Defocus Rephrasing:
Right dislocation and syntax-prosody mapping

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April 10, 2024

1 Introduction

Two goals

- ***Defocus***: Examine the role of focus, particularly the ***lack*** of focus, in syntax-prosody mapping.
- ***Variations***: Demonstrate that languages vary in the ***syntax-prosody mapping*** of right dislocation constructions.

Background

- One central question on the syntax-phonology interface: how syntactic structure are mapped onto prosodic domains (Selkirk 1978, 1984; Nespor and Vogel 1986; Pierrehumbert and Beckman 1988; Downing 1998; Ito and Mester 2012, *i.a.*):

(1) The Prosodic Hierarchy (Selkirk 1978, 2011)

Utt	Utterance		
IP/ι	**intonational phrase**	**—**	**CP (syntactic clause)**
PhP/ϕ	phonological phrase	—	XP (syntactic phrase)
PWd/ω	prosodic word	—	X (lexical head)
Ft/Σ	foot		
σ	syllable		

- And the conditions under which syntax-prosody mismatches arise.

Background (cont.)

- The prosodic role of focus has been long-recognized, e.g., *focal prominence* and *post-focal compression* (PFC) (e.g., Jackendoff 1972; Pierrehumbert and Beckman 1988)
- Debate on the whether focus triggers rephrasing:
  - **Rephrasing** view: focus = prosodic head
    (Pierrehumbert and Beckman 1988; Truckenbrodt 1995; Selkirk 2008, *i.a.*)
  - **No-Rephrasing** view: focus $\neq$ prosodic head
    (Féry and Ishihara 2010; Féry 2013; Ishihara 2011, 2016; Wu 2021)
    E.g., focus does not insert boundaries to block downstepping in Japanese; boundaries are not deleted in post-focal fields in English

← However, whether the structural **absence/lack** of focus, i.e., ***defocus/anti-focus***, has a separate prosodic role remains unknown.

Right dislocation (RD) in Cantonese and Mandarin

In RD, elements may right-dislocate to the end of the sentence, following SFPs (Cheung 2009, 2015; Tang 2015, 2018; Lee 2017, 2021; Lai 2019; Yip 2020, 2024).

(2) $\overbrace{[\ \ldots\ (\mathrm{XP}_i)\ \ldots\ \mathrm{SFP}\ ]}^{\textit{main chunk}}\ \overbrace{\mathrm{XP}_i}^{\textit{RD chunk}}$ (SFP=sentence-final particle)

RD elements either leave a gap (gapped RD) or an overt correlate in the main chunk (gapless RD).

(3) Gapped RD

a. [_ heoi-zo Meigwok laa3] **Aaming**. [C(antonese)]

b. [_ qu-le Meiguo le] **Xiaoming**. [M(andarin)]

go-PFV US SFP Ming

'Ming went to the US.'

(4) Gapless RD

a. [**Aaming** heoi-zo Meigwok laa3] **Aaming**! [C]

b. [**Xiaoming** qu-le Meiguo le] **Xiaoming**! [M]

Ming go-PFV US SFP Ming

'Ming went to the US!'

Why Cantonese and Mandarin?

- RD chunks as a structural manifestation of ***defocus***: systemic resistance of focus interpretation (Lee 2017, *cf.* Cheung 2009; Lee 2023)
- The ***lack*** of focus rephrasing effects:
  - Cantonese: No PFC (Wu and Xu 2010) ➜ no rephrasing by the *presence* of focus
  - Mandarin: e.g. phrasing effects on f_0 peak and duration are retained in post-focal fields (Zhang, Wagner, and Clayards 2021; Yuan 2022)

➜ Ideal testing ground to tease apart the prosodic effects of defocus from that of focus

Overview of the talk

Today, we argue for ...

(5) **#1** Syntax-prosody mismatch

a. Syntactic claim: RD in Chinese is ***biclausal***

b. Prosodic claim: RD in Chinese consists of ***one intonational phrase***

c. Interface claim: the mismatch is triggered by ***defocus*** (precisely, its inability to serve as a prosodic head)

(6) **#2** Variations in syntax-prosody mapping

a. Languages differ in whether the RD chunks are integrated with the main chunks:
   (i) ***Must*** be integrated (Cantonese/Mandarin);
   (ii) ***May*** be integrated (Japanese/Mongolian);
   (iii) ***Not*** integrated (French/Catalan);

b. The variations are due to a syntactic parameter and a prosodic parameter:
   (i) *Syntactic*: Whether ***focus projection*** is allowed in RD;
   (ii) *Prosodic*: Whether defocus can be a ***prosodic head***.

- **Road map**

§2: Defocus

§3: Syntax: biclausal

§4: Prosody: mono-ι

§5: Proposal

§6: Variations in mapping

§7: Conclusion

§8: Appendix

2 Defocus in right-dislocated structures

In the following, we will argue that:

Defocus: The RD chunks in Chinese project a DeFocP and resist focus interpretation.

The right-dislocated chunk is defocused

We follow Rooth (1992) and Krifka (2008) and conceive of "focus" as triggering alternatives in focus semantics. Examples include contrastive focus, *wh*-question-answer pairs, focus particles with their associates, etc.

(7) Focus triggers a set of alternatives.

- We distinguish focus from discourse-new elements (so-called information "focus") (see Kratzer and Selkirk 2020 for differences between the two notions).

#1 Contrastive focus with stress

Both gapped and gapless RD resist contrastive stress in RD chunks (Cheung 2015; Lee 2017, 2023).

(8) Contrastive focus (stress) (Cantonese)

a. Zoengsaam _ maai-zo gaa sance aa3 {***CAMJAT**$_F$/ ^{OK}camjat}.
Zoengsaam buy-PFV CL new.car SFP yesterday yesterday
Lit.: 'Zoengsaam bought a new car, *YESTERDAY/yesterday.'
(gapped RD, adapted from Lee 2017:68)

b. **Keoi wui** heoi jamngokwui gaa3 {***KEOI**$_F$ **wui**/ ***keoi WUI**$_F$/ ***KEOI WUI**$_F$/
3SG will go concert SFP 3SG will 3SG will 3SG will
^{OK}**keoi wui**}.
3SG will
Lit.: '(S)he will go to the concert, *(S)HE will/*(s)he WILL/*(S)HE WILL/(s)he will.'
(gapless RD, Cheung 2015:261)

#2 *Wh*-question-answer pairs

RD chunks also cannot be *wh*-words, or answers to a *wh*-constituent question (Cheung 2009; Chiang 2017; Lee 2017, 2020, 2023), both of which trigger alternatives (following Rooth 1992; Beck 2006).

(9) *Wh*-words (Mandarin)

*Zuotian {_/ **shei**} lai-le a **shei**?
yesterday who come-PFV SFP who
Lit.: '(Who) came yesterday, who?.' (Int.: 'Who came yesterday?')

(10) Answers to *wh*-questions (Mandarin)

a. Q: Zuotian shei lai-le a?
yesterday who come-PFV SFP
'Who came yesterday?'

b. *A: Zuotian {_/ **Lisi**} lai-le a **Lisi**.
yesterday Lisi come-PFV SFP Lisi
Lit.: '(Lisi) came yesterday, Lisi.'

#3 Focus particles with associates

RD chunks cannot accommodate focus particles with their associates, like exclusive focus 'only' (Lee 2020, 2023).

(11) 'Only' focus [C]

??[{ _/ **zinghai** **ngo**$_{F}$} maai-zo ni-bun syu zaa3] **zinghai** **ngo**$_{F}$.

only 1SG buy-PFV this-CL book SFP only 1SG

Int.: 'Only I bought this book.' (Lee 2023, ex.18)

A defocus projection

We follow Lee (2017, 2020) and posit a ***defocus*** projection (DeFocP) in RD.

(13) a. ***Defocus*** (also called *anti-focus*) refers to the systematic resistance to focus interpretation by certain elements.

b. It is manifested syntactically as a functional projection DeFocP that triggers movement of [-Foc] elements in RD chunks in Chinese.

