Interrogative Sentences in French Syntax & Prosody

Caterina Bonan & Lucas Tual
Université de Genève

1ˢᵗ SynCart Workshop
July 12, 2016

Brief overview

➢ Who we are: the **WHISF research group**;

➢ In situ wh-elements in French: the need for solid, empirically-validated data;

➢ Our work so far: Interesting accounts, corpus analysis, predictions:

➔ **Boskovic (2000)**: purely syntactic account;

➔ **Cheng & Rooryck (2000)**: testable hypotheses on the correlation between syntax and prosody in French;

➔ **Déprez & alii (2013)**: production test that partly confirms C&R's ideas;

➔ Preliminary results of our **corpus analysis**: a different direction?

➢ Future work:

➔ Study of new corpora + finer prosodic analyses of oral French;

➔ Deeper study of *Trevigiano*, a North-Eastern Italian dialect.

Introduction to French interrogatives

French allows for several *question formation strategies*:

- ➢ **Wh- questions**
    - ➔ in situ: "Tu as vu qui?"
    - ➔ ex situ: "Qui tu as vu?"
    - ➔ est-ce que: "Qui est-ce que tu as vu?"
    - ➔ inversion: "Qui as-tu vu?"
    - ➔ cleft: "C'est qui que tu as vu?"
- ➢ **Yes-no questions**
    - ➔ inversion: "Es-tu parti?"
    - ➔ est-ce que: "Est-ce que tu es parti?"
    - ➔ bare: "Tu es parti?"

Bošković (2000):
Sometimes in [Spec;CP], sometimes in situ

Matrix questions: FR allows both the ex situ and the in situ strategies:

(1) a. *Qui tu as vu?*

b. *Tu as vu qui?*

Embedded questions: insituness is ruled out:

(2) **Pierre a demandé tu as vu qui*

➔ Boskovic explains these phenomena using Chomsky's (1995)'s account, which allows for <u>lexical insertion of phonologically null elements at LF</u>:

French has a strong [+wh] feature. The CP is not present in overt syntax, the null C is merged at LF (legitimate move: the insertion takes place at the top of the tree):

(3) a. SS: [IP *Tu as vu qui?*]

b. LF: [CP *Qui* C [IP *tu as vu?*]]

Bošković (2000)

In embedded clauses the delayed insertion of the CP layer is not possible: illigitimate instance of Merge, it would not expand the tree! Checking of the strong [+wh] feature: done in <u>overt syntax</u>, before the higher structure is built!

(4) SS: *Pierre a demandé* [CP *qui* C [IP *tu as vu*]]

As for the FR in situ/ex situ alternation in matrix clauses, Boskovic suggests we should exempt Merge from Procrastinate - then the phonologically null C can be merged *overtly* (*Qui tu as vu?*) or *covertly* (*Tu as vu qui?*)!

<u>This approach is elegant but problematic</u>:

➜ Problems with the data: non-standard French allows for negated in situ questions, insituness in embedded contexts etc. (Mathieu (1999), Baunaz (2011), among others);

➜ How to account for a CLD + in situ structure (5)?

(5) *Ton cousin Eric, tu l'as vu quand ?*

Cheng&Rooryck (2000)
Licensing wh-in-situ

C&R propose an interesting correlation between the syntax and prosody of French interrogatives.

Yes/no questions and wh-questions with an *in situ wh-element* are both assigned a *sentence-final rising contour* - associated to what they call the **Q-morpheme** (*yes-no intonation morpheme*).

Such morpheme checks the Q-feature in C° when the wh-element sits in situ. In ex situ questions, the checking is done via the movement of the wh-element.

The value of the Q-morpheme is not specified in overt syntax. It can take three values:

➢ [Q: qu] (wh-question);

➢ [Q: yes/no] (yes/no question);

➢ [Q:] when it is underspecified.

Cheng&Rooryck (2000)

Wh-in situ interrogatives are associated with [Q:]

➔ when the value of C° is underspecified, the intonational morpheme is given a default value ([yes/no]) in LF. Such default value corresponds to a **sentence-final rising intonation**.

