The semantics and prosody of French *comment* questions with reason interpretation:
expectation disconfirmation and surprise effects

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reason *comment*-questions

(1) Q: Comment Max lit   le courrier de Paul?   Fleury and Tovena 2018

       how   Max reads the email   of Paul

Possible answers, congruent with different readings:

    A1: He does it furtively. (manner)

    A2: He does it with a remote login. (means)

    A3: He is a nosy person.

       He certainly doesn't, he is so respectful.   (reason)

reason *comment*-questions

(1) Q: Comment Max lit   le courrier de Paul?   Fleury and Tovena 2018

  how   Max reads the email   of Paul

The proposition expressed by the clause the *comment* of reason operates on (Max reads Paul's email) is called **prejacent** by F&T 2018.

reason *comment*-questions

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      how   Max reads the email   of Paul

The proposition expressed by the clause the *comment* of reason operates on (Max reads Paul's email) is called **prejacent** by F&T 2018.

Another possible formulation of this question (with the same reading):

(1') Q: Comment **ça (se fait que)** Max lit   le   courrier de Paul?

      how   that is-done that Max reads the email   of Paul

reason *comment*-questions and *pourquoi*-questions

Reason questions can also be worded with ***pourquoi* ('why')**:

(3) **Q:** <u>Pourquoi</u> Max lit le courrier de Paul?
    'Why does Max read Paul's email?'
A: 'To find the information about the party'

reason *comment*-questions and *pourquoi*-questions

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   'Why does Max read Paul's email?'

  A: 'To find the information about the party'

Cases of **why-how** alternation have been observed in several languages (Collins, 1991; Tsai, 2008; Hsiao, 2017).

reason *comment*-questions and *pourquoi*-questions

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(3) **Q:** <u>Pourquoi</u> Max lit le courrier de Paul?

'Why does Max read Paul's email?'

A: To find the information about the party.

Cases of **why-how** alternation have been observed in several languages (Collins, 1991; Tsai, 2008; Hsiao, 2017).

However:

Fleury and Tovena 2019

- only *pourquoi* can be used to inquire about:
  - the goal/purpose of the initiator of the event
  - the situation that would ensue (result)

- The prejacent of the reason-*comment* Q describes a situation that is actual or potential, therefore it is not

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Brunetti, Tovena, Yoo

reason *comment*-questions and *pourquoi*-questions

- A question with reason-*comment* is the expression of an attributional search by the speaker, i.e. <u>a search for explanation in reaction to an</u> **expectation disconfirmation**. (Fleury and Tovena 2018)

- The speaker's expectations are inconsistent with the truth of the prejacent (= effect of **surprise**)

(6) Anne Sophie : Did you read, Mrs Catherine? They want to build a highway in the middle of our village

Catherine : I think I just heard about it on the radio

Anne Sophie : **C'est incroyable**, comment peut-on faire une chose pareille ?

'It is unbelievable, how can one do such a thing?'

morphosyntactic and semantic properties

The reason reading is often facilitated by a special **morpho-syntax**.

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- The **absence of subj-aux inversion** facilitates the reason reading

(1) Comment <u>Max lit</u>   le courrier de Paul?
    how   Max reads the email   of Paul

(5)   Mais comment <u>tu pourrais</u>   le   quitter?! C'est l'amour de ta vie!

morphosyntactic and semantic properties

The reason reading is often facilitated by a special **morpho-syntax**.

- **Negation** is a factor facilitating reason readings

(3) Comment <u>n</u>'avez-vous <u>pas</u> reçu   ma lettre ?
     how   have-you   not received my letter
     'How come you did not receive my letter?'

morphosyntactic and semantic properties

The reason reading is often facilitated by a special **morpho-syntax**.

- The presence of **modals** (mostly epistemic) or **semi-modals** facilitates reason readings

(4) a. Comment <u>pouvez-vous </u>vivre ainsi ?   Desmets and Gautier 2009
       'How can you live like this?'

 b. Comment <u>veux-tu </u>qu'une femme soit amoureuse du meurtrier de son père ?
       how   want-you that a woman be   in-love   of-the murder of her father
       'How can a woman be in love with her father's murder?'

(6) Comment   Léa <u>ose</u> lire le courrier de Tom?
     'How dares Léa read Tom's email?

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morphosyntactic and semantic properties

The reason reading is often facilitated by a special **morpho-syntax**.

- The **conditional** affects the committment to the truth of the prejacent.

(5) Mais comment tu <u>pourrais</u> le quitter?! C'est l'amour de ta vie!
        but how   you could   him leave
      'How can you break up with him? He is the love of your life!'

morphosyntactic and semantic properties

The reason reading is often facilitated by a special **morpho-syntax**.

- **High degree expressions** (*un tel, aussi…*etc.)

(6) Comment peux-tu quitter un homme **aussi** adorable?
    how   can you leave a man   so sweet
    'How can you break up with such a sweet man?'

reason *comment*-questions and rhetorical questions

NB: Some of these factors are known to favour **rhetorical** uses of questions (Sadock, 1971; Desmets and Gautier, 2009)

reason *comment*-questions and rhetorical questions

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Ex. of rhetorical question with a **modal**

(7) ['« But if you do not tie it up, it will go anywhere (…)]
    « Mais où   veux-tu   qu'il aille! »
       but where want-you that it go
       'But where on earth could it go!'   (*Petit prince*)

Ex. of rhetorical question with a **conditional**

(8) Qui   partirait   en vacances demain ? (Personne.)
    who would-go on holidays tomorrow   nobody

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Brunetti, Tovena, Yoo

reason *comment*-questions and rhetorical questions

Rhetorical questions

i) are viewed as not interrogative anymore, but rather as <u>assertions of opposite polarity</u> (Sadock, 1971; Han, 2002);

ii) are said to have <u>biased answers</u> that belong in the Common Ground (Caponigro and Sprouse, 2007), or

iii) Because they invoke an answer set, rhetorical questions resemble interrogatives, but the <u>obviousness of a particular answer</u> implies the bias of an assertion (Rohde, 2006).

reason *comment*-questions and rhetorical questions

- Desmets and Gautier 2009, Marandin & Beyssade 2006

Reason-*comment* Qs "are **biased** questions in that, by elaborating a contradiction (cf.(46a) or an impasse (cf. 46b), they contribute to drastically reduce the range of available answers" (D&G 2009):

(46) a. Comment puis-je être gai quand maman est si triste ?
   'How can I be happy when mum is so sad?'
   b. Comment deux et deux peuvent faire trois ?
   'How can two plus two make three?'

reason *comment*-questions and rhetorical questions

- Desmets and Gautier 2009, Marandin & Beyssade 2006

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- Fleury and Tovena 2018

Reason-*comment* Qs express a search for explanation in reaction to an **expectation disconfirmation**. The speaker's expectations are inconsistent with the truth of the prejacent.

reason-*comment*

- Reason-*comment* does not bind a variable that is an argument of the verb or is linked to a position inside the clause. Indeed, the reasons for an event to occur are not part of the description of the event itself.
- However, assuming a variable would preserve a generalisation over wh-items. It could be of the semantic type of a proposition.