- Comparable to (all of which ***resist*** focus interpretation):

(14) a. P-movement/scrambling in Spanish & Italian (Zubizarreta 1998)

b. Scrambling in West Germanic (Molnárfi 2002)

c. Object clitic doubling in Albanian and Greek (Kallulli 2000)

d. Subject/anti-focus markers in Bantu languages (Zeller 2008)

e. The "no-pause-type" RD in Japanese (Takano 2014)

- Note the language **variations**: RD in Japanese (pause considered), Korean, and Mongolian ***allows*** focus (see references in Lee 2023)
- This will play an important role when we proceed to variations in prosodic phrasing.

***Not* givenness!**

The notion of defocus is different from givenness. When the sentence receives a broad focus (e.g., the whole proposition is the answer to a question), the materials in RD chunks may accommodate new information (i.e., "my mum"):

(15) a. Q: Why were you so mad yesterday?

b. A: [{ _ / ngo Aamaa} dalaan-zo ngo zik zip lo1] **ngo Aamaa**. (GRD/DC) [C]
1SG Mum break-PFV 1SG CL plate SFP 1SG Mum

c. A: [{ _ / wo Mama} dapo-le wo-de diezi a] **wo Mama**. (GRD/DC) [M]
1SG Mum break-PFV 1SG-DE plate SFP 1SG Mum
(b-c): '(My mum) broke my plate, my mum.'

- See also Cat (2007) for a similar point on French RD.

3 Syntax: RD is biclausal

In the following, we will argue that:

RD underlyingly has ***two*** CPs (i.e., a **biclausal** structure)

Where the second clause involves movement and deletion, following the proposals by Cheung (2015), Tang (2015, 2018), Chan (2016), Y. Chen (2016), and Yip (2024).

(*contra.* monoclasual proposals like Cheung 2009; Chiang 2017; Lee 2017, 2021; Lai 2019; Yip 2020)

(16) *main chunk* [$_{\text{CP1}}$ ... {e_i / XP_i} ... SFP] *RD chunk* [$_{\text{CP2}}$ [$_{\text{DeFocP}}$ XP_i [... t_{XP} ...]]]

(e = empty category, gray = non-pronunciation)

A typological consideration

(17) Correlation between gapped argumental RD and null arguments (subject/object)

a. Languages that ***disallow*** null arguments also ***disallow*** argumental gaps in RD (e.g., Germanic languages like Dutch/German, Ott and de Vries 2016)

b. Languages that ***allow*** null arguments also ***allow*** argumental gaps in RD (e.g., Chinese, Japanese, Korean; see Tanaka 2001; Park and Kim 2009; Yip 2024)

- This correlation is captured by the availability of ***empty categories*** in the first clause under a ***biclausal*** approach.
- Otherwise surprising, under a *monoclasual* approach.

Gapless RD is biclausal

The RD chunks need not be identical to their correlates in the main chunks ("imperfect copying", Cheung 2015). There are even RD cases that lack a monoclausal source, such as cases with epithets:

(18) Imperfect copying that lacks a monoclausal source [C, same in M]

a. [$_{DP}$ **Go-gaa** [$_{NP}$ **hungsik-ge** **paauce**]]$_i$ sei-zo fo aa1maa3 [$_{DP}$ ***go-gaa*** [$_{NP}$ ***je***]]$_i$!
that-CL red-GE sport.car die-PFV fire SFP that-CL thing
Lit.:'That red sport car stalled, that thing!'

b. *[$_{DP}$ **Go-gaa** [$_{NP}$ **hungsik-ge** (***je***) **paauce** (***je***)]]
that-CL red-GE thing sport.car thing

One would need to say the RD chunk originates from a different clause.

(19) [$_{CP1}$ That red sport car$_i$ stalled SFP] [$_{CP2}$ that thing$_i$ [...]]

For four other arguments for *gapped* RD being biclausal, see Yip (2024).

Manuscript available on Lingbuzz: https://lingbuzz.net/lingbuzz/007912

4 Prosody: RD forms one intonational phrase

In the following, we argue for:

(20) The prosodic phrasing of RD (only ι shown):

Two clauses, one intonational phrase (ι) (shaded=mismatched boundaries)

[$_{CP1}$ main chunk [$_{C'}$ SFP]] [$_{CP2}$ [$_{DefocusP}$ RD chunk]]

( )ι

In other words, there is a syntax-prosody mismatch in RD.

Three pieces of evidence:

(21) a. Phonological: boundary tone placement in Cantonese

b. Phonological: tone sandhi in Mandarin

c. Phonetic: acoustic experiments in Cantonese and Mandarin

4.1 Placement of boundary tones in Cantonese

Cantonese has a boundary tone LH% in questions, which can only occur at the right edges of intonational phrases. It realizes as local F0 rising on the last syllable (Wong, Chan, and Beckman 2005; Xu and Mok 2011; Zhang 2014).

(22) (Mingzai wui heoi Mei**gwok**)$_{\iota}$**LH%** ?
Ming will go US
'Will Ming go to the US?'

It is degraded to place boundary tones such as LH% in RD (Yip 2020), in contrast to question particle *aa4*. This is expected if RD constitutes one ι and there is no ι boundary before the RD chunk.

(23) Placement of LH% question intonation in Cantonese

a. *Gapped RD*

[_ wui heoi Mei**gwok** {***LH%/ aa4**}]? keoi
will go US SFP 3SG
'Will s/he go to the US?'

b. *Gapless RD*

[Keoi wui heoi Mei**gwok** {***LH%/ aa4**}]? keoi
3SG will go US SFP 3SG
'Will s/he go to the US?'

Cantonese offers *negative* evidence from boundary tones:

➜ showing **absence** of *right* ι boundaries before the RD chunk

➜ In other words, the main chunk does *not* form a separate ι excluding the RD chunk, rather, it forms an ι together with the RD chunk.

(24) $[_{CP1}$ main chunk $[_{C'}$ SFP $]$ $]$ $[_{CP2}$ $[_{DefocusP}$ RD chunk $]$ $]$

$\iota_1($ ~~$)\iota_I$~~ ~~$t_2($~~ $)\iota_2$

↑

✘ LH%

4.2 Tone 3 sandhi in Mandarin

Mandarin offers another type of phonological evidence: **third tone sandhi**. T3 sandhi applies to consecutive T3, where the first one changes from a low tone to a rising tone, similar to the contour of tone 2 (Shih 1986, 1997; M. Y. Chen 2000, *i.a.*).

(25) Tone 3 sandhi in Mandarin

a. T3-T3 → **sT2**-T3
[21]-[21] → **[35]**-[21]
L-L → **LH**-L

b. 'alcoholic, lit. wine-ghost'
jiu3-gui3 → **jiu2**-gui3
[21]-[21] → **[35]**-[21]

Mandarin T3 sandhi may apply across *phonological phrase ϕ boundaries*, such as a subject-VP juncture, but ***not*** *across ι boundaries*, such as a clausal juncture between adverbial and main clauses.

(26) Tone 3 sandhi can apply across a subject-VP juncture

[$_{CP}$ Zuo2-tian1 [$_{Subj}$ na4-xiang1 shao1-**jiu3**$^{[21>35]}$] [$_{VP}$ **shao3**$^{[21]}$-le0 yi1-ping2]]

ϕ_1( )ϕ_1 ϕ_2( )ϕ_2

yesterday that-box Soju miss-PFV one-bottle

'Yesterday, one bottle of Soju went missing from that box of Soju.'

(27) Tone 3 sandhi is not possible across clausal boundaries in complex sentences

[$_{CP}$ Lao3-Wang2 shuo1 yao4 jin1-tian1 **zou3**$^{[21/*35]}$], [$_{CP}$ **ke3**$^{[21]}$-shi4 mei2 zou3 cheng2]

ι_1( )ι_1 ι_2( )ι_2

Old Wang say want today leave but didn't leave succeed

'Old Wang said that he wanted to leave today, but it didn't work out.' (Shih 1997:100)

➜ we can test the juncture strength between the main chunk and the RD chunk by applying T3 sandhi

T3 sandhi is **allowed** in gapped and gapless RD.