This approach predicts the following:

➢ yes/no questions should have a rising contour;

➢ the same contour should be found in wh-in situ questions;

➢ wh-ex situ questions, should show a different prosody: a final fall.

➔ These predictions will be tested empirically in the corpus of oral French we chose for our work.

Déprez et al. (2013):
The interaction of syntax, prosody, and discourse in French wh-in-situ questions

Some of C&R's generalizations have been claimed to be false:

➢ it is for example possible to answer a wh-in situ question by means of negative answer, and insituness is licensed in many more contexts than those claimed by C&R (Adli 2004, Baunaz 2011, Zubizarreta 2001, among others);

➢ wh-in situ questions are not systematically associated to a sentence-final rising contour (Adli 2004, Hamlaoui 2008, Zubizarreta 2001, etc.).

Déprez&al. tested the prosodic predictions of C&R's account (controlled production test, 12 native speakers of French). <u>Predictions</u>:

➢ Y/n questions with/without *est-ce que* should show a final rise;

➢ Declaratives should not;

➢ Ex-situ questions should have a falling contour.

Déprez et al. (2013)

The results:

➢ Two distinct groups of speakers were found: most participants assigned a sentence-final rise to wh-in situ questions, yet a minority of speakers did not;

➢ The rise associated with wh-in situ appeared systematically more compressed than the rise in y/n questions:

➡ Both types of questions should be licensed by the same morpheme – why two different realizations of the same phonological event?

➢ Interestingly, the sentences lacking a sentence-final rise showed an *"elevated" high pitch accent* on the in situ wh-word.

Déprez&al.'s results are, in a way, slightly problematic for C&R's account but, on the whole, they provide supporting evidence.

Corpus study

Goal of this study: to verify C&R's hypotheses on the basis of data from a spoken corpus, rather than read speech (as in Déprez et al. (2013)).

➔ Questions from a French spoken corpus (ESLO2 interview section, ESHKOL-TARAVELLA et al. (2011));

➔ Manual syntactic annotation was done, especially to distinguish ex-situ from in-situ questions;

➔ Sentences were automatically segmented in Praat by the EasyAlign plugin (Goldman, 2011) to align text and sound. Pitch contours were generated by Praat and manually checked.

Predictions, following C&R's theoretical assumptions:

➢ in-situ and yes-no questions show a final rise, hence high pitch on last vowel (V0);

➢ declaratives and ex-situ questions do not (low pitch on V0);

➢ the presence of "est-ce que" should not influence the final intonation.

Methodology

1123 annotated sentences were selected for the study:

➜ 443 declaratives (39%);

➜ 342 yes-no questions (30%);

➜ 189 wh-in-situ questions (17%);

➜ 155 wh-ex-situ questions (14%);

➜ Limited amount with "est-ce que" (120 sentences total), none with SclI inversion.

We calculated the mean F0 values (semitones, re 100) on:

➢ the last accented vowel (V0);

➢ and the penultimate one (V1), for each type of sentences.

Methodology (2)

We used multi-level mixed effects regressions models with Helmert coding for contrasts to understand:

➢ the relationship between pitch height on the last vowel and the type of sentences;

➢ the relationship between the F0 height difference of V0 and V1 and the types of sentences;

We included as fixed effects the type of sentences, sex of the speaker and number of syllables with by-subject random intercepts and slopes.