(9) a. Comment [Max reads Paul's email x] ?   ←   Manner

   b. Comment x [Max reads Paul's email] ?   ←   Reason

- See Fleury and Tovena 2019 for arguments in favour of a high base generated position for *comment* (cf. Shlonsky and Soare 2011).

Research questions of our study

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- Is the prosody of a Manner-*comment* Q different from that of a Reason-*comment* Q?

- What can prosody tell us about the semantics of Reason-*comment* Qs?

The prosody of rhetorical questions

German (Wochner et al 2015):

- Higher initial peak
- longer duration of wh-word and sentence-final noun
- A breathier voice quality

French (Delais & Beyssade 2019):

- slower articulation rate
- longer duration of wh-word
- falling final contour
- *wh*-word often followed by a boundary

Cf. Information Seeking Qs (vs Statements)

- Both falling (Delattre 1966) and rising contours (Delais et al 2015, Beyssade et al 2006)
- Higher pitch range than statements (Caelen-Haumont 2005)
- Shorter duration than statements (Beyssade et al 2007)

Predictions

- Prosodic cues can differentiate Manner from Reason-*comment* Qs

- The prosodic cues that can be associated with Reason-*comment* Q are the following :

  1. *comment* is prosodically separated from the rest of the sentence
     <— no variable linked to a position inside the clause

  2. Expressive intonation can occur
     <— the intonation expresses expectation disconfirmation / surprise

  3. the end of the utterance is associated more to a falling contour
     <— it is closer to a rhetorical intonation (> assertion)

Production experiment 1

Production experiment 1

Stimuli: 4 target questions beginning with *comment* in two different contexts:

> one triggering a Manner reading

> one triggering a Reason reading

presented randomly in three different blocks.

The prejacent always describes an event that did not take place yet but such that somebody's intentions (generally the interlocutor's) are that the event will take place.

Participants: **9 participants** aged 28-35 with no reported speech disorders.

Task : read the written context carefully, then produce the target Qs, taking the context into account. These sentences were presented randomly as fillers of another experiment following the same experimental protocol.

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Production experiment 1

Global descriptive analysis

Speech rate is a bit faster for RQs: (contra Delais et Beyssade 2019)

6,8 syll/sec and 14,5 syll/sec for RQs vs.

7,2 syll/sec and 15,3 syll/sec for MQs

LH L% is the most common for both RQs and MQs, but all combinations are possible:

	LH	L	HL	Non accented
Q	77	7	11	4
R	84	12	11	0
Total	161	19	22	4

Contour on *comment*

	LH%	L%	LHL%	H%	Other
Q	15	68	0	14	1
R	23	62	4	15	4
Total	38	130	4	29	5

Final contour

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Brunetti, Tovena, Yoo

27

Production experiment 1

Qualitative analysis : main findings

- <u>Bigger F0 range</u> for RQs
- <u>Breathiness</u>   **rhetorical**
- <u>Final rising and lengthening</u> for RQs
- Both LH* L% pattern, but with RQs :
  - *<u>f0 resetting</u>*
    - <u>slope on *comment*</u>

    expressivity

- « <u>cloche » contour</u> for RQs (Martin 1987, 2009)

    surprise

- Accent on the modal verb

- **Large inter-speaker and inter-item variability !**

Production experiment 2

Production experiment 2

Stimuli :

- 28 ambiguous *comment*-Qs, in a Manner or Reason context (cf. Exp.1);
- 14 unambiguously Manner *comment*-Qs, matching a Manner context ;
- 14 unambiguously Reason *comment*-Qs, Matching a Reason context ;
- 50 fillers

presented randomly in three different blocks

Task : read the written context then produce the target Qs, taking the context into account.

Participants : 30 French speakers with no reported speech disorders.

> Each participant read half of the corpus.
> To avoid experimental bias, each participant read only one utterance of each M vs R pair.

example of Ambiguous pair

Context

| Manner |

A friend of yours tells you that she is going to break up with her German boyfriend. You want to know <u>in what manner</u> she is going to do it, since he is in Germany at the moment. You tell her:

Manner

Et comment tu pourrais le quitter?
and how   you could   him leave
'And how could you break up with him?'
(C'est mieux si tu le lui dis en face)
'It's better if you tell him face to face'

Reason

A friend of yours tells you that she is going to break up with her German boyfriend. <u>You are very surprised</u>, for she has always said that he was the love of her life. You say:

Mais comment tu pourrais le quitter?!
   but how   you could him leave
'But how could you break up with him?!'
(C'est l'amour de ta vie!)
   'He is the love of your life!'

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Brunetti, Tovena, Yoo

example of NON-Ambiguous pair

Context

A friend of yours tells you that she is going to break up with her German boyfriend. You want to know <u>in what manner</u> she is going to do it, since he is in Germany at the moment. You tell her:

A friend of yours tells you that she is going to break up with her German boyfriend. <u>You are very surprised</u>, for she has always said that he was the love of her life. You say:

Manner

Comment vas-tu faire pour le quitter ?
how   go-you to-do for   him leave
'How are you going to do in order to break up with him?'

Reason

Comment peux-tu quitter un homme aussi adorable?!
how   can-you leave   a man   so sweet
'How can you break up with such a sweet man?'

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Experiment 2: qualitative analysis

Qualitative analysis of 12 speakers / 6 times the entire corpus.