(28) Tone 3 sandhi in Mandarin RD and DC

a. *Gapped RD*

_ xǐhuān hē **jiǔ**[21>35] **Lǎo**[21]wáng

like drink wine Laowang

Lit.: 'likes drinking wine, Laowang.'

b. *Gapless RD*

Lǎowáng xǐhuān hē **jiǔ**[21>35] **Lǎo**[21]wáng

Laowang like drink wine Laowang

Lit.: 'Laowang likes drinking wine, Laowang.'

Mandarin offers *positive* evidence from tone 3 sandhi:

➜ showing **absence** of both *left* and *right* ι boundaries before the RD chunk

➜ the RD chunk does not form a separate ι, but rather, it forms a ι together with the main chunk.

(29) [$_{CP1}$ main chunk [$_{C'}$ SFP]] [$_{CP2}$ [$_{DefocusP}$ RD chunk]]

ι_1(~~)ι_T~~ ~~ι_2(~~)ι_2

↑ ↑

✔ T3 sandhi

4.3 Acoustic evidence in both languages

- Prosodic structure should be reflected phonetically.
- Three prosodic cues for intonational phrase boundaries (Cantonese: Chow 2005a, 2006, 2008; Li 2017; Mandarin: Yang and Wang 2002; Chow 2005b):

(30) [$_{CP1}$ main chunk [$_{C'}$ SFP]] [$_{CP2}$ [$_{DefocusP}$ RD chunk]]

ι( )? ?( )ι

↑ ↑ ↑

final lengthening? pause? pitch reset?

Design

Stimuli:

- A 2x2 factorial design, differing in number of syllables (short=9 vs. long=11) and word order (canonical vs. right-dislocated) (number of syllables indicated by σ).
- Target sentences: 12 lexical sets x 4 conditions = 48 (plus 24 fillers)

	Short	**Long**
Canonical	*MonoCl*: **$S_{σσ}$ $Adv_{σσ}$ $V_{σσ}$ $O_{σσ}$ $SFP_{σ}$**	*BiCl*: **$S_{σσ}$ $Adv_{σσ}$ $V_{σσ}$ $O_{σσ}$ $SFP_{σ}$, $S_{σσ}$** Adv V O SFP
Right-dislocated	*RD*: **$Adv_{σσ}$ $V_{σσ}$ $O_{σσ}$ $SFP_{σ}$ $S_{σσ}$**	*DC*: **$S_{σσ}$ $Adv_{σσ}$ $V_{σσ}$ $O_{σσ}$ $SFP_{σ}$ $S_{σσ}$**

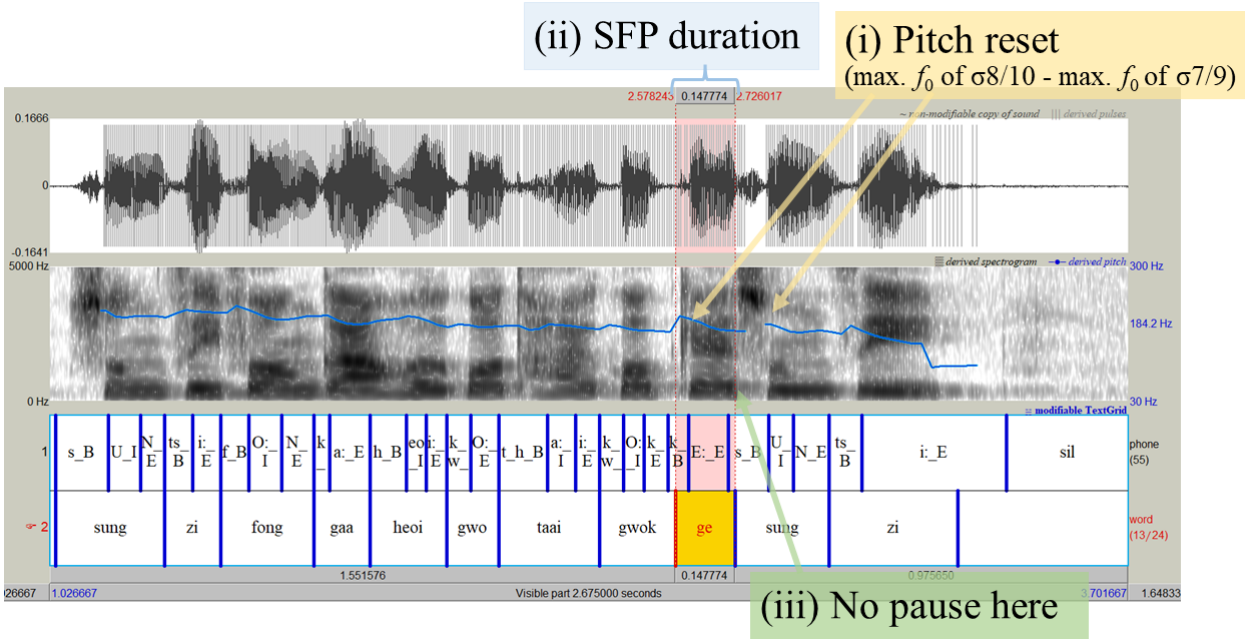
Participants: 13 native speakers of Cantonese (F: 7), 13 native speakers of Northern Mandarin (F: 9)

➜ Total: 4 conditions x 12 lexical sets x 3 repetitions x 13 subjects x 2 languages = 3744 tokens

Note: RD=gapped RD; DC=gapless RD

Forced aligned (Cantonese: Lee & Tao 2021; Mandarin: Charsiu, `https://github.com/lingjzhu/charsiu`)

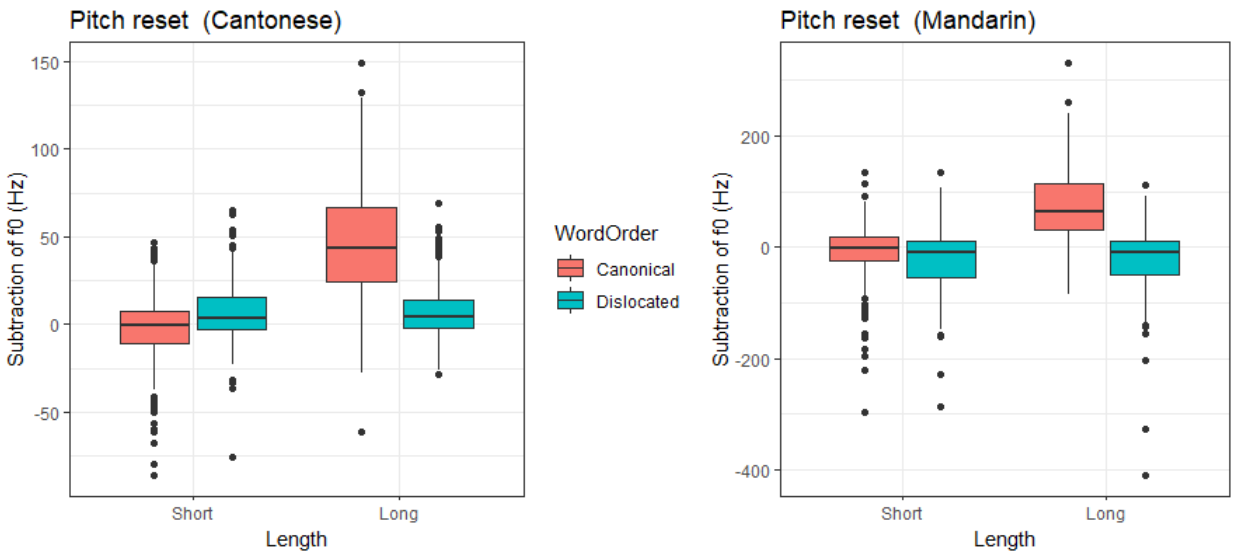
➜ manual correction in Praat ➜ acoustic measurement using ProsodyPro (Xu 2005)



Results: (i) Pitch reset

- Linear mixed effects regression model for each language
  `Reset~Length*WordOrder+(1+Length*WordOrder|Participant)+(1|Set)+(1|Trial)`
  - `Length`: significant ($p < 0.001$ for both)
  - `WordOrder`: N.S. in Cantonese, significant in Mandarin ($p < 0.05$)
  - `Length*WordOrder`: significant ($p < 0.001$ for both)