Results: F0 on the last V
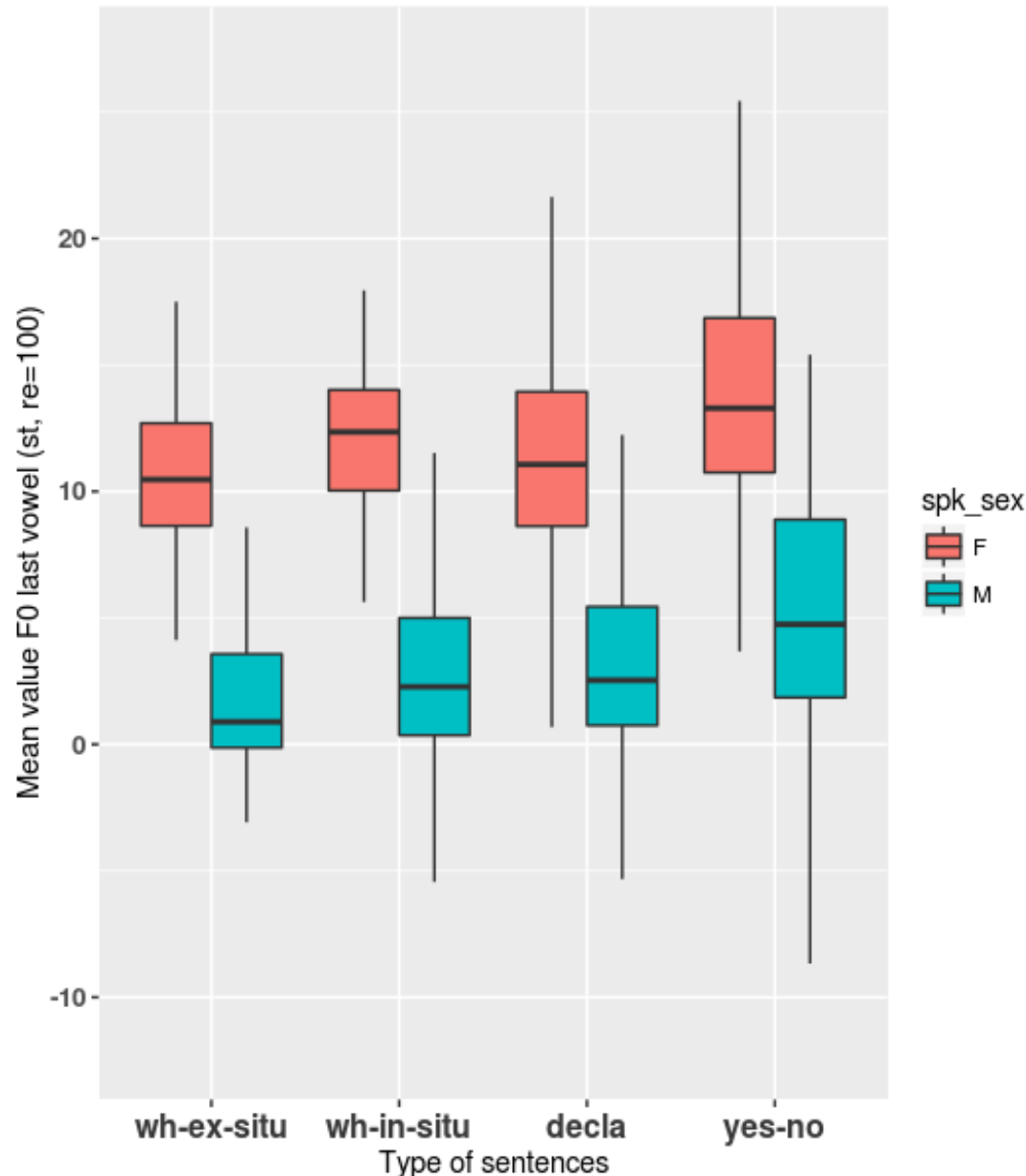
➔ Among wh- sentences, no significant difference w.r.t. F0 values on V0 between in situ and ex situ wh-questions: $p > 0.05$;

➔ F0 values on declarative sentences were not significatively different from those on wh- questions: $p > 0.05$;

➔ Yes-no questions showed significantly higher F0 value on V0 than wh-questions and declaratives altogether: $\beta = 0.67$, $p < 0.001$