Still great variability, mostly concerning reason-*comment* questions

Experiment 2: qualitative analysis

1N_A
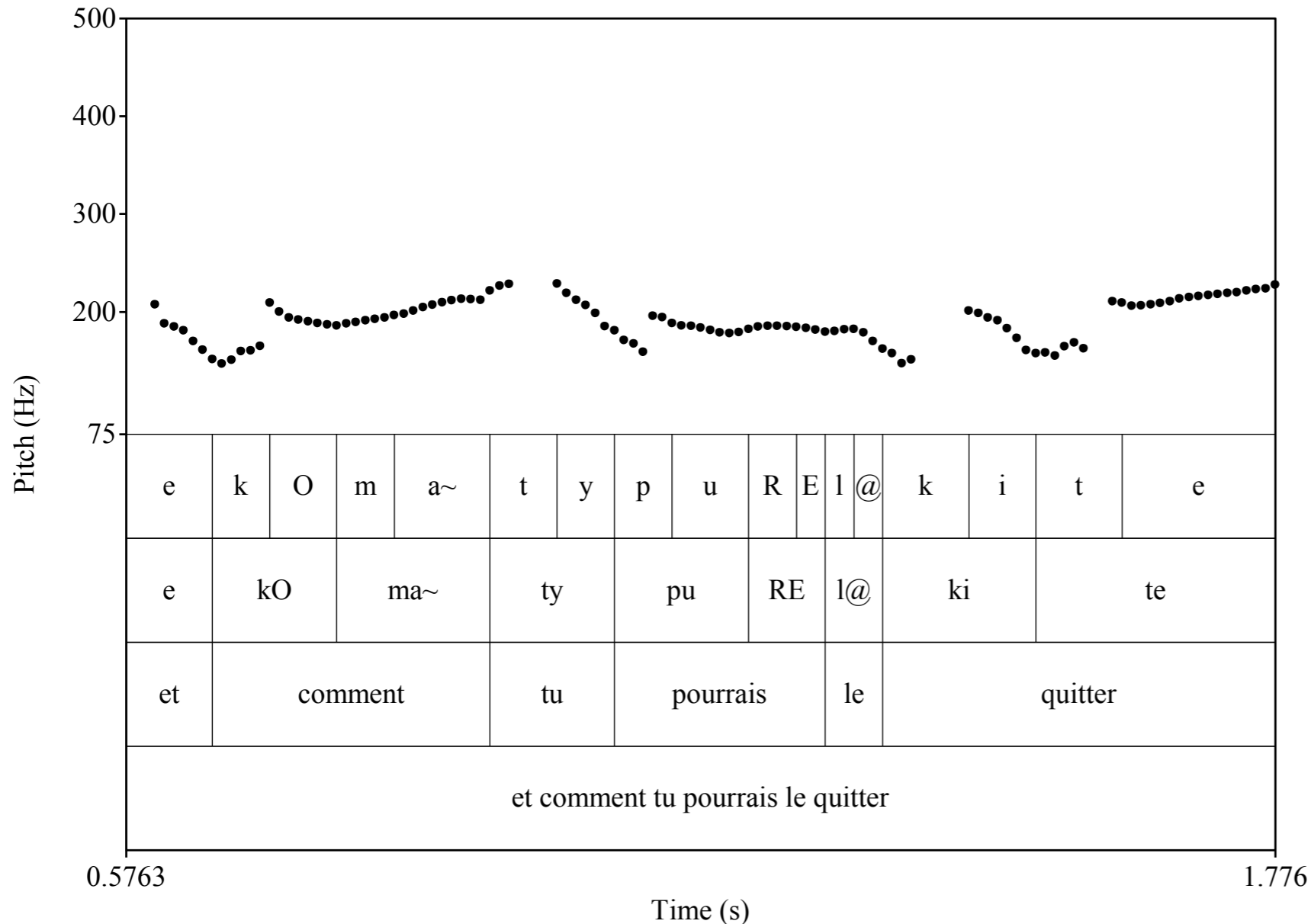
Ambiguous MANNER Q

- Contour : LH* L-H

- rise on *comment*

- final L target followed by a rise (for questioning illlocutory act)

Et comment tu pourrais le quitter?
And how could you break up with him?

1M_A (Noé)

Experiment 2: qualitative analysis

1M_NA
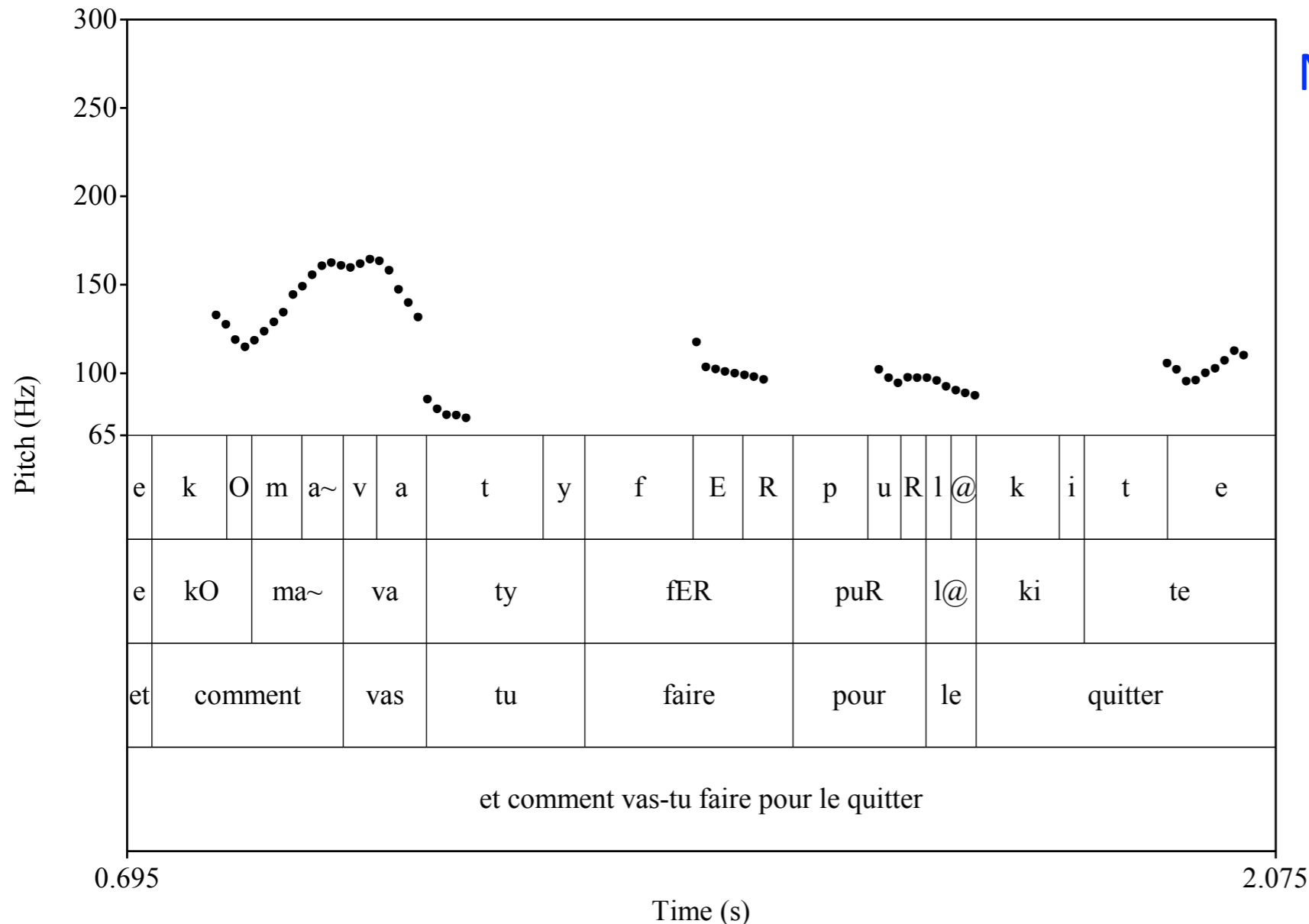
Non-Ambiguous MANNER Q

Contour : LH* L-H, and a visible and hearable final rise

Et comment vas-tu faire pour le quitter?
'And how are you going to do to break up with him?'