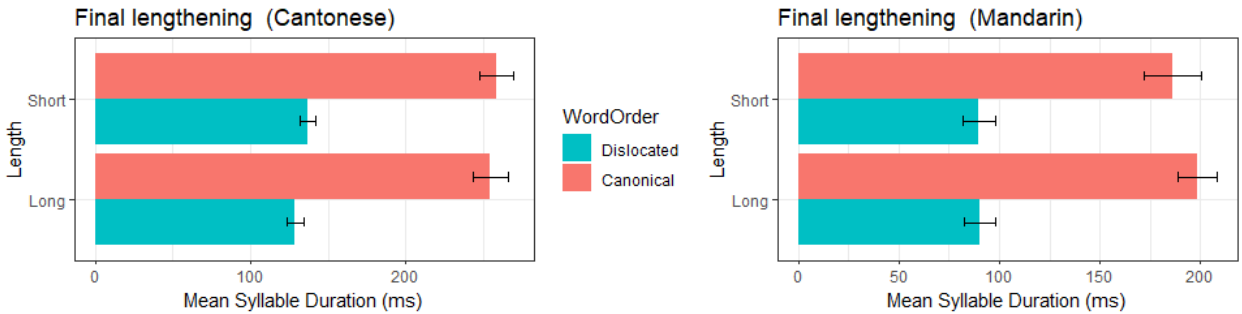
➜ **No pitch reset at the RD chunks**



Results: (ii) Final/preboundary Lengthening

- Linear mixed effects regression model for each language
  `SyllableDuration~Length*WordOrder+(1+Length*WordOrder|Participant)+(1|Set)+(1|Trial)`
  - `Length`: N.S. in Cantonese, significant in Mandarin ($p < 0.01$)
  - `WordOrder`: significant ($p < 0.001$ for both)
  - `Length*WordOrder`: N.S. in Cantonese, significant in Mandarin ($p < 0.01$)

➜ **No final lengthening of the SFPs before RD chunks**



Results: (iii) Pause

- All canonical biclausal sentences have pauses (mean: 431ms in Cantonese, 245ms in Mandarin)
- All canonical monoclausal sentences lack pauses
- For RD sentences, only 8 tokens in Cantonese (0.008%) have a pause (mean: 64 ms)

➜ **No pauses between the main chunks and RD chunks**

Interim summary

(31) [$_{CP1}$ main chunk [$_{C'}$ SFP]] [$_{CP2}$ [$_{DefocusP}$ RD chunk]]

ι( )? ?( )ι

↑ ↑ ↑

final lengthening? *pause?* *pitch reset?*

NO **NO** **NO**

(32) A **syntax-prosody mismatch** in Cantonese and Mandarin RD: two CPs, yet one ι.

[$_{CP1}$ main chunk [$_{C'}$ SFP]] [$_{CP2}$ [$_{DefocusP}$ RD chunk]]

ι( )ι

5 Proposal: Defocus rephrasing

We propose that ***defocus*** is the (indirect) source of mismatch. The RD chunk, being defocused, leads to an illegitimate ***headless*** ι. To avoid headless prosodic constituents, the RD chunk is parsed with the main chunk as one ι, deriving the mismatch.

(33) Defocus elements ➜ No prominence ➜ Headless ι ➜ Rephrasing

Separating the role of ***defocus*** from that of ***focus*** in prosody.

Recall that focus in Cantonese and Mandarin does not trigger prosodic rephrasing.

- **Cantonese**: No post-focal compression (Wu and Xu 2010) ➜ no rephrasing by *presence* of focus
- **Mandarin**: e.g. phrasing effects on F0 peak and duration are retained in post-focal fields (Zhang, Wagner, and Clayards 2021; Yuan 2022)
- PFC in other languages have also been argued to ***not*** trigger rephrasing (no boundary insertion in Japanese, Ishihara 2011, 2016; no boundary deletion in English, Wu 2021)

➜ The mismatch in RD **cannot** be attributed to the potential focus carried by the main chunk.

Defocus rephrasing

We propose that the mismatch arises from the interaction between three OT constraints.

(i) Defocus must ***not*** receive *head* prominence, formulated in (34) as DEFOCUS. Df refers to the element with the [-Foc] syntactic feature.

(34) **DEFOC(US) (Head prominence-based)**
Let Df be a defocus element and PDf be the highest prosodic constituent in the output corresponding to Df. Assign a violation mark if PDf is a prosodic head and a daughter of a higher prosodic category or a higher projection of the same category as PDf.

- A mirror constraint to Truckenbrodt (1995)'s FOCUS or Féry (2013)'s ALIGN-FOCUS.
- Defocus ≠ givenness ➜ DEFOC is different from deaccenting discourse-given phrases (e.g., Féry 2013's Destress-Given or Kratzer and Selkirk 2020's DephraseGiven)

(ii) Every ι must be headed (Selkirk 1996; Elordieta and Selkirk 2018; see Feng 2019 for Chinese).

(35) **IntonationalPhrase:Head (ι:HEAD)**

An intonational phrase must have at least one daughter constituent designated as its head.

(iii) Constraints on syntax-prosody mapping on the clausal/ι level.

(36) **MATCH(CP,ι)** (after Selkirk 2011)

The left and right edges of a CP in the input syntactic representation must correspond to the left and right edges of an intonational phrase in the output phonological representation.

We propose that DEFOC(US) and ι:HEAD are ranked higher than MATCH(CP,ι) in Chinese:

(37) **defocus** triggers rephrasing

{ι:H,DEFOC} » MATCH(CP,ι) » AL-FOC

focus does *not* trigger rephrasing

(38) Rephrasing triggered by headless ι

$[_{CP1}$ ZP YP$]_i$ $[_{CP2}$ $[_{DeFocP}$ ZP_{Dfk} $]$ ~~YP~~$]_j$	ι:H	DEFOC	MATCH(CP,ι)
a. ((ZP)$_\phi$ (YP)$_\phi$)$_{\iota i}$ ((ZP)$_{\phi k}$)$_{\iota j}$	*!		
b. ((ZP)$_\phi$ (YP)$_\phi$)$_{\iota i}$ ((ZP)$_{\phi k}$)$_{\iota j}$		*!	
☞ c. ((ZP)$_\phi$ **((YP)**$_\phi$ (ZP)$_{\phi k}$)$_{\phi.max}$)$_\iota$			**

(where ι's prosodic head is underlined, and ϕ_{max}'s prosodic head is **bolded**)

Degree of integration

(39) Degree of integration (from low to high) (RD chunk = italicized *ZP*)

a. Unparsed: ((ZP)$_{\phi}$ (YP)$_{\phi}$)$_{\iota}$ (*ZP*)$_{\phi}$ *illicit*

b. **Recusrive ι: (((ZP)$_{\phi}$ (YP)$_{\phi}$)$_{\iota}$ (*ZP*)$_{\phi}$)$_{\iota.max}$** ***illicit***

c. Separated ϕ: ((ZP)$_{\phi}$ (YP)$_{\phi}$ (*ZP*)$_{\phi}$)$_{\iota}$ *illicit*

d. **Recusrive ϕ: ((ZP)$_{\phi}$ ((YP)$_{\phi}$ (*ZP*)$_{\phi}$)$_{\phi.max}$)$_{\iota}$** ***the proposed one***

e. Smaller than ϕ: ((ZP)$_{\phi}$ (YP *ZP*)$_{\phi}$)$_{\iota}$ *an alternative*

(iv) Chinese ι is right-headed

(right boundary tones in Cantonese; nuclear stress assigned to the rightmost ϕ in Mandarin, Feng 2019:65).

