are presented in (22).

- (22) Céline passe l'après-midi chez Nathalie. Elle part faire une course rapide et lui dit qu'elle rentrera vite, mais elle ne revient que deux heures plus tard.

Céline spends her afternoon at Nathalie's place. She goes out to run a small errand and says she'll come back soon, but she comes back two hours later.

- (s23) Nathalie : T'as fait quelle connerie pendant tout ce temps ?
you – did – which – stupidity – all this time?

- (s31) Nathalie : Quelle connerie t'as fait(e) pendant tout ce temps ?
which – stupidity – you – did – all this time?

One can notice that the wh-word *quel(le)* 'which' is immediately followed by the word *connerie* 'stupidity' in s23 and s31. It seems that the insertion of an accent on the wh-word of these sentences relates to the vulgarity of the chosen noun. The two other sentences that were built on the same target sentence but which involved the wh-words *quoi* 'what (in-situ)' and *qu'est-ce que* 'what (ex-situ)' – s7 and s15, respectively, rarely exhibit an accent on the wh-word.

Results concerning the sentences involving a neg-island are also ambiguous. 30,5% of these sentences are associated with an accent, but this percentage covers a great diversity of behaviors. Speaker 1, for instance, almost always associates an accent with the wh-word *quell(les)* 'which', but almost never with *qui/quoi* 'who/what'. Speaker 5 and Speaker 7 exhibit an opposite behavior. Speaker 4, however, never associates an accent with a wh-word in a sentence that involves a neg-island. It is thus hard to make a good use of these results. Moreover, it has to be noted that some of the speakers questioned the acceptability of the given sentences.

5. Conclusion

In this paper, we focused on the relationship between the prosody of wh-phrases in French and their various interpretations. We have shown that speakers clearly discriminate between on the one hand specific and on the other hand partitive and non-presuppositional wh-words, regardless of their position (in-situ vs. ex-situ). In the former case, but not in the latter, an accent is associated to the wh-word. This accent is realized as a high tone, possibly enhanced by other factors (such as increased intensity for instance). Yet no prosodic distinction between partitive and non-presuppositional items has been identified. We conclude that wh prosody is crucially sensitive to specificity. It is an argument to distinguish partitivity vs. specificity within existential presuppositions triggered by wh-words (Starke (2001), Baunaz (2010)). Apparent lexical ambiguities are context-dependent and can be (partially) resolved via prosody.

Acknowledgments

For useful comments and/or help, we would like to thank Claire Beyssade, Elisabeth Delais-Roussarie, Cécile Fougeron, Jean-Philippe Goldman, Fabiola Henri, Tabea Ihsane, Jean-Marie Marandin, Katia Paykin, Genoveva Puskás, Rachid Ridouane, Selja Seppälä, Coralie Vincent and Hi-yon Yoo. Preliminary versions of this paper were presented at the Laboratoire de Linguistique Formelle (Paris 7), at the ILPGA (Paris 3), at the University of Geneva (Switzerland), as well as at the *conference on Minimalist Approaches to Syntactic Locality* in Budapest (august 2009) and at the *Interface Discourse - Prosody Conference '09* held in Paris. We warmly thank these audiences for their critical questions and comments. The research for this paper was supported by the Swiss National Funds (n° PBGEP1-123702 (Lena Baunaz)) and the ANR project PRO-GRAM (Cédric Patin).

References

- Adli, A. (2006). French wh-in-situ questions and syntactic optionality : Evidence from three data types. *Zeitschrift für Sprachwissenschaft* 25, pp. 163-203.
- Aravaniti, A. & D. R. Ladd (2009). Greek wh-questions and the phonology of intonation. *Phonology* 26 , pp 43-74
- Baunaz, L. (2005). The syntax and semantics of wh in-situ and existentials: the case of French. *Leiden Working Papers in Linguistics* 2.2, pp. 1-27.
- Baunaz, L. (2011). *The Grammar of French Quantification*. to be published in *Studies in Natural Languages and Linguistic Theories*, Springer.
- Baunaz, L. (2010). Between syntax, semantics and prosody: the case of wh in-situ in French. Ms. University of Geneva.
- Beyssade, C., E. Delais-Roussarie & J.-M. Marandin (2007). The prosody of interrogatives in French. *Nouveaux cahiers de linguistique française* 27, pp. 163-175.
- Boeckx, C. (1999). Decomposing French Questions. Ms, U.Penn.
- Boeckx, C. (2000). Decomposing French Questions. In University of Pennsylvania Working Papers in linguistics 6.1, Proceedings of the 23rd Annual Penn Linguistics Colloquium, eds J. Alexander, N.R. Han & M. Minnick Fox, 69-80.
- Boeckx, C. (2003). French Wh-in-situ Interrogatives as (C)overt Clefts, Ms. Harvard University.
- Boskovic, Z. (2000). Sometimes in SpecCP, sometimes in-situ. In Step by step: Essays on minimalism in honor of Howard Lasnik, eds. R. Martin, D. Michaels and J. Uriagereka, 53-87. Cambridge, Mass.: MIT Press.
- Chang, L. (1997). Wh-in situ in French. MA thesis, University of British Columbia.
- Chen, A. (2006). Interface between information structure and intonation in Dutch wh-questions. In R. Hoffmann, & H. Mixdorff (Eds.), *Speech Prosody 2006*. Dresden: TUD Press.
- Cheng, L. et J. Rooryck. (2000). Licensing wh-in-situ. *Syntax* 3. 1, pp. 1-19
- Cinque, G. (1990). *Types of A bar-dependencies*. Cambridge, Massachusetts: MIT Press, Linguistic Inquiry Monograph.
- Haan, J. (2001). *Speaking of questions. An exploration of Dutch question intonation*. LOT dissertation series 52, LOT, Utrecht.
- Hamlaoui, Fatima (In press). On the role of phonology and discourse in Francilian French wh-questions. *Journal of Linguistics*.
- Hedberg, N. & J.M. Sosa (2002). The Prosody of Questions in Natural Discourse. *Proceedings of Speech Prosody 2002*, pp. 375-378.
- Heim, I. (1982). The Semantics of Definite and Indefinite Noun Phrases, Ph.D. Diss., Umass.
- Huang, J. (1982). Move WH in a language without WH movement. *The Linguistic Review* 1: 369-410.
- Mathieu, E. (2002). The Syntax of Non-Canonical Quantification: A Comparative Study. Doctoral Dissertation, UCL.
- Mathieu, E. (2004). The Mapping of Form and Interpretation: The Case of Optional Wh-Movement in French, *Lingua*, eds. M. Haverkort, H. de Hoop and M. van den Noort.
- Pesetsky, D. (1987). Wh-in-situ: Movement and unselective binding. In *The representation of (in)definites*, eds. Eric Reuland, and Alice ter Meulen. Cambridge, Mass: MIT Press.
- Rizzi, L. (1990). Relativized Minimality, Cambridge, MA: MIT Press
- Ross, John. R. (1967). *Constraints on variables in Syntax*. Ph.D. dissertation, MIT.

Rooryck, Johan. (1994). On two types of underspecification: towards a feature theory shared by syntax and phonology. *Probus* 6, 207-233.

Starke, M. (2001). Move Dissolves into Merge: A Theory of Locality. Ph.D. dissertation, University of Geneva.

Watanabe, Akira. (1992). Subjacency and S-structure movement of wh-in-situ. *Journal of East Asian Linguistics* 1:255-291.