Results: F0 V0 – F0 V1
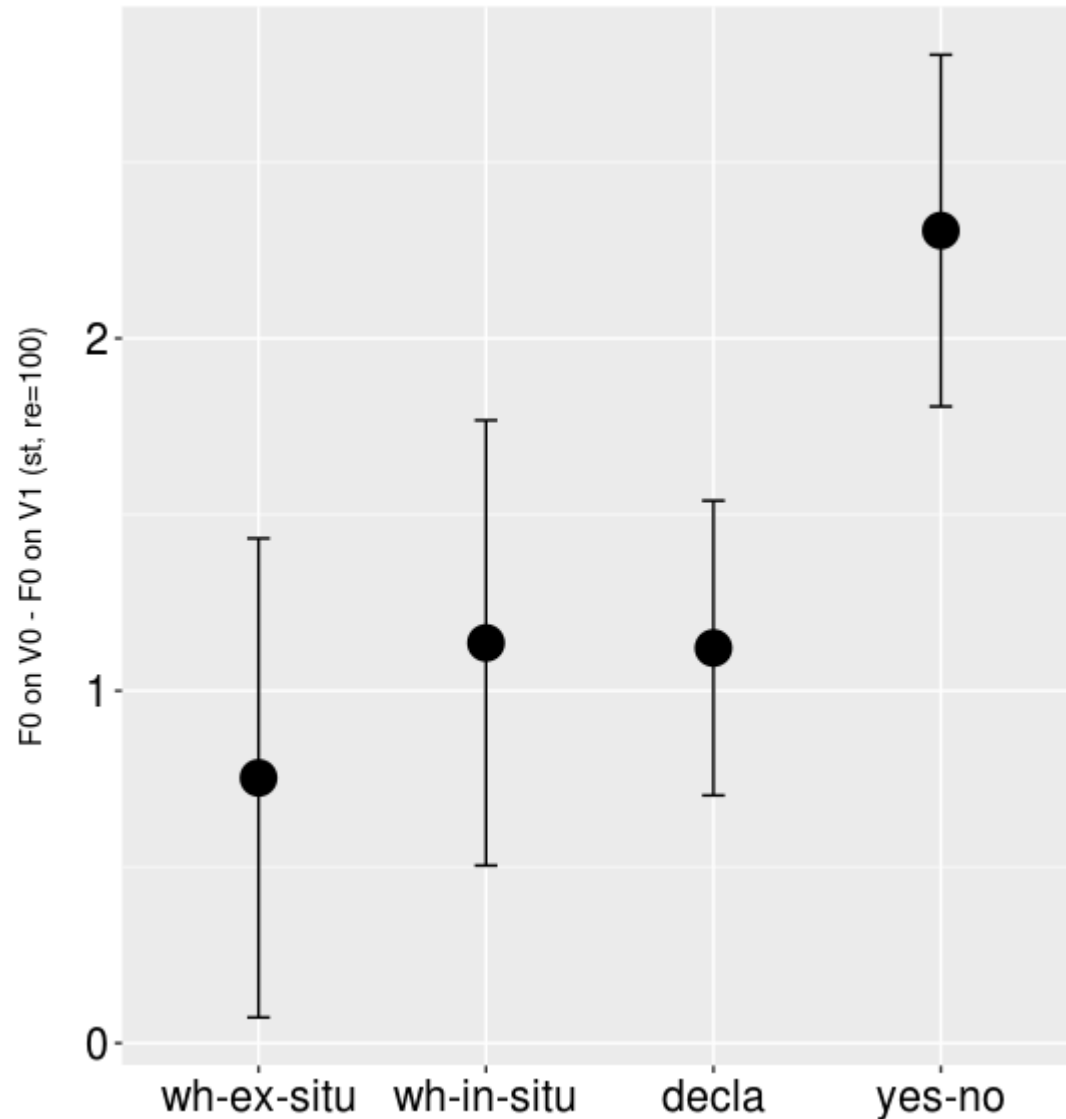
Stronger results when it comes to the difference between V0 and V1.