(40) a. **ALIGN(ι,RIGHT,HEAD(ι),RIGHT)**, abbreviated as AL-ι-R

Align the right edge of each intonational phrase with the right edge of its head Head(ι).

b. AL-ι-R » MATCH(CP,ι)

(41) Against ι recursion

$[_{CP1}$ ZP YP$]_i$ $[_{CP2}$ $[_{DeFocP}$ ZP_{Dfk}] ~~YP~~$]_j$	PAR	ι:H	DEFOC	AL-ι-R	MATCH(CP,ι)
☞ a. ((ZP)$_\phi$ **((YP)**$_\phi$ (ZP)$_{\phi k}$)$_{\phi.max}$)$_\iota$					**
b. (((ZP)$_\phi$ (YP)$_\phi$)$_{\iota i}$ (ZP)$_{\phi k}$)$_{\iota.max}$		*!			*
c. (((ZP)$_\phi$ (YP)$_\phi$)$_{\iota i}$ (ZP)$_{\phi k}$)$_{\iota.max}$			*!		*
d. (((ZP)$_\phi$ (YP)$_\phi$)$_{\iota i}$ (ZP)$_{\phi k}$)$_{\iota.max}$				*!	*

Other illicit possibilities:

Unparsed is ruled out by PARSE » MATCH(CP,ι); Separated ϕ is ruled out by AL-ι-R » MATCH(CP,ι)

6 Variations in syntax-prosody mapping

The proposed DEFOCUS REPHRASING view predicts a factorial typology of RD, varying in two parameters: one on DeFocP, another one on the ranking of DEFOC (setting ι:H aside):

(42) a. A *syntactic* parameter: whether DeFocP is obligatory or optional in right dislocation

b. A *phonological* parameter: whether DEFOCUS is ranked higher or lower than MATCH(CP,ι)

French and Catalan

- Like Cantonese/Mandarin, alternative-based focus is ***banned*** in RD in French (Lambrecht 1981: *'only', *'also', *'even', etc.) and Catalan (Vallduvi 1995).
- Argued to be ***biclausal*** (Fernández-Sánchez 2017).
- Interestingly, their RD chunks **form their own** ι in French (Ladd 1996:121, Delais-Roussarie, Doetjes, and Sleeman 2004) and Catalan branching RD (Feldhausen 2010)

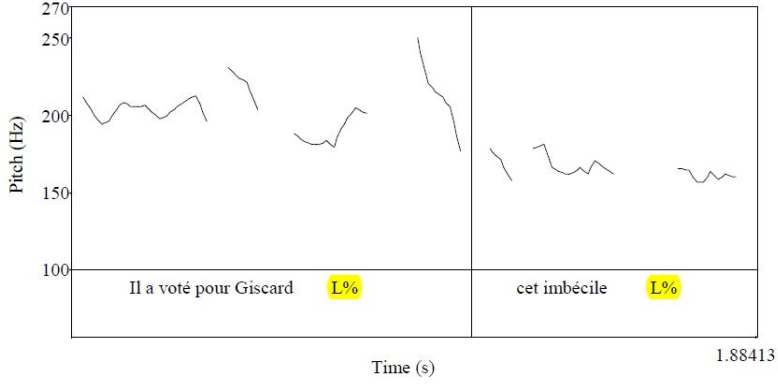
  Note on Catalan: ϕ for non-branching RD, but the main chunk crucially is still its own ι

In French, the boundary tone on the main chunk is “copied” to the RD chunk (including L% and H%).

(43) French RD consists of two ι (Delais-Roussarie, Doetjes, and Sleeman 2004:520,523)

(J’ai vu mon frère hier.) Ili a voté pour Giscard, cet imbecilei.

‘(I have seen my brother yesterday.) He has voted for G., that idiot’



Assuming a higher ranking of MATCH(CP,ι) over DEFOC captures the syntax-prosody isomorphism in French/Catalan (setting aside ι:H):

(44) RD in French and Catalan

a. *Syntactic projection*: only DeFocP ([-Foc])
(= Cantonese/Mandarin)

b. *Prosodic constraint ranking*: ι:H » **MATCH(CP,ι)** » **DEFOC**
(≠ Cantonese/Mandarin)

Japanese and Mongolian

Focus is allowed in Japanese and Mongolian RD (Yamashita 2011; Takita 2011; Abe 2019; Lee 2023).

(45) 'Only' focus (subject/nominative) (Japanese)

tanaka-ni hon-o age-ta yo watashi-**dake**-ga.
tanaka-DAT book-ACC give-PST SFP 1SG-ONLY-NOM
Lit.: 'Gave Tanaka the book/books, only I.'

(46) 'Even' focus (indirect object/dative) (Japanese)

watashi-ga hon-o age-ta yo tanaka-ni-**mo**.
1SG-NOM book-ACC give-PST SFP 1SG-DAT-EVEN
Lit.: 'I gave the book/books, even to Tanaka.'

- Shows Case connectivity - thus cannot be afterthoughts (*cf.* Ott and de Vries 2016).
- Argued to be biclausal (Abe 1999, 2019; Tanaka 2001; Yamashita 2011; Lee 2023)

Nakagawa, Asao, and Nagaya (2008) on *information* focus in RD: RD chunks with new information tend to be ***dis****integrated* from the main chunks.

Our ***preliminary*** exploration on the prosodic phrasing w.r.t. alternative-based focus:

(47) a. No pause with defocus in RD-chunks (Japanese)

tanaka-ni hon-o age-ta yo watashi-wa.

Tanaka-DAT book-ACC give-PST SFP 1SG-TOP

Lit.: 'Gave Tanaka the book/books, I.'

b. Pause (//) preferred with focus in RD-chunks

tanaka-ni hon-o age-ta yo // watashi-**dake**-ga.

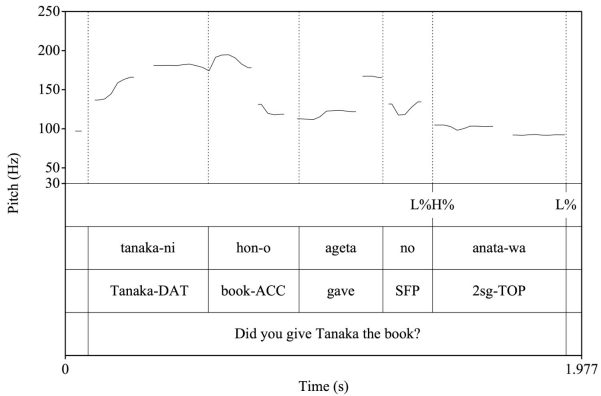
tanaka-DAT book-ACC give-PST SFP 1SG-ONLY-NOM

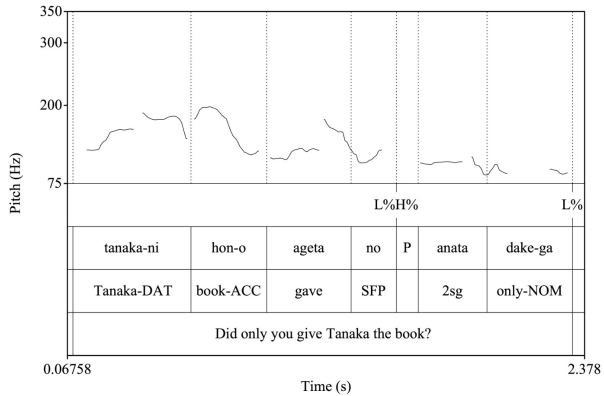
Lit.: 'Gave Tanaka the book/books, only I.'

- Confirmed with 6 native speakers of Japanese.
- Same contrasts regarding pauses in **Alasha Mongolian**
  (one speaker, data from Tommy Tsz-Ming Lee, fieldwork notes; see appendix)

A complication in Japanese

Unlike Cantonese, boundary tones (e.g., rising L%H%) are allowed at the end of main chunks (Yoshiki Fujiwara p.c., Shigeto Kamano p.c.)!





Note: Mongolian does not seem to share the pattern (see appendix)

... Though, unlike French, Japanese RD does not accept "copied" L%H% in both the main *and* RD chunks (which become two independent sentences with separate question force, as reported by native speakers).

- We suggest that:
  The **defocus** cases involve a **recursive** ι phrasing; the **focus** cases involve **two separate** ι

(48) a. $((\text{(ZP)}_{\phi}\ \text{(YP)}_{\phi}\ )_{\iota}\ (ZP_{[\text{-Foc}]})_{\phi}\ )_{\iota.max}$ RD with DeFocP

b. $(\text{(ZP)}_{\phi}\ \text{(YP)}_{\phi}\ )_{\iota 1}\ ((ZP_{[\text{+Foc}]})_{\phi})_{\iota 2}$ RD with FocP

- The lower degree of integration follows if we assume that Japanese ι does not (always) need to be right-headed, in contrast with Cantonese/Mandarin

(49) {ι:H, DEFOC} » **MATCH(CP,ι)** » **AL-ι-R**

Ishihara (2011, 2016) argues that focus does not trigger rephrasing in Japanese, since focus does not block downstepping (i.e., no boundary insertion). The variable phrasing in RD should then be attributed to ***defocus***.