1M_NA (Ada)

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Brunetti, Tovena, Yoo

35

Experiment 2: qualitative analysis

Qualitative analysis of 12 speakers / 6 times the entire corpus.
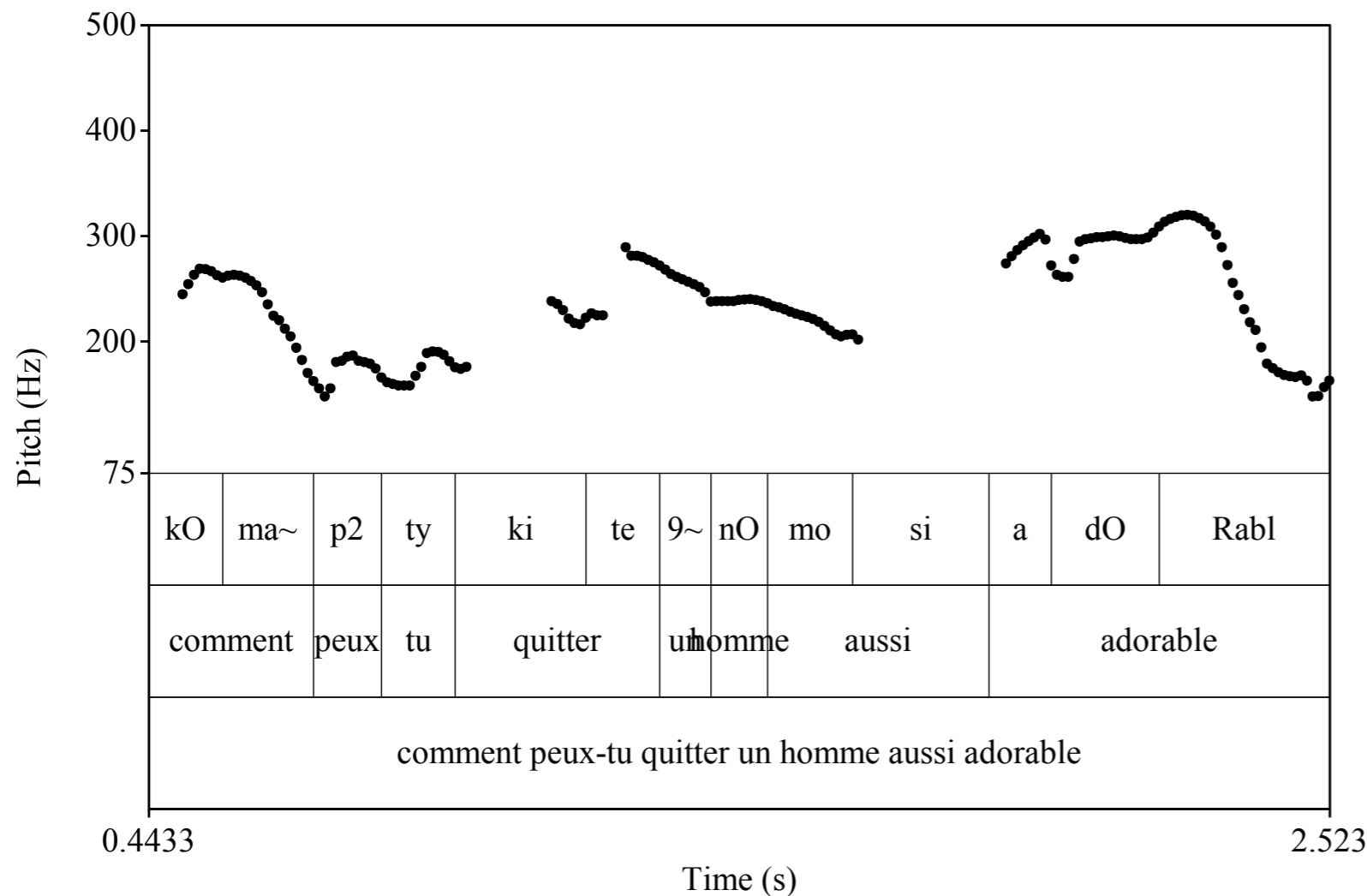
Non-ambiguous REASON Q

- steep fall on *comment*
- F0 resetting
- "bell" contour at the end
- plus final L% (absence of questioning)

=> overall expressivity

Comment peux-tu quitter un homme aussi adorable?
'How can you break up with such a sweet man?'

1R_NA (Noé)