➔ No significant difference between ex situ and in situ wh-questions for the difference between mean F0 values on V0 and V1: $p > 0.05$;

➔ Declarative sentences patterned with wh- questions: $p > 0.05$;

➔ Yes-no questions showed a significant increase of F0 on the last two vowels w.r.t. the other types of sentences: $\beta = 0.31$, $p < 0.001$

Discussion

These results seem to contradict C&R's hypotheses and Déprez&al.'s findings:

- ➢ We did not observe a contrast between in situ and ex situ questions. Wh- questions patterned with declarative sentences, showing :

    - ➔ similar mean F0 values on the last vowel;

    - ➔ similar differences between mean F0 values on V0 and V1;

- ➢ Yes-no questions differ from the other types of questions: a final rising contour is more apparent than for wh- questions;

- ➢ We did not create different groups for subjects, as it was done by Déprez&al. to explain some differences between subjects regarding the presence of a final rising contour.

Further research

To verify our findings and see if they really challenge C&R's theoretical assumptions, we need to do a few more things:

➢ to analyse more annotated sentences, especially to understand the influence of "*est-ce que*" on final intonation;

➢ to manually ToBI transcribe the final contours;

➢ to verify under which conditions declarative sentences can have a final rise (a possibility being continuation intonation);

➢ to get the values of F0 on wh-elements for in situ and ex situ questions. If the wh-element associates with a prominent pitch accent, does it have an impact on the final contour of the sentence (as proposed by Déprez&al. (2013)) ?

Thank you for your attention!

& special thanks to Giuliano, Ur,
and Orijana (who helped us with the syntactic annotations)

References

ADLI, Aria. 2004. *Y a-t-il des morphèmes intonatifs impliqués dans la syntaxe interrogative du français? Le cas du qu-in situ*. In: Meisenburg, T., Selig, M. (Eds.), Nouveaux départs en phonologie: les conceptions sub- et suprasegmentales. Narr, Tübingen, pp. 199–215.

BAUNAZ, Lena. 2011. *The Grammar of French Quantification*. Studies in Natural Language and Linguistic Theories. Springer.

BOSKOVIC, Zeliko. 2000. *Sometimes in [SpecCP], sometimes in-situ*. In Step by step, essays on Minimalist Syntax in honor of Howard Lasnik, eds. Roger Martin, David. Michaels and Juan Uriagereka, 53-87. Cambridge, Mass.: MIT Press.

CHENG, Lisa Lai-Shen, and Johan ROORYCK. 2000. *Licensing wh-in-situ*. Syntax 3, 1–19.

CHOMSKY, Noam. 1995. *The Minimalist Program*. MIT Press, Cambridge, MA.

DEPREZ, Viviane, Kristen SYRETT, and Shigeto KAWAHARA. 2013. *The interaction of syntax, prosody, and discourse in French* wh-in-situ *questions*. Lingua 124, pp. 4-19.

ESHKOL-TARAVELLA Iris, Olivier BAUDE et al. 2011. *Un grand corpus oral « disponible » : le corpus d'Orléans 1 1968-2012*. Traitement Automatique des Langues, 53 (2), pp.17-46.

GOLDMAN, Jean-Philippe. 2011. *EasyAlign: an automatic phonetic alignment tool under Praat* Proceedings of InterSpeech, Firenze, Italy.

HAMLAOUI, Fatima. 2008. *On the Role of Discourse and Phonology in French wh-questions*. Ms. University of Ottawa.

MATHIEU, Eric. 1999. *French wh in situ and the intervention effect*. UCL Working Papers in Linguistics, 11:441–472.

ZUBIZARRETA, Maria-Luisa. 2001. *The constraint on preverbal subjects in Romance interrogatives: a Minimality effect*. In Hulk&Pollock (eds.). Subject Inversion in Romance and the Theory of Universal Grammar. Oxford University Press. Oxford.