(50) RD in Japanese and Mongolian

a. *Syntactic projection*: either DeFocP ([-Foc]) or **FocP ([+Foc])**
(≠ Cantonese/Mandarin/French/Catalan)

b. *Prosodic constraint ranking*: {ι:H,DEFOC} » MATCH(CP,ι) » AL-FOC
(= Cantonese/Mandarin, ≠ French/Catalan)

- It would be interesting to see how ***downstepping*** works in RD. (our next step!)

7 Conclusion

(51) Takeaway I

a. In Cantonese and Mandarin, there is a **syntax-prosody mismatch** in right dislocation: 2 clauses, but only 1 intonational phrase

b. The mismatch is due to **defocus**
➜ illegitimate **headless** ι ➜ triggers rephrasing

c. An underappreciated aspect: the ***lack*** of focus and syntax-prosody mapping

(52) Takeaway II

a. This defocus rephrasing view predicts a factorial typology of right dislocation in terms of prosodic phrasing:

b.

	Obligatory DeFocP in RD	**Optional DeFocP in RD**
DEFOC » MATCH(CP,ι)	Cantonese, Mandarin	Japanese, Mongolian
MATCH(CP,ι) » DEFOC	French, Catalan	?

Thank you!

Acknowledgments

We are particularly grateful to:

Natalie Weber, Jason Shaw, Tommy Lee, Andrea Calabrese, Mitcho Erlewine.

We would like to thank the following people for discussion and/or judgment: Yoshiki Fujiwara, Xin Gao, Shigeto Kamano, Pavel Koval, Kana Kudo, Maggie Lee, Yuyang Liu, Giulio Muramatsu, Yuya Noguchi, Yusuke Yagi, Irene Yi, Herbert Zhou, Jie Zhou, the audience at Yale, UConn, CLS-59 (UChicago), Phex-15, all the experiment participants, and all the people who have helped us in this ongoing project!

8 Appendix

8.1 Gapped RD is biclausal

Modals may dislocate to the right in both Cantonese and Mandarin:

(53) Modals can be right-dislocated with a gap

Keoi	{_/	wui}	heoi	Meigwok	gaa3	**wui**.	[C]
Ta	{_/	hui}	qu	Meiguo	a	**hui**.	[M]
3SG		will	go	US	SFP	will	

Lit.: 'S/he (will) go to the US, will.' (i.e., 'S/he will go to the US.')

However, negated modals cannot undergo RD and leave a gap. The negated modals must be also present in the main chunk.

(54) Negation cannot be right-dislocated with a gap

a. *Keoi {_/ wui} heoi Meigwok gaa3 **m-wui**. [C]
*Ta {_/ hui} qu Meiguo a **bu-hui**. [M]
3SG will go US SFP not-will
Lit.: 'S/he go to the US, won't.'

b. Keoi **m-wui** heoi Meigwok gaa3 **m-wui**. [C]
Ta **bu-hui** qu Meiguo a **bu-hui**. [M]
3SG not-will go US SFP not-will
Lit.: 'S/he won't go to the US, won't.'

This is expected from a biclausal approach: p & ¬p results in a contradiction.

(55) #[$_{CP1}$ S/he **will** go to the US.] [$_{CP2}$ S/he **won't** go to the US.]

8.2 Design

Procedure:

- Each subject participated in one session lasted approximately 60 minutes, including instructions and three mid-session breaks.
- A total of 72 sentences (48 target items + 24 fillers) were presented to the subjects in 4 blocks, each block containing 18 sentences.
- In each trial, one sentence was visually shown once at a time on a screen in an appropriate context, and subjects were required to read aloud the sentence.
- The set of the 18 sentences in a block was repeated three times in a randomized fashion. There was a short break after each block.
- In total, 4 conditions x 12 lexical sets x 3 repetitions x 13 subjects x 2 languages = 3744 tokens were obtained, and 3310 tokens were analyzed.

(56) Structure of the stimuli by condition, illustrated in Cantonese

(where σ_n indicates the nth target syllable)

[1] Canonical monoclausal: MonoCl

Syllable: $\sigma_1\ \sigma_2$ | $\sigma_3\ \sigma_4$ | $\sigma_5\ \sigma_6$ | $\sigma_7\ \sigma_8$ | σ_9

Phrase: Subj | Adv | V complex | Obj | SFP

(Lou5si1 m4-hai6 aa3.) **Sung3Zi3 fong3gaa3 heoi3-gwo3 Taai3gwok3 ge3**. (Fu3zeon3 ...)

teacher not-be SFP Sungzi on.holiday go-EXP Thailand SFP Fuzeon

'(No, teacher.) Sungzi has been to Thailand on holiday. (Fuzeon ...)'

(57) [2] Canonical biclausal: BiCl

Syllable: $\sigma_1\ \sigma_2$ | $\sigma_3\ \sigma_4$ | $\sigma_5\ \sigma_6$ | $\sigma_7\ \sigma_8$ | σ_9 | $\sigma_{10}\ \sigma_{11}$

Phrase: Subj | Adv | V complex | Obj | SFP | $[_{\text{cl.2}}$Subj

(Ngo5 zi1 aa3.) **Sau3jin3 fong3gaa3 heoi3-gwo3 Taai3gwok3 ge3**. **Sung3Zi3**

1SG know SFP Saujin on.holiday go-EXP Thailand SFP Sungzi

fong3gaa3 dou1 heoi3-gwo3 Taai3gwok3 ge3.

on.holiday also go-EXP Thailand SFP

'(I know.) Saujin has been to Thailand on holiday. Sungzi also has been to Thailand on holiday.'

(58) [3] Right dislocation: RD

Syllable: $\sigma_1\ \sigma_2$ | $\sigma_3\ \sigma_4$ | $\sigma_5\ \sigma_6$ | σ_7 | $\sigma_8\ \sigma_9$

Phrase: Adv | V complex | Obj | SFP | Subj

(Lou5si1 m4-hai6 aa3.) **Fong3gaa3 heoi3-gwo3 Taai3gwok3 ge3 Sung3Zi3**. (Fu3zeon3 ...)

teacher not-be SFP on.holiday go-EXP Thailand SFP Sungzi Fuzeon

'(No, teacher.) Has been to Thailand on holiday, Sungzi. (Fuzeon ...)'

(59) [4] Dislocation copying: DC

Syllable: $\sigma_1\ \sigma_2$ | $\sigma_3\ \sigma_4$ | $\sigma_5\ \sigma_6$ | $\sigma_7\ \sigma_8$ | σ_9 | $\sigma_{10}\ \sigma_{11}$

Phrase: Subj | Adv | V complex | Obj | SFP | Subj

(Ngo5 zi1 aa3.) **Sung3Zi3 fong3gaa3 heoi3-gwo3 Taai3gwok3 ge3 Sung3Zi3**.

1SG know SFP Sungzi on.holiday go-EXP Thailand SFP Sungzi

(Fu3zeon3 ...)

Fuzeon

'(I know.) Sungzi has been to Thailand on holiday, Sungzi. (Fuzeon ...)'