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Brunetti, Tovena, Yoo

Experiment 2: qualitative analysis

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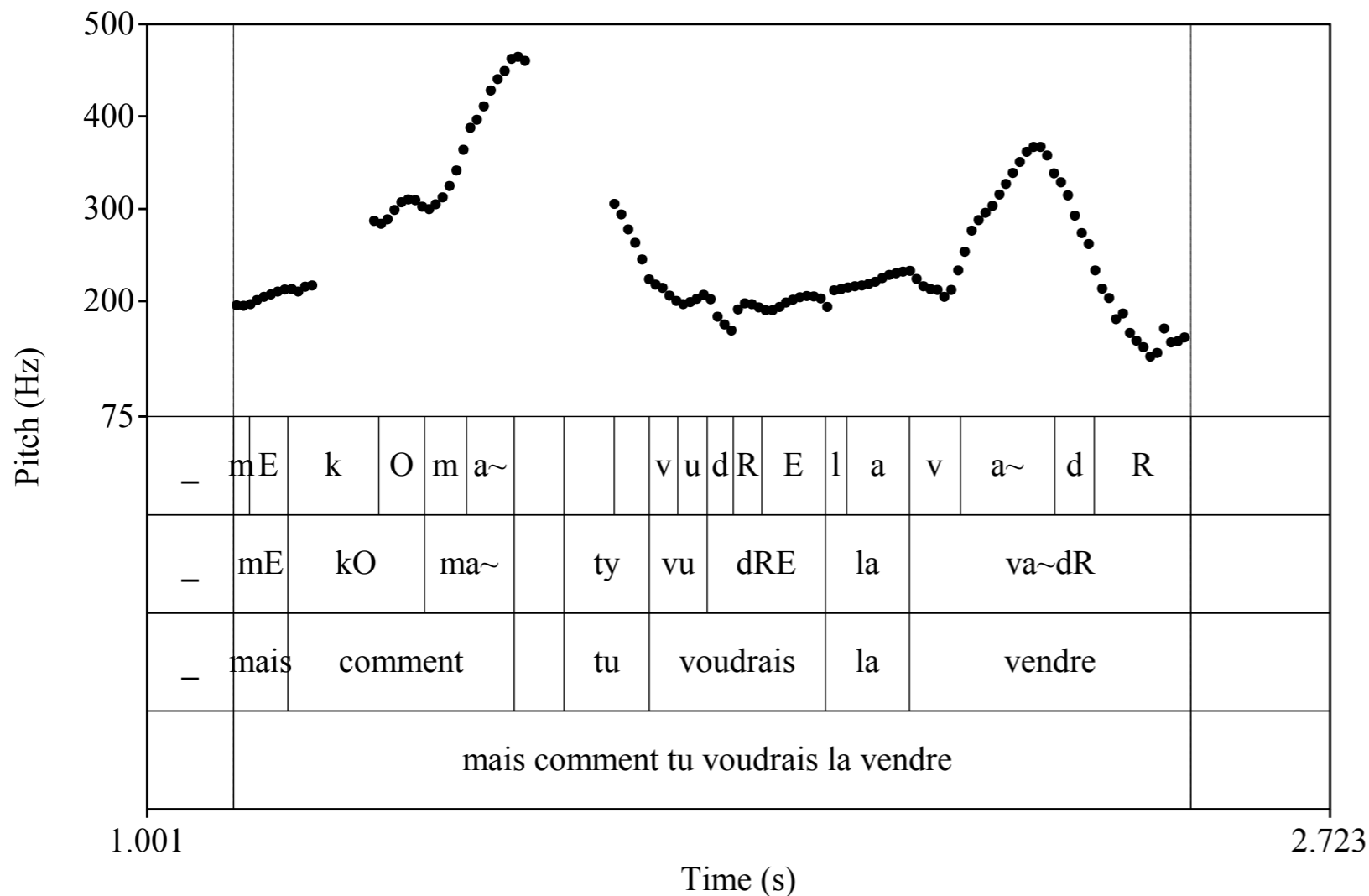
Ambiguous REASON Q

- H* on the last syllable of *comment*

- Small break between *comment* and the rest of the utterance

- Final « cloche » contour

Mais comment tu voudrais la vendre?
but how you would-like-to it selle
But how could you be willing to sell it?

Lisa 12RA

37

Experiment 2: qualitative analysis

Qualitative analysis of 12 speakers / 6 times the entire corpus.
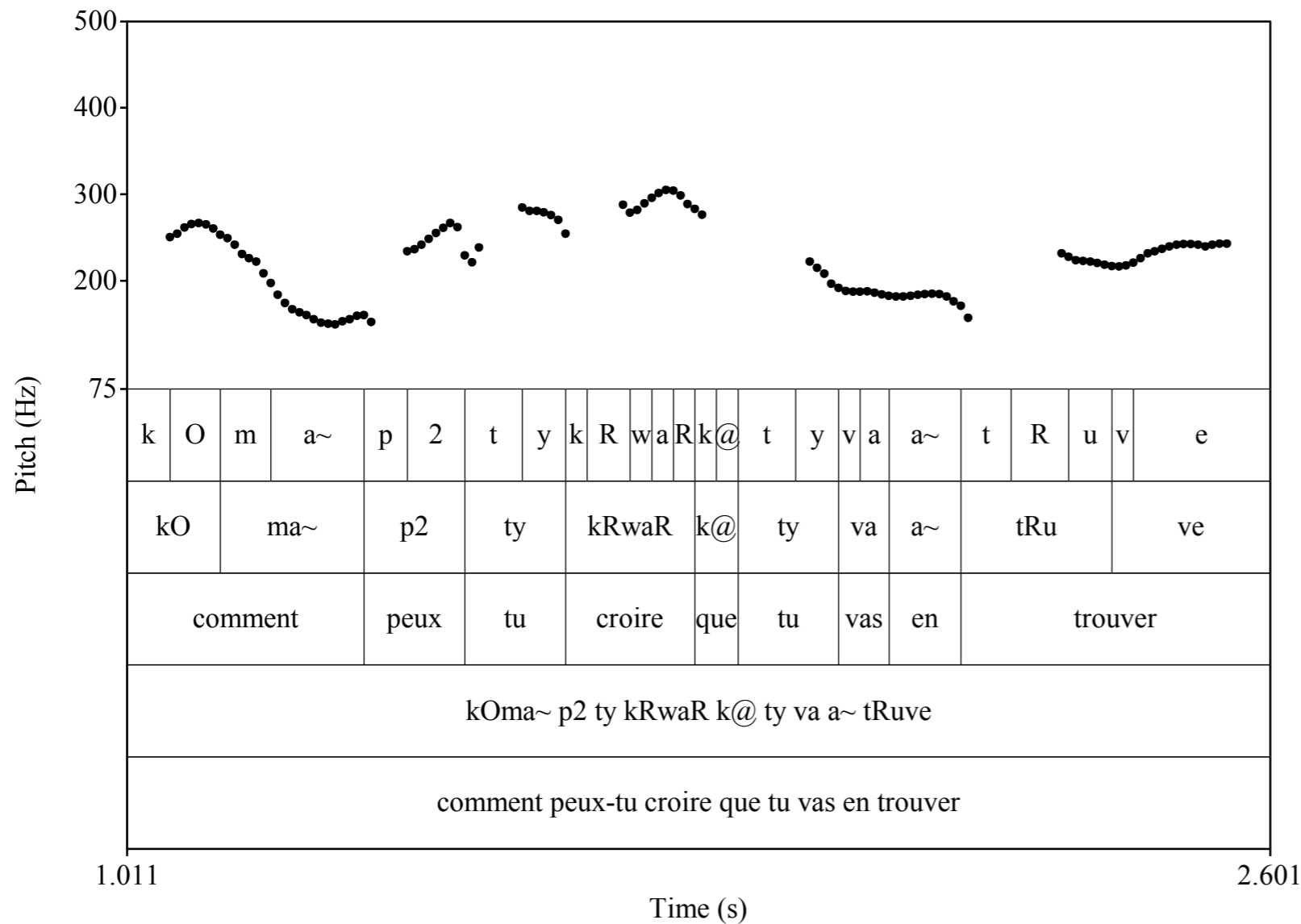
NON-Ambiguous REASON Q

-falling *comment* and accent on the modal
-final rise expressing emphasis

Comment peux-tu croire que tu vas en trouver?
How can you believe that you are going to find any?

11R_NA (Noé)

38

Experiment 2: qualitative analysis

Variability is still present in our data (cf. Delais et Beyssade 2015)

How to account for it?

Our suggestion:
Participants' interpretation of each RQ in context varies according to three degrees of distance between the speaker's and the hearer's beliefs about the truth of the prejacent.

Experiment 2: qualitative analysis

1. The speaker asks the hearer to give her$_S$ the reasons that make the prejacent true in his$_h$ epistemic state, since she$_S$ was expecting it to be false.

(10) Mais comment pourrait-il venir?
    'How could he come?'
     Il sait très bien que plus personne ne peut le supporter!
    'He knows very well that nobody can stand him anymore!'

(*paraphrase*: Why is he coming? I thought he would not come)

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Brunetti, Tovena, Yoo

Experiment 2: qualitative analysis

2. The speaker asks the hearer to give her$_S$ the reasons that make the prejacent true but is doubtful that such reasons exist.

(11) Comment peux-tu vouloir intégrer cette entreprise ?!
    'How can you be willing to join this firm?'

(*paraphrase*: Why do you want to join this firm? I doubt that it is what makes more sense for you.)

Experiment 2: qualitative analysis

3. The knowledge on which the speaker's expectation is based is taken not to be invalidated by a disconfirming prejacent. The question basically reasserts such knowledge and demotes the prejacent to some status of quirk of fate or despicable situation.
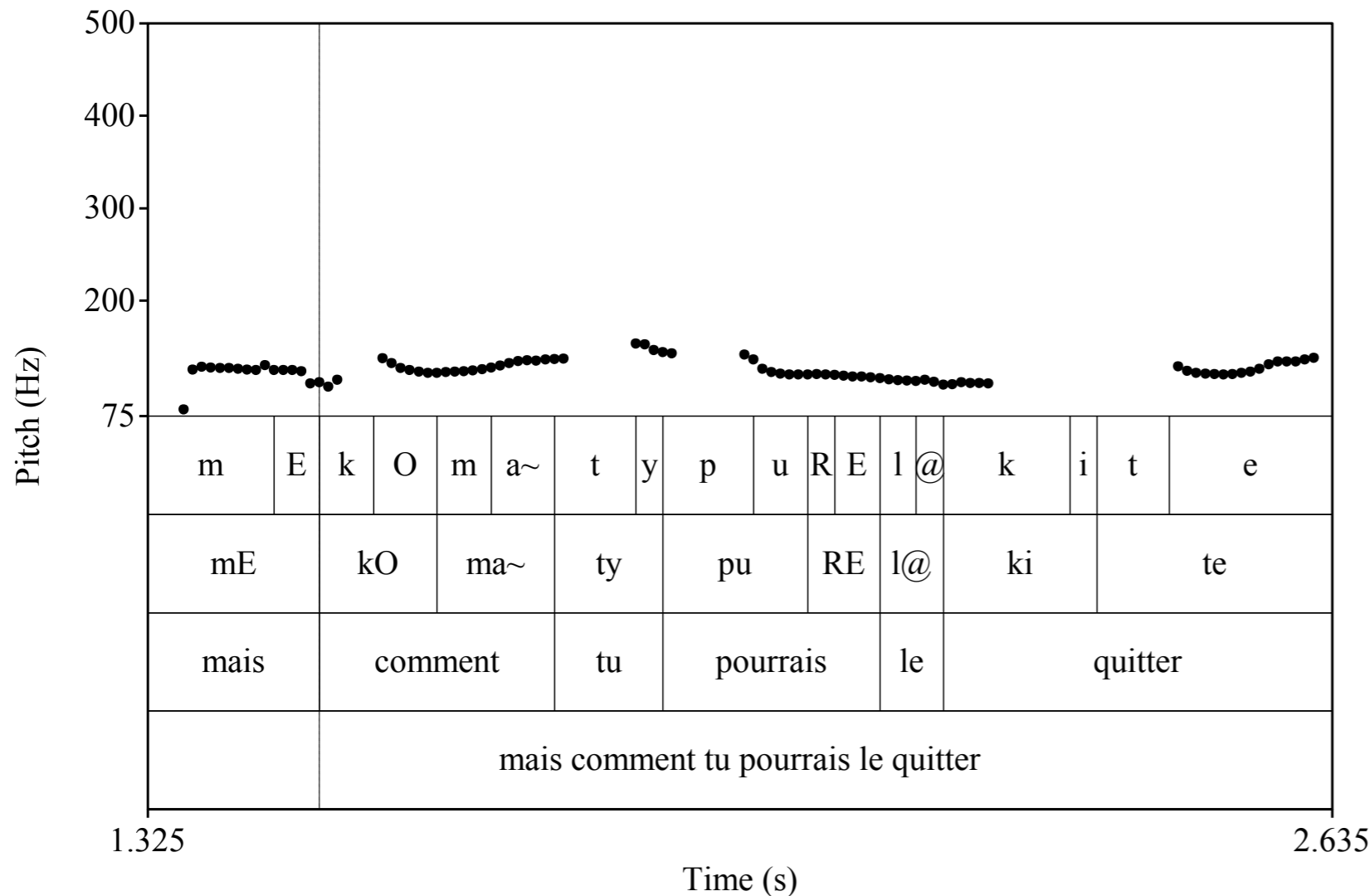
(12) Mais comment voudriez-vous faire le gâteau?! Vous ne savez
même pas faire cuire un oeuf!
'How could you make the cake?! You cannot even cook an egg!

(*paraphrase*: You cannot make the cake)

Experiment 2: qualitative analysis

[1] Very similar to the intonation of a Manner reading
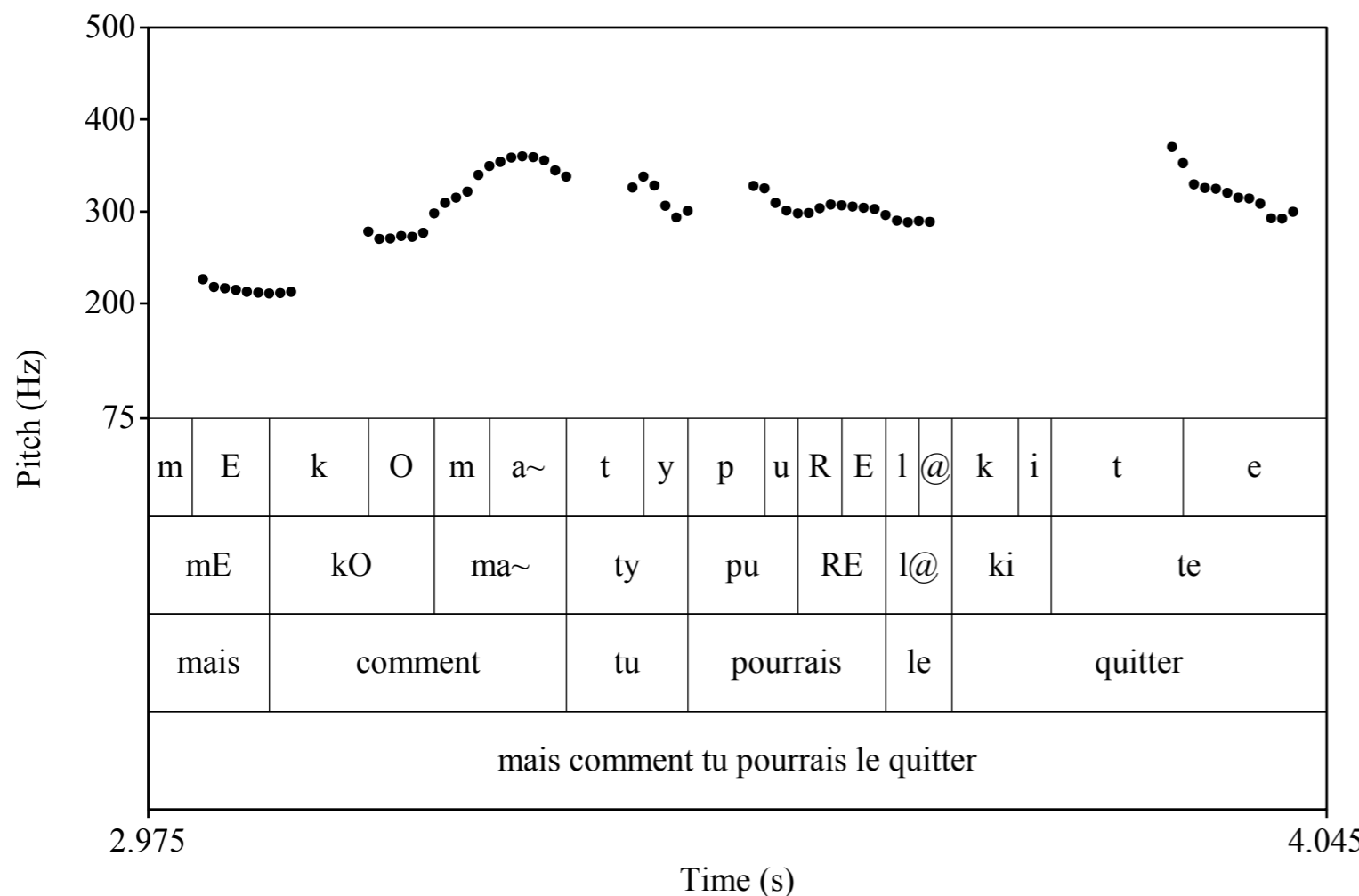

(Ambiguous) Reason Q

- LH* on *comment*
- final rise (questioning act) + final lengthening

Mais comment tu pourrais le quitter?
But how you could break up with him?

1R_A (Maxi)

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Brunetti, Tovena, Yoo

43

Experiment 2: qualitative analysis

[2] Overall pitch contour close to a Manner-Q reading, but different strategies in order to mark a difference (voice quality …)

(Ambiguous) Reason Q

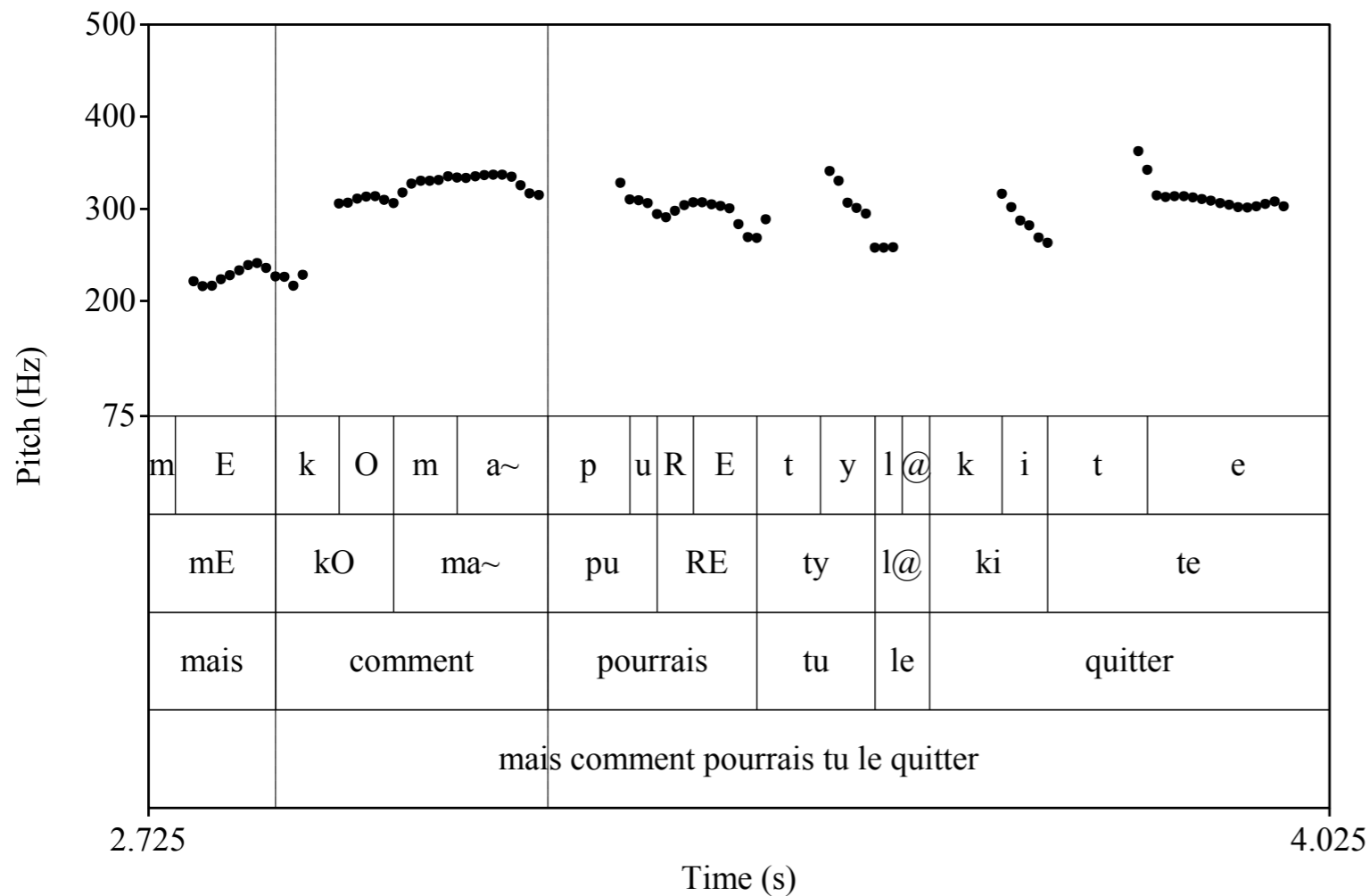- steeper rise on *comment* and final lengthening
- overall high f0 values

Mais comment tu pourrais le quitter?
But how you could break up with him?

1R_A (Céc)

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Brunetti, Tovena, Yoo

Experiment 2: qualitative analysis
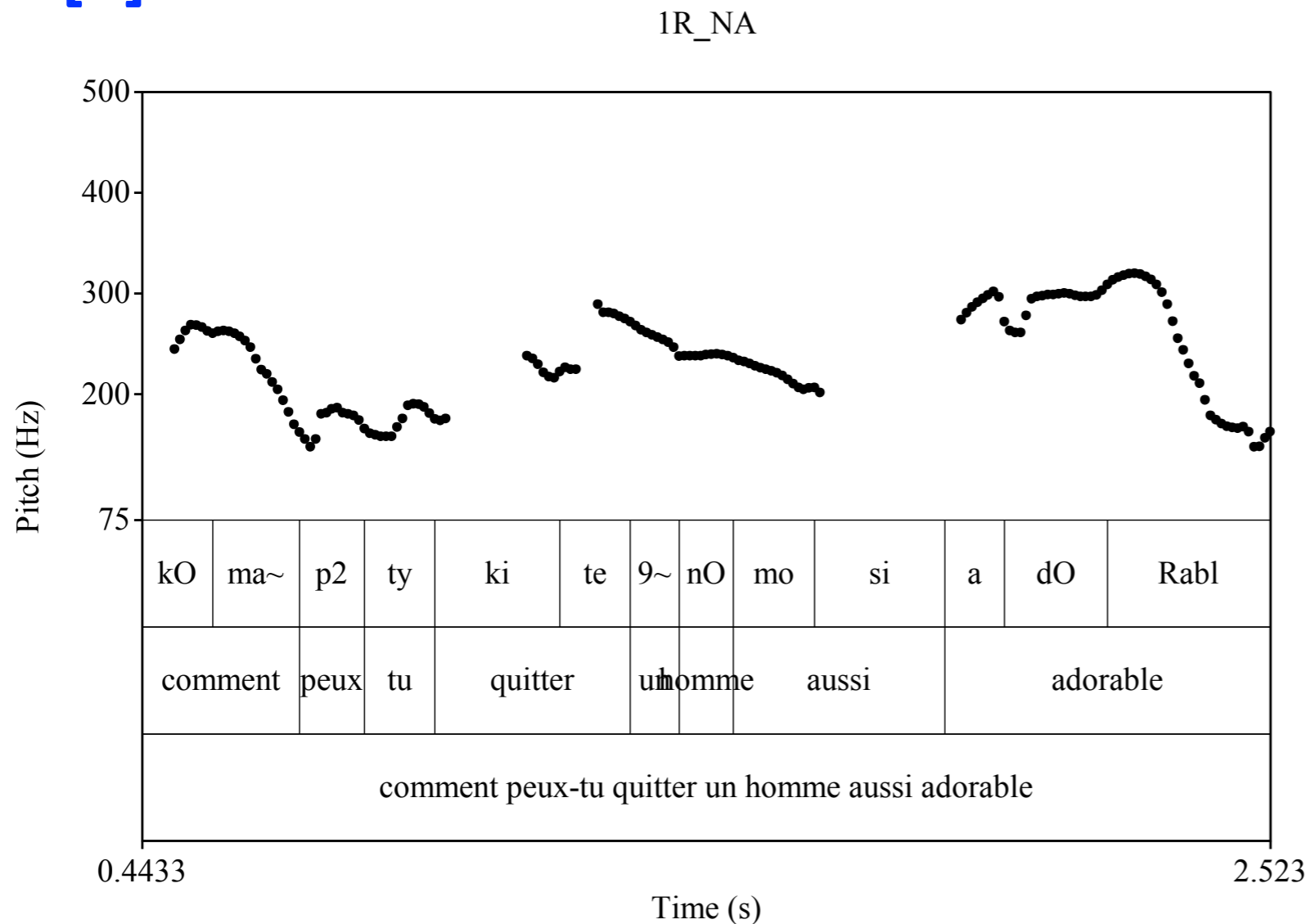
[2] or [3]

Valentine_1R_A

(Ambiguous) Reason Q

- higher pitch values than in [1] or even [2], forming a high plateau
- each breath group is clearly demarcated by a break or a stress at the end

Mais comment pourrais-tu le quitter?
But how could you break up with him?

1R_A (Val)

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Brunetti, Tovena, Yoo

Experiment 2: qualitative analysis

[3]

1R_NA

Non-ambiguous Reason Q

- steep fall on *comment*
- F0 resetting
- "bell" contour
- plus final L% (absence of questioning)

Comment peux-tu quitter un homme aussi adorable?
'How can you break up with such a sweet man?'

1R_NA (Noé)

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Brunetti, Tovena, Yoo

46

Conclusions and future work

Variability is given by:

- variation in strength of the speaker's expectation disconfirmation ([1], [2], [3])
- variation of the effect on the speaker of her expectation disconfirmation: surprise, indignation, fear, etc. (variation in expressivity)

Future work:

- Quantitative analysis
- Perception study

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Many thanks to :

- **Giusy Turco** for her help in the statistical analysis of experiment 1
- **Enzo Laurenti** for his help in the recording of experiment 2

…and thank YOU, gràcies, merci

(Comment ne pas vous remercier?)