Appendix (1)
Influence of "*est-ce que*"
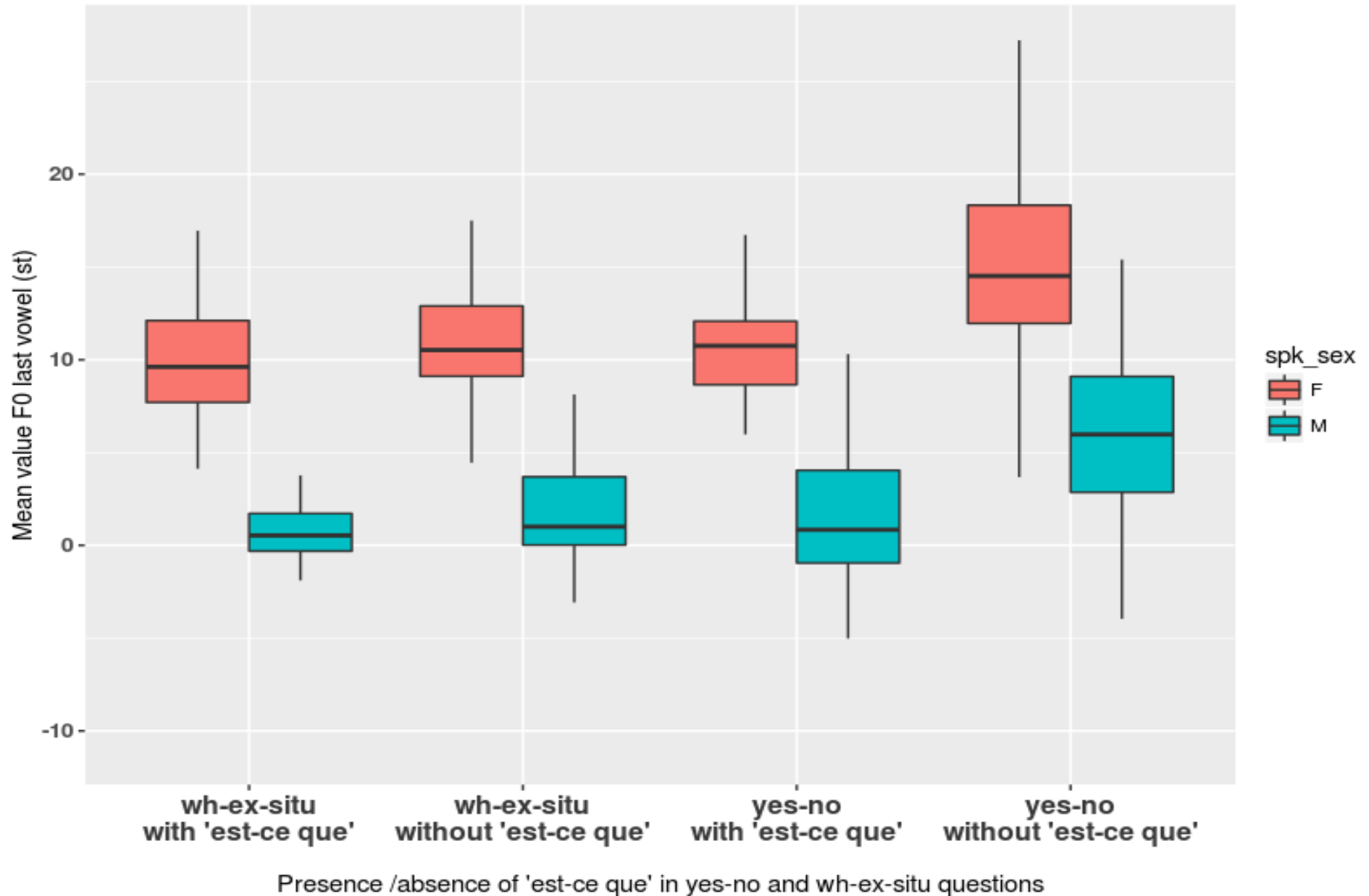
Appendix (2)
Yes-no questions and *"est-ce que"*

We tried to understand the great variation found in yes-no questions. It appeared that the "est-ce que" marker might play a role for this type of questions.

We remarked that the presence or absence of the marker "est-ce que" influenced F0 values on the last vowel. Yes-no questions with this marker display lower F0 values on V0 than those without the marker, which is not predicted by CR's analysis.

However, the presence or absence of "est-ce que" did not have any effect on the pitch height of the last vowel in wh-ex-situ questions.

Wh-ex-situ questions (with or without *"est-ce que"*) patterned with yes-no questions with *"est-ce que"*. Yes-no questions with no marker show a higher mean F0 value on V0.