8.3 Model results

Pitch reset: Cantonese

(NumClause = Length, One-clause = Short, Two-clause = Long)

(60) Model results

```
Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's method ['lmerModLmerTest']
Formula: as.numeric(Reset) ~ NumClause * WordOrder + (1 + NumClause *
    WordOrder | Participant) + (1 | Set) + (1 | Trial)
   Data: FOByToken

     AIC      BIC   logLik deviance df.resid
   16876    16970    -8421    16842     1849

Scaled residuals:
    Min      1Q  Median      3Q     Max
-4.0286 -0.5560 -0.1001  0.3966  8.1789

Random effects:
 Groups      Name                                 Variance Std.Dev. Corr
 Participant (Intercept)                           96.975   9.848
             NumClauseTwo-clause                  595.783  24.409    0.80
             WordOrderDislocated                   11.263   3.356    0.91  0.49
             NumClauseTwo-clause:WordOrderDislocated 573.034  23.938   -0.78 -1.00 -0.46
 Set         (Intercept)                            7.545   2.747
 Trial       (Intercept)                            0.000   0.000
 Residual                                         460.593  21.461
Number of obs: 1866, groups:  Participant, 13; Set, 12; Trial, 3

Fixed effects:
                                    Estimate Std. Error       df t value Pr(>|t|)
(Intercept)                          25.6045     3.0131  14.9722   8.498 4.12e-07 ***
NumClauseTwo-clause                  53.6398     6.9142  13.0103   7.758 3.11e-06 ***
WordOrderDislocated                  -0.8655     1.6856  24.5854  -0.513    0.612
NumClauseTwo-clause:WordOrderDislocated -54.0245     6.9303  13.0682  -7.795 2.87e-06 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Pitch reset: Mandarin

(61) Model results

```
Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's method ['lmerModLmerTest']
Formula: as.numeric(Reset) ~ NumClause * WordOrder + (1 + NumClause *
    WordOrder | Participant) + (1 | Set) + (1 | Trial)
   Data: F0ByTokenM

     AIC      BIC   logLik deviance df.resid
 15657.6  15747.2  -7811.8  15623.6     1427

Scaled residuals:
    Min      1Q  Median      3Q     Max
-5.3849 -0.4873 -0.1581  0.2830  8.2375

Random effects:
 Groups      Name                                  Variance Std.Dev. Corr
 Participant (Intercept)                            160.7   12.68
             NumClauseTwo-clause                   1642.3   40.52    -0.61
             WordOrderDislocated                    289.3   17.01    -0.86  0.93
             NumClauseTwo-clause:WordOrderDislocated 1873.9   43.29     0.69 -0.98 -0.95
 Set         (Intercept)                            343.1   18.52
 Trial       (Intercept)                              0.0    0.00
 Residual                                          2760.0   52.54
Number of obs: 1444, groups:  Participant, 13; Set, 12; Trial, 3

Fixed effects:
                                  Estimate Std. Error      df t value Pr(>|t|)
(Intercept)                         52.874      6.984  21.544   7.570 1.67e-07 ***
NumClauseTwo-clause                 79.804     11.874  12.977   6.721 1.44e-05 ***
WordOrderDislocated                -15.630      6.168  12.882  -2.534   0.0251 *
NumClauseTwo-clause:WordOrderDislocated  -76.920     13.241  13.073  -5.809 5.95e-05 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Final Lengthening: Cantonese

(62) Model results

```
Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's method ['lmerModLmerTest']
Formula: as.numeric(SyllableDuration) ~ NumClause * WordOrder + (1 + NumClause *
    WordOrder | Participant) + (1 | Set) + (1 | Trial)
   Data: DurByTokenSFP

     AIC      BIC   logLik deviance df.resid
 20075.2  20169.2 -10020.6  20041.2     1849

Scaled residuals:
    Min      1Q  Median      3Q     Max
-2.9629 -0.5493 -0.0532  0.4054  6.5344

Random effects:
 Groups      Name                                 Variance Std.Dev. Corr
 Participant (Intercept)                          1127.02  33.571
             NumClauseTwo-clause                    25.60   5.060   -0.36
             WordOrderDislocated                   927.06  30.448   -0.79 -0.30
             NumClauseTwo-clause:WordOrderDislocated  39.89   6.316    0.02 -0.94  0.60
 Set         (Intercept)                           529.11  23.002
 Trial       (Intercept)                            10.91   3.303
 Residual                                         2534.98  50.349
Number of obs: 1866, groups:  Participant, 13; Set, 12; Trial, 3

Fixed effects:
                                  Estimate Std. Error       df t value Pr(>|t|)
(Intercept)                        258.493     11.827   23.129  21.856  < 2e-16 ***
NumClauseTwo-clause                 -3.804      3.585   43.598  -1.061    0.294
WordOrderDislocated               -121.477      9.065   13.147 -13.400 4.81e-09 ***
NumClauseTwo-clause:WordOrderDislocated   -4.242      4.981   53.274  -0.852    0.398
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Final Lengthening: Mandarin

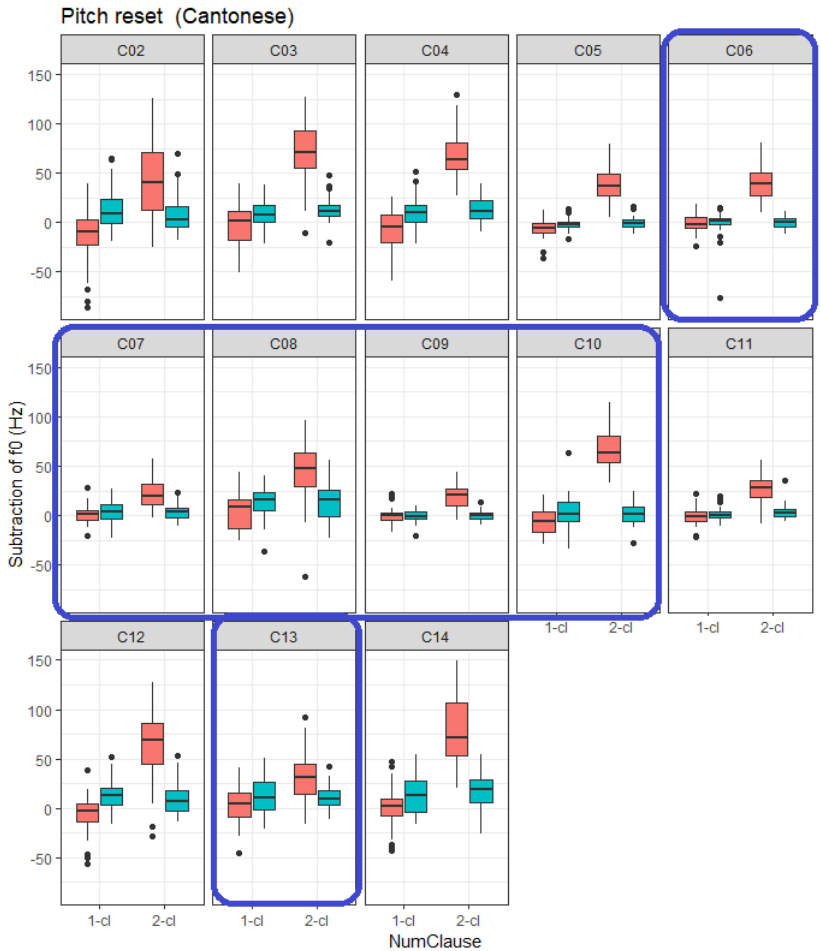
(63) Model results

```
Linear mixed model fit by maximum likelihood . t-tests use Satterthwaite's method ['lmerModLmerTest']
Formula: as.numeric(SyllableDuration) ~ NumClause * WordOrder + (1 + NumClause *
    WordOrder | Participant) + (1 | Set) + (1 | Trial)
   Data: DurByTokenMSFP

     AIC      BIC   logLik deviance df.resid
 15260.3  15350.0  -7613.1  15226.3     1427

Scaled residuals:
    Min      1Q  Median      3Q     Max
-5.5205 -0.4886 -0.0017  0.5174  8.1912

Random effects:
 Groups      Name                                    Variance  Std.Dev. Corr
 Participant (Intercept)                              518.0934 22.7617
             NumClauseTwo-clause                       23.6410  4.8622  -1.00
             WordOrderDislocated                      161.6369 12.7136  -0.91  0.91
             NumClauseTwo-clause:WordOrderDislocated    5.9933  2.4481   0.94 -0.94 -1.00
 Set         (Intercept)                             2055.3828 45.3363
 Trial       (Intercept)                                0.4088  0.6394
 Residual                                            2080.1950 45.6092
Number of obs: 1444, groups:  Participant, 13; Set, 12; Trial, 3

Fixed effects:
                                    Estimate Std. Error      df t value Pr(>|t|)
(Intercept)                          185.722     14.737  17.799  12.603 2.64e-10 ***
NumClauseTwo-clause                   10.528      3.573  46.650   2.947   0.0050 **
WordOrderDislocated                  -95.559      4.933  16.654 -19.370 7.45e-13 ***
NumClauseTwo-clause:WordOrderDislocated -14.087      4.879 275.103  -2.887   0.0042 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

8.4 Individual variations

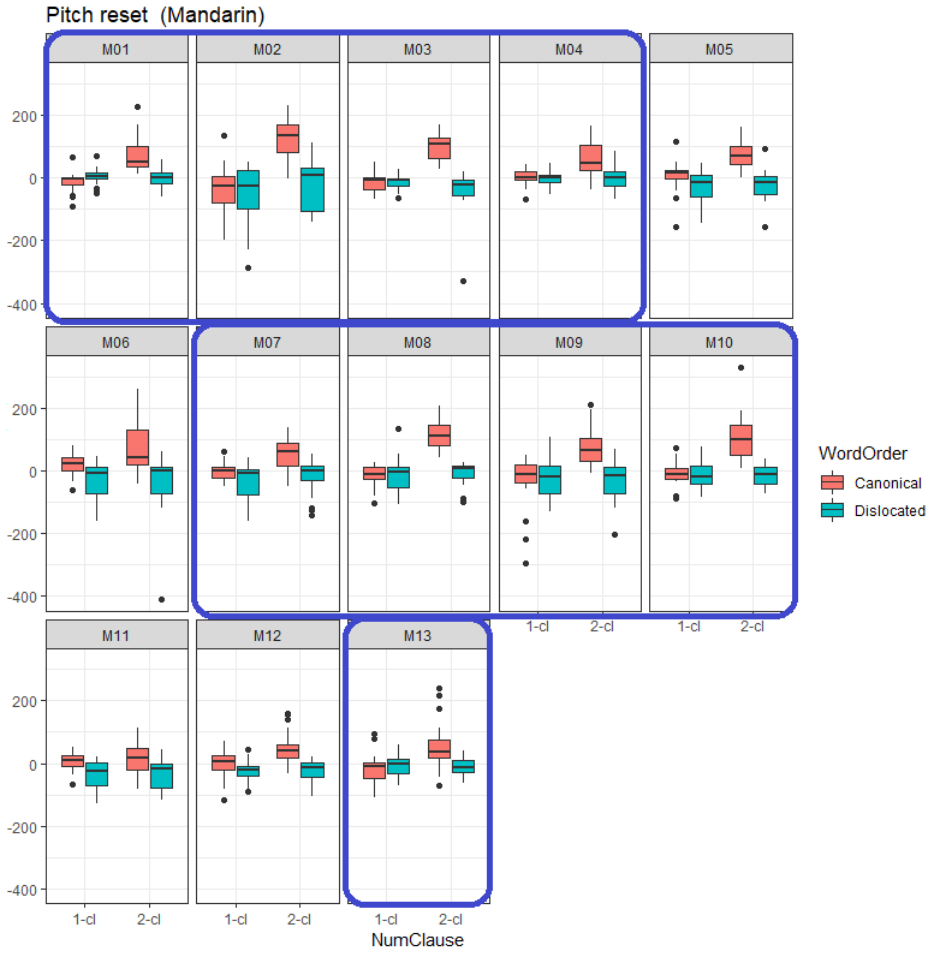
Nearly half of the speakers (six: C06, C07, C08, C09, C10, C13) do not have a significant difference between the pitch reset values in DC and in MonoCl, whereas the other seven speakers do have a significantly larger pitch reset in DC than in MonoCl..

(64) Cantonese pitch reset



More than half of Mandarin speakers (nine) do not show a significantly smaller pitch reset in DC than in MonoCl.

(65) Mandarin pitch reset



8.5 More cross-linguistic data on RD

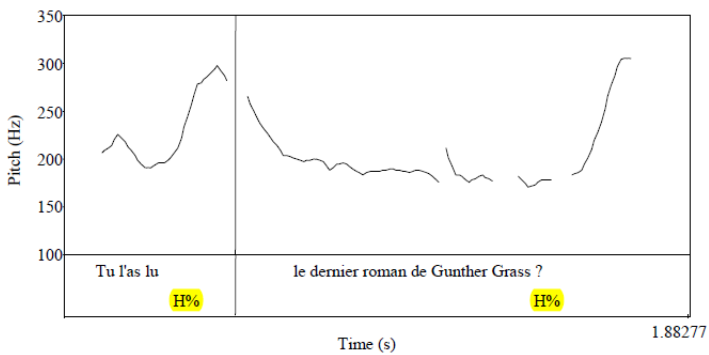
(66) French RD with two H% (Delais-Roussarie, Doetjes, and Sleeman 2004:521,524)

Situation: guest looking at book on host's bookshelf and shouting to host who is working in the kitchen:

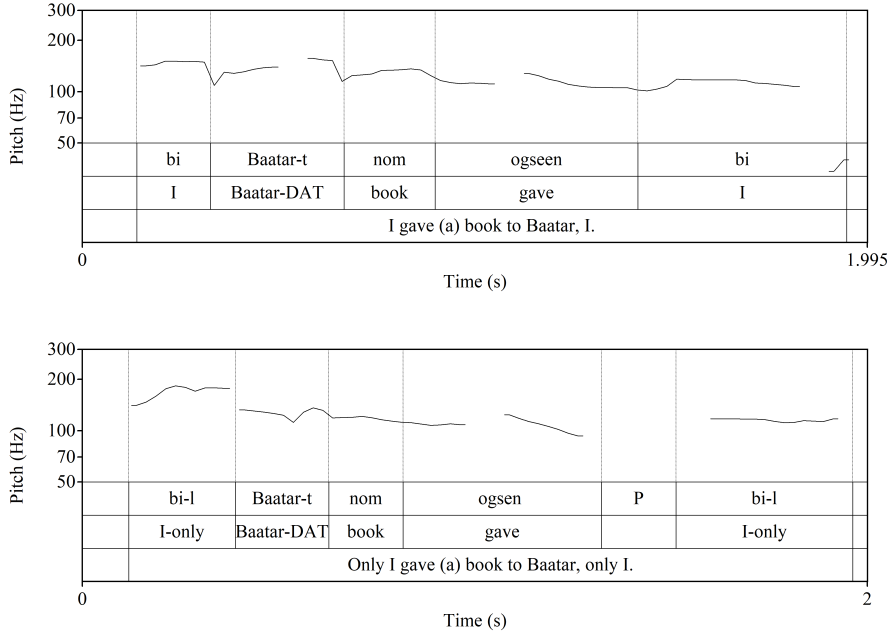
Tu l' as lu, le dernier roman de Grass?

'Did you read it, the last novel of Grass?'

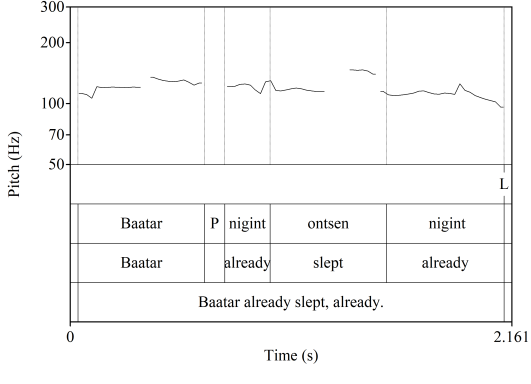
FIGURE 6 F0 curve of example (41) and (48), *Tu l'as lu, le dernier roman de Günther Grass?* (Speaker FER)

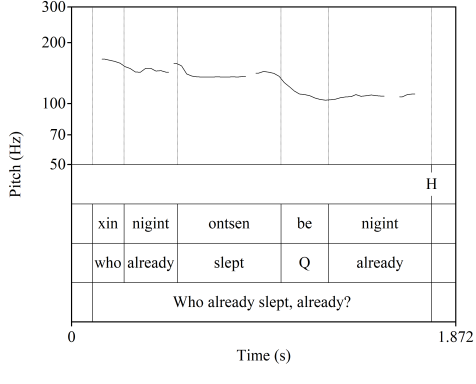


(67) Mongolian RD: pause preferred with focus



(68) Mongolian RD with boundary tones at the